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9. ABSTRACT
This is Volume 1 of a two volume set of papers presented at a conference in July 1970 and sponsored by the A.I.D. Bureau of Near East and South Asia to discuss employment problems of countries in those areas. The purposes of this conference in Kathmandu were to: compare notes with officials, researchers and academicians about the nature of the employment problems within the region; to encourage some analytical work into these problems and subject it to the scrutiny of researchers from different backgrounds; and to raise the level of concern for the unemployment problem among persons who may otherwise not have the time and energy to dig deeply into this particular set of problems. Thirty papers were presented; the fourteen in this volume discuss employment and manpower problems in Afghanistan, unemployment in Ceylon, the level and composition of labor force and unemployment in India, employment, underemployment and unemployment in Iran, labor force statistics in Turkey, projections of manpower requirements in Pakistan, prospective growth of non-agricultural employment in Turkey, and other similar economic problems. An essay is included which summarizes an integrated, comprehensive picture of the ideas and issues raised. The essay discusses five main points: (1) factor price distortions should be corrected, and if possible these corrections should be linked with measures to improve the operation of the relevant markets; (2) investments must be reallocated to favor sectors producing wage-goods and the necessary inputs into these sectors; (3) more emphasis

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must be placed on equity in the distribution of income, wealth, and economic opportunities; (4) the bias inherent in technical research and development must be reversed; and (5) a comprehensive planning package that includes the generation of better employment opportunities is required.

EMPLOYMENT AND UNEMPLOYMENT PROBLEMS OF THE NEAR EAST AND SOUTH ASIA

VOL. I

EDITED BY
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FOREWORD

This volume of papers resulted from a conference that the Bureau of Near East and South Asia, of the U.S. Agency for International Development, sponsored to discuss employment problems of the countries within its perview. The purposes of this conference were three-fold: to compare notes with officials, researchers and academicians about the nature of the employment problems within the region (what we know, what we don't know; what is being, done what needs to be done), to encourage some analytical work into these problems and subject it to the scrutiny of researchers from different backgrounds, and, in general, to raise the level of concern for the unemployment problem among persons who may otherwise not have the time and energy to dig deeply into this particular set of problems.

With the kind invitation of the Royal Nepalese Government, the conference was held in Kathmandu, July 6-9, 1970, with nearly 50 persons in attendance. If we judge in terms of the quality of the papers, the level of discussion, the recommendations made, the obvious interest and intellectual excitement that at times were demonstrated, the conference was a clear success. But frankly, we found ourselves with an embarrassment of riches. The participants came with close to 30 papers and much to talk and argue out, far too much material for a three and a half day conference. As a consequence, and because of the high quality of the papers, it was generally agreed that our deliberations should be published in some convenient form. This volume is the result.

In organizing these materials, we have taken the liberty of deviating somewhat from the chronology of the conference. Instead of presenting the papers and a summary of the discussion on them in sequence, an essay that pulls together a more integrated, comprehensive picture of the ideas and issues raised was prepared by Ronald Ridker, who also served as overall editor for this volume. For the same reason, we have decided not to include the transcripts of the rapporteurs' final statements: as good as they are, they are not complete enough to serve the needs of the general

reader. We owe these four men - S. Selvaratnam, P.M.Visaria, Ahmad Kooros, and S.R.Bose - many thanks for their efforts, which served as the raw material for the summary piece that has been presented (though they cannot be held responsible for its content). In addition, as the conference participants will observe, Professor Ranis's introductory and concluding remarks have been pulled together into a single essay for presentation in this volume.

The reader will also note that three papers on employment problems outside of Asia have been included in this volume. The presentation and discussion of these papers at the conference were very useful in gaining a sense of proportions about more strictly Asian problems, and are reproduced here for the general reader with the same purpose in mind.

Though it goes without saying, it should perhaps be noted for the record that the views expressed by the authors are not necessarily endorsed by any of the other authors, let alone any of the organizations with which the participants are affiliated.

In addition to the authors and discussants, many others contributed to the success of this conference and to the development of this volume, too many for a complete listing. On top of the list must come Professors Benjamin Cohen (who unfortunately could not attend the conference) and Gustav Ranis who initiated contacts with many of the participants and suggested topics to them. Next must come all those in the Agency for International Development, but especially in the USAID Mission to Nepal, who took such good care of us before, during and after the conference, to the Royal Government of Nepal for their hospitality, and to the chairmen, discussants and rapporteurs for each session. We would also like to thank Rita Sehgal who took on the job of turning our various forms of English into a readable whole.

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EMPLOYMENT ASPECTS OF DEVELOPMENT

Dr. Harka Gurung

I. The objective of development planning is maximization of production and social progress by eliminating impediments to the attainment of this composite goal. In simple terms, the success of planning depends on economic growth keeping ahead of the population growth. It is generally recognized that the three basic requirements for economic growth are natural, human, and capital resources. Man may alter his environment through technological ingenuity but ecological repercussions amply demonstrate that there are obvious limitations to the manipulation of physical space. As for financial resources, large-scale transfer of capital through foreign aid over the last two decades indicates its limited impact in terms of economic development. The fuller exploitation of natural resource endowment and effective utilization of capital indeed is very much the function of the quality of population. However, the appreciation of human resource as the strategic element in economic development is not a new idea. Adam Smith noted in 1776 that the basis of national wealth were the skill, dexterity, and competence of individuals. Although Smith allowed for three agents of production-land, capital and labour - it was really in the last that he expected to find the basic dynamics of economic development. The fourth factor of production - entrepreneurs - we realize is also very much a part of social attitude and opportunity. The emphasis on capital by later economists (following Ricardo) seems an expensive diversion in the context of the present increasing recognition of a socio-cultural dimension in development economics. The development process may be seen as the transformation of the economy from one based on traditional workers into one based on efficient labourers.

II. The element of enskilling the labour component introduces a host of concepts relating to employment, unemployment and underemployment. Economic growth implies output maximization, and increase in production may be effected by either a higher total labour input or a higher production per unit of labour input or the combination of both. But there is an inherent dichotomy in these two approaches: one advocates wider participation while another emphasizes

efficiency. The second approach, that subscribes to labour efficiency, has certain limitations, at least in the Asian context. The training of a few or the growth in certain industries and areas fails to cope with the needs of population pressure and the consequent labour force. Again, introduction of improved techniques tends to raise the demand for capital investments and it is doubtful whether capital-intensive occupation could cope with the increasing demand for social benefits. The first approach, advocating wider participation, assumes a vast labour reservoir awaiting productive employment that could provide a wider spread of wage receipts through expansion of employment opportunities. Since only a fraction of the labour force can be made more productive, due to resource limitations, the problems of under-employment, unemployment and inefficient production will remain.

Employment problems in Asian countries encompass the realms of rapid population growth, quality of population, social institutions and attitudes towards work. The seasonal rhythm of agriculture and agro-based industries contribute to psychologial attitudes that are less amenable to regulated working hours. The rural migrants attuned to agricultural pursuits find it difficult to adjust to the urban work pace in the earlier stages. Then there is the persistence of traditional occupational pursuits transcending population structure and employment requirements. The biggest constraint to improving the quality of manpower is the large base of pre-literate traditional population. The orientation of this large population, which provides the majority of the labour force to the changing demands of development, has ever remained an immense task. Neither is this problem going to be eased in the near future since this population group is being further reinforced by school drop-outs owing to the marginal coverage of educational facilities. Moreover, the boundaries of the labour force are made less clear by the infusion into the working population of juvenile workers deprived of education as well as older age groups without retirement benefits.

The immediate problem of feeding the rapidly increasing population may have been minimized by the 'Green Revolution', but there still remains the problem of providing gainful employment to the ever expanding labour force, including those displaced by intensive agricultural practices. The large influx of ill-equipped migrants to urban areas, leading to labour abundace, may in turn adulterate labour quality. It is not without significance that many Asian countries have

advocated creation of greater job opportunities for 'fuller' employment as their development plan objectives. The key to the understanding of efficiency or inefficiency in Asian countries may lie in the concept of joint-family enterprize, whereby certain individuals, sectors, and areas have to support the less efficient and laggard components of the system.

III. One might attribute the very low average productivity of the labour force to socio-cultural traits (that will change only with time) and labour abundance with population increment. Even more tragic is the phenomena of the educated unemployed. The increase in the number of educated unemployed, alongside with shortages of trained personnel, has became a standard pattern in most of the developing countries. It represents a veritable waste of resources, both in terms of manpower and investment. This adverse situation is very much the making of maladjustment between the education system and the socio-economic needs of the developing countries. The persistence of class monopoly of education has continued to make education primarily a means of escaping from manual labour. In a society where literacy is low and education scarce, even the poorly-educated desclaim involvement in manual work and students tend to continue their studies because they are unable to find work that is not manual. The educated or semi-educated converge to the urban areas as a salvation from the dreariness of rural life and the implosion of the educated into urban centres is contributed by their greater mobility. Further, since they have less occupational mobility, it is only in the variety of urban services that they can seek employment. The quality of education ordains them to seek refuge in urban amenities,with lower wages,than risk to act as catalysts in less developed areas. This anti-rural bias contributes not only to the attrition of dynamism in rural societies but also leads to the alienation of the articulate group from the majority of the population.

The answer to this dismal situation does not lie in pronouncing platitudes on the dignity of labour. The need is for devising a new educational system in consonance with the country's development aspirations. For example, the primary education content should not merely cater to the needs of the few who go on to the secondary level but should rather address to the benefit of the majority 80 per cent

who join the labour force. The super-caste ascription to the educated may after all symbolize a ritual value in pre-literate societies, and a wider diffusion of general and adult education could facilitate a more realistic appraisal of the educational function.

IV. All developing countries value technical manpower but more intriguing is their proper utilization. Their immediate and specific requirements may be fulfilled by foreign personnel but high-level native personnel remain the ultimate objective. Technical manpower may be acquired through training facilities, within the country or abroad, depending on the level and field. The impediments of their fuller exploitation are of a socio-economic nature. High-level manpower demands a larger investment on infrastructure and occupational coefficients that the poorer countries will take time in developing, and their under-utilization, misutilization, nonutilization or flight through brain drain in the process, can be a tremendous economic loss.

I shall close my statement with two examples as a socio-political challange to the fuller utilization of expensive technical manpower. The first relates to problem relevance and the second to skill circulation. High-level training attracts trainees from the available educated pool, and since education, in its early stages of development, is restricted to privileged and urban groups, technocrats are drawn from a limited social base. Their early take-off into modernistic employment would also mean a perpetuation of their dominance for a considerable time. This may imply that their acquired expertise has a questionable relevance in the rural sector where the majority live and work. Introduction of new ideas or the modernization of the traditional sector needs to be preceded by cultural orientation. The peddling of innovations in rural areas is a difficult process, not only due to rural conservatism but also due to lack of intimacy of field problems among the innovators.

Intimacy does not necessarily demand social heritage. It can be acquired through long association and experience. But here again there is a gap between the middle-level technicians, who perceive the realities, and the high-level technocrats who merely conceive the problems. The gap is a serious one when we realise that the parting of the ways to the middle-level

and high-level professions may not be by virtue of ability but through socio-economic opportunities. The rigid professional hierarchy impairs dialogue as well as dissipates middle-level technicians' enthusiasm for want of professional and economic advancement. Emphasis should therefore be given to in-service training rather than formal education for the purpose of skill acquisition, and avenues need to be devised for circulation among technical levels. This would create a healthy mobility of personnel at different levels and at the same time enlighten them on problems and policies through direct field experience.

EMPLOYMENT AND UNEMPLOYMENT IN NEAR EAST AND SOUTH ASIAN COUNTRIES A REVIEW OF EVIDENCE AND ISSUES

Ronald G. Ridker

I. Background and Projections
II. Agriculture
III. Industry and Factor Price Distortions
IV. Construction and Migration
V. Conclusions
VI. Footnotes

During the past several years concern for problems associated with underutilization of labor in developing countries has grown rapidly. The countries of South Asia and the Near East have been no exception to this trend. It is not that growth rates have been exceptionally poor (though they have not been uniformly good) or that bottlenecks to continued progress have suddenly loomed larger than anticipated. On the contrary, the new seeds and agricultural methods, which have taken hold in this region with a rapidity and tenacity that compares favorably with most other regions of the world, have renewed hopes for more rapid progress. Rather, these concerns appear to have arisen along with the growing conviction that there really is such a thing as a Green Revolution.

On the positive side has come the realization that increased per capita supplies of food, the principal wage good, may provide the means for mounting a renewed attack on the employment problem. Perhaps now, before population increases catch up with this latest set of technological advances, the opportunity is present to mobilize a significant portion of the vast reservoir of underutilized human

energy, to get ahead - and perhaps, once and for all, stay ahead - of the population problem.

On the negative side the suspicion has arisen that growth may not be enough, that if destructive forms of social tension and conflict are to be avoided, greater efforts must be mounted to ensure that the fruits of this growth, both in terms of meaningful jobs and income, are distributed more equitably.

Are the fruits of the Green Revolution being reaped primarily by larger, already well-placed farmers? Is mechanization, which appears all but inevitable given current government policies, going to displace additional labor that cannot be absorbed elsewhere? Will the experience of some Latin American countries, where open unemployment in urban areas is growing at alarming rates despite very rapid rates of increase in manufacturing output, be repeated in South Asia? Will past trends, which indicate a rate of growth in the labor force in excess of the growth rate in employment in organized sectors, continue in the future without substantial changes in government policy? These are but a few of the nagging and ominous questions that have been raised with increasing frequency in the recent past.

If these questions should be answered in the affirmative, we have a serious problem on our hands, one which could jeopardize much of the progress that has been made during the last twenty years of struggling with the problems of development. At this juncture, however, we must step with caution in providing answers. There is so little information, and the little that exists is such poor quality, that we just cannot say with confidence much about the nature of the problem, let alone what, if anything, should be done about it. Nevertheless, policy makers are demanding answers. And rightly so, for if the problem is as serious as some believe, remedial action is called for now.

In the light of these considerations, the Bureau of Near East and South Asia of the U.S. Agency for Inter-

national Development sponsored a conference, held in Kathmandu in July 1970 to discuss these issues. This paper is one of the products of that conference.

Originally conceived as a somewhat elaborate rapporteur's report, this paper has evolved into a review of evidence and issues, relying heavily on the conference papers and rapporteur's reports, but drawing in other materials not available at the time of the conference as appropriate. As such, it has become an essay reflecting a point of view which the author arrived at after some weeks of trying to digest the materials available. Since this paper is not a simple summary of proceedings - and indeed at times expresses views at odds with those expressed in the papers - it is no substitute for a careful review of the conference papers.1/

Section I discusses the evidence available as well as projections of the employment problem into the future, to the extent that information is available.2/ It concludes that, with a few important exceptions, open unemployment is less severe in the Near East and South Asian countries than it is in other developing regions of the world, that other forms of unemployment which are not important, and that an 'incomes approach' may better describe and explain this larger problem. In addition some indications that the problem may become more severe in the future are discussed. Far more information is needed on the characteristics of the unemployed and on behavioral responses of the poor to income and employment prospects, before our understanding of this situation can be pushed much farther.

Section II discusses the problems of employment in the agricultural sector, concentrating on the issue of mechanization. It turns out to be not all that clear that the various forms that mechanization has so far taken - including tractorization - are detrimental from an employment point of view; certainly, given appropriate changes in institutions, they need not be. Section III discusses the issue of factor price distortions, often mentioned as a principal cause of unemployment in less-developed countries. It concludes that the principal effect of eliminating such

1/ See footnotes at end of article.

distortions, along with other biases in favor of more capital-intensive techniques and sectors, would be to improve long run efficiency, growth, and indirectly, therefore, employment prospects, but that other changes are needed as well to correct both the short run and long run manifestations of the problems. Section IV briefly discusses special topics related to the construction sector and to migration. The final section makes several general policy recommendations, the essence of which is that the principal difficulty may be one of structural disequilibrium resulting from a long period of neglect of sectors associated with the production of wage-goods; and that this neglect will require some redirection of investment and some redistribution of income, along with some changes in market structure and prices, to correct.

Most certainly, the nature of the employment problem and the factors influencing the situation differ widely among the countries discussed. Along with the horrendous data problems involved, this makes generalizations of the type made in this concluding section hazardous in the extreme. But hopefully these recommendations will be useful at least as hypotheses to guide discussions of individual country problems into area not yet fully explored.

I. BACKGROUND AND PROJECTIONS

One of the principal difficulties in the way of judging the severity of the problem is the fact that, especially in developing countries, unemployment - or more accurately, underutilization of labor - appears in many guises. While some individuals are fully unemployed and seeking work, others have given up looking or have been unemployed for so long they have become unfit for some forms of work. Still others are employed part-time; again some of these are seeking additional work and some have given up the search. And finally, many others are employed only nominally in the sense that their productivity and income are far below some average or norm. It is important to distinguish between these various forms of unemployment, for their policy implications differ somewhat. But it is also important to recognize that they tend to blend into one another, that a concentration on only one or two such forms will not be adequate to represent the whole problem.

Open Unemployment:

We begin with open unemployment, what is commonly meant by involuntary unemployment in Western countries: unemployed persons who are willing and able to accept work on the same terms as employed persons of comparable abilities and who claim to be looking for such work.

There are, of course, many difficulties with this concept when applied in less developed countries. Part of the difficulty involves defining the labor force. Particularly in poor countries, membership in the labor force is sensitive to changes in general economic conditions. Many persons not now seeking work would surely do so if demand for labor picked up. Indeed, many who consider themselves self-employed because they are working in family enterprises would enter the open job market if prospects there improved. On the other hand, others for whom work inside the family or schooling is preferred would leave the labor force if family incomes increased. Policies that ignore such behavior responses could have some surprising results.

The other major category of problems is statistical. Of the three sources of data, information from labor exchanges is probably the worst, for reasons indicated by several authors; indeed most conference participants felt that it should be ignored. Somewhat better are data from censuses, but typically their questions are limited to the most simple of categories with no time allowed for probing into meanings, they are too few and far between for policy purposes, and, relying as they must on poorly trained enumerators, their accuracy is justifiably suspect. Sample surveys are better; but to say this is not to say much. Given internal migration and the difficulties of reaching some segments of the population, it is doubtful that representative samples can be established and maintained over time. Perhaps more serious is the fact that the results tend to be very sensitive to the way the questions are asked: to the length of the reference period, to the wording of questions about seeking additional work, and so on. Such problems are amply discussed in the papers on this topic.

Despite these difficulties, it is important that we have a picture of the open unemployed, for they are commonly thought to constitute a greater threat to social stability than the partially unemployed or underemployed. But obviously the data must be used with extreme caution.

Reported rates of open unemployment (as a per cent of the labor force) vary markedly between countries within the region. On the high side are East Pakistan (29 per cent) and Ceylon (19 per cent); on the low side are India (2 per cent or less), Iran (4 per cent), Afghanistan (5 per cent in urban areas), and probably Nepal (which is likely to be similar to India in this respect).3/ In general, the rates are lower than those recorded for Latin America and Africa. A number of Latin American cities are said to be experiencing open unemployment rates of 10-15 per cent. In Africa, the rates apparently vary considerably, depending on the degree or urbanization, but few place urban unemployment rates below 10 per cent and estimates for some cities are as high as 30 per cent.4/

Urban unemployment rates are commonly thought to be higher than rural, and data from Nepal, Turkey and Latin America support this contention. Sample survey data from India, however, suggest that urban rates are slightly lower than rural rates. In 1961/62, for example, unemployment was estimated to be 3 per cent in urban and 5 per cent in rural areas. It is also interesting to note that in later years Indian unemployment rates appear to have fallen, with rates continuing to be less in urban areas. For 1966/67 the comparable urban and rural rates are 1.6 per cent and 2.7 per cent respectively.5/

Undoubtedly, a principal reason for these differences in observed experience arises from differences in definition and data-gathering methods. While most countries use methods that are close to those recommended by the International Labor Organization, it is easy to demonstrate that slight variations can cause sizeable differences in recorded rates. Nevertheless, some of these differences appear to be real. Turnham, for example, has demonstrated that Indian urban unemployment rates are low compared to those of less developed countries in general, even after making maximal adjustments for differences in definition that might bias the Indian figures downward.6/

To date there have been no systematic investigations of the reasons for these differences between countries. An hypothesis advanced by the conference participants is that they may be related to the proportion of persons working in household enterprises (often reflected in rates for self-employed and unpaid family workers), which is high in Afghanistan and India and low in Ceylon. However, no one offered a reason why this proportion should differ so much between these countries. Another, complementary, explanation could be that open unemployment may be a luxury that only persons in richer countries, and relatively better-off persons in poorer countries, can afford: the very poor are forced to take lower-paying jobs, including setting up household enterprises, rather than waiting for something better to come along. The evidence presented below on the characteristics of the unemployed tends to support this hypothesis; and it might explain why Asian countries appear to have lower unemployment rates than Latin American countries, where per capita incomes are generally higher. But it still does not explain why Indian rates appear to have fallen over time, or why reported rates in East Pakistan are so high.7/ A careful investigation of the reasons for these intertemporal and intercountry differences might shed useful light on the nature of the unemployment problem in general.8/

Characteristics of the Unemployed:

Little is known about the persons classified as unemployed: for how long they are unemployed, how they subsist, from which demographic, social, educational and occupational groupings they come, and into what occupations they are finally absorbed. But the bits and pieces of evidence that exist in various countries do not contradict the general impression that the two largest groups are the indigent (those incapable of productive work because of poor health or age) and the young, new labor force entrants. This latter group appears to account for between 40 and 60 per cent of the urban unemployed,9/ and because of their political significance, plus perhaps the fact that somewhat more is known about them, they were discussed more fully than other unemployed groups at the conference.

For all countries represented at the conference, this young group appears to have the following characteristics. They are new entrants, typically indicating they have never held a salaried job before. They are in the middle groups so far as education is concerned; typically the lowest unemployment rates are found among illiterates (and often among literates with less than a matriculate), the next lowest rates among those with college and graduate degree, and the highest rates among those with matriculate but less than graduate degrees. Similarly, data from India, 1961/62, indicate that the duration of employment is longer among secondary graduates than among those with less education. In addition, the typical urban unemployed is likely to be an unmarried dependent (not a head of a household).

Two interpretations were suggested to explain why the unemployed are concentrated in a group with these characteristics. First, one would expect any gap between the demand and supply of labor to be reflected in higher unemployment rates among the young, just because they are new entrants without experience or seniority. But second, these characteristics are more or less what one would expect as a consequence of the "waiting-period phenomenon". This group can afford to be unemployed since they generally have other means of support and few responsibilities. In many cases it pays them to wait for the "right" job which will put them on a higher life-time earnings track than would the first job offered. In this sense, their unemployment is partly voluntary, even though they record themselves as looking for work, just as the employment of others at jobs beneath their training and status is partly <u>in</u>voluntary.

The second explanation is supported by the common observation that the more education an individual has, the less he prefers manual labor. It also help explain why urban unemployment rates tend to be higher than rural, for it is in urban areas where family incomes are higher and where most of the "modern", high wage and status jobs preferred by this young, better-educated group are located. But the first explanation, which is thought to play a significant role in Western countries, should not be overlooked.10/

A number of implications of accepting this picture of the urban unemployed, plus the alternative explanations for this picture, were discussed by the conference participants. First, if this picture is correct, urban unemployment is likely to grow with education levels and with increasing real incomes among urban families11/ (other things, including sectoral distribution of employment, more or less constant). Second, if our goal is to improve income distribution rather than to reduce idleness *per se*, we may achieve it more effectively by improving the incomes of the lower-paid *employed*, rather than by efforts that directly or indirectly increase the desired job opportunities for this special group. There may be good political reasons for reducing unemployment among members of this sometimes politically vocal and potent group rather than catering to the needs of the poorly paid, but it should be recognized that family income distribution may be worsened rather than improved as a consequence. Third, to the extent that the waiting-period rather than the excess-supply explanation is applicable, an increase in expenditure on public works projects will not reduce the rate of urban unemployment to any significant extent (although, by providing alternative and presumably better-paid work for the poorly paid and underemployed, it would improve income distribution). An increase in aggregate demand may accomplish somewhat more for this special group, but still not all that much.

While these implications follow the data, the data are poor, sketchy, and subject to yet other interpretations. Because of the seriousness of these implications for policy, the sooner the information gap about the characteristics of the unemployed is filled the better.

Other Forms of Unemployment:

In addition to open unemployment, several other forms of unemployment were discussed. One pertains to those who are not in the labor force but who would be if the demand for labor were greater. In the U.S., according to Professor Reynolds, there is a swing of two million in the size of the labor force between the high and low points of business cycles. There was some disagreement over whether this

form of unemployment was larger or smaller in less developed countries. Dr. Kooros presented us with a study by Ettore Denti that can be used to show that while overall labor force participation rates are lower in less developed countries, the age-specific rates are higher, the difference being accounted for by the difference in age structures between less developed and more developed countries.12/ Since the relevant rates are the age-specific rates and since they are somewhat higher, this form of unemployment may be somewhat less important in less developed countries. This conclusion is consistent with the notion that unemployment (in this case, voluntary withdrawal from the labor force) is a "luxury" that large numbers of persons cannot afford in less developed countries.

While the magnitude of the labor force may not fluctuate over the course of the business cycle as much as in developed countries, fluctuations within the course of a year - primarily due to agricultural cycles - can be dramatic. But it is not clear to what extent this represents a real withdrawal from the labor force or a withdrawal which would not be made if the demand for labor could be increased during the off-season. Data adequate to answer this question are not available.

Other forms of underutilization of labor typically bear the name underemployment. Such underemployment may take two forms. One involves work for less than the commonly accepted number of hours of the week or days of the year. The problem of seasonal unemployment in rural areas is an immense case in point. Work-sharing among family members is another. The second form of underemployment involves work at jobs the productivity of which is below some average or norm. The street-corner vendor of shoe strings may sit at his stall for fourteen hours and sell only a few pair. The semi-redundant messenger in an office may spend most of his day waiting for a message to deliver or an order to get his supervisor's tea. The unpaid family member may stretch a four-hour job into eight hours because he is in effect sharing a single eight-hour job with another family member.

This last example suggests that the two forms of underemployment are related to the same phenomenon and

often cannot be separated. Measurement problems are severly complicated by this fact. Not only does one have to determine what constitutes an acceptable work-load in terms of hours, one must also establish a basis against which to decide whether an individual is stretching out his work to fill the time at his disposal.

While it is not difficult to establish a customary work period for an industrial society, the problems of doing so for agricultural pursuits are formidable. In general there is nothing comparable to a 9 to 5 job or a 5½ day work week: there is a certain amount of work that needs doing and it varies greatly among season. Seasons or planting cycles, not hours, days and weeks are the proper units of measure.

The attempt to determine an acceptable norm of productivity is beset with even more difficulties. First, along with preferences for leisure, an individual's productivity depends in part on his health and level of nutrition. If he is undernourished he may be incapable of working faster or putting in more than four useful hours of work. It would be highly misleading to assume that he is capable of more hours of work without an increase in wages (which is highly correlated at low income levels with nutrition) if only more work were offered to him.13/ Second, an individual's productivity is a function of the other inputs with which he can work, and of organizational and institutional arrangements. A farmer can be more productive with new seeds than with old, with fertilizer than without, with a tubewell than without. At what point should we stop changing these determinants of productivity to establish a norm against which to determine some "surplus" labor time available? And if we attempt to measure the surplus without assuming any change in these factors we are likely to find there is little or no surplus available. It is because of these difficulties that there have been even fewer attempts to measure underemployment than there have been to measure open unemployment.

Several pieces of evidence concerning underemployment, at least in the sense of surplus hours or days of labor available, were presented and discussed. Professor Hamurdan presented estimates for Turkish agriculture in 1967 indicating that there are surplus man hours available, 13 per cent during the peak season and 61 per cent during the slack season, and that there is no prospect for improvement by 1972. In these estimates several useful distinctions are made. One is between surplus labor and removable surplus, the former meaning idle labor and the latter meaning labor actually available for off-farm jobs. Season by season he finds significant differences between estimates of the two concepts.

Hamurdan's method of deriving estimates of removable surplus is to adjust crude surplus estimates by assumed changes in the typical number of working days in each season and by assumed expansion of the labor force during the peak period. An alternative procedure for estimating removable surplus would be to ask individuals whether they are available for additional off-farm work during different seasons. It has the advantage of getting at likely behavior changes, rather than relying on assumption about such behavior. But it is not without its own set of difficulties, as we shall see.

This latter approach was apparently used in one round of the Indian National Sample Survey. The results were summarized in a table presented to us by Professor Visaria indicating selected characteristics of the gainfully employed in rural India for the years 1960/61 and 1961/62, broken down by self-employed, unpaid family workers, and wage employees. For males, it indicates that the average number of hours worked during the reference week was close to 47 and virtually identical for the three classes of workers and that 12 per cent of each of these classes works 28 hours or less. Of this latter group, less than half indicated any availability for additional work: 49 per cent of the wage employees, 18 per cent of the unpaid family workers, and 29 per cent of the self-employed. In a similar vein P.J. Richards' paper on Ceylon presents 1959-60 data indicating that while 45 and 29 per cent of urban and rural employed,

respectively, worked less than 40 hours during the reference week, only 19 and 11 per cent were available for any additional work; 1968 data indicate that in urban areas 1.4 per cent of the employed were available for part-time work and 1.3 per cent for full-time work, while in rural areas the comparable figures were 2.1 and 2.5 per cent.

A related observation that is relevant for assessing the extent of rural unemployment and underemployment in India is that recruiters for rural works gangs sometimes report difficulty in filling quotas.

Few policy implications should be drawn from these bits of data. The survey data on willingness to work refer to a one-week period during an unspecified season; the answers to the same set of questions would probably vary significantly from season to season. In addition, there is no way of knowing from such surveys what kind of work and remuneration the individual is thinking of when he says he is or is not available for work, and therefore whether it is feasible to supply that kind of work. So far as the observation about shortages of labor for rural works projects, one would want to know a good deal about the conditions and terms of the work offered before drawing any conclusions about policy. The jobs offered could easily be unacceptable if the salary, considering transport and other additional costs, is too low, if the offer is for work during the busy season, or if the work would interfere with the individual's farm routine without being permanent enough to induce him to give up the farm work.

But if these shreds of evidence proved to be generally correct and if respondents to questions about availability for extra work assume that remuneration and general working conditions would be the same as in their current job, there would appear to be less underemployment (in the sense of surplus hours) than is commonly assumed, at least in India and Ceylon, though perhaps not in Turkey. In addition these observations throw some doubt on the assumption that an expanded rural works program - of the type currently practiced - is the way to handle the problem. At a minimum, a rural works program must be tailored to variations in the seasonal supply of labor and compensate the individuals

for the additional costs of taking such a job. Such alterations in current programs could prove expensive, and in the last analysis it may be that the spread of multiple cropping made possible by the availability of new seeds and irrigation is a more economical way of absorbing any surplus labor time. But this is pure speculation and must remain so until detailed micro studies of the situation are undertaken.

No studies of underemployment in the sense of low productivity employment were presneted. Given the methodological problems in doing so, this is not surprising. Still, in rural areas where 80-90 per cent of the labor force are either self-employed or family workers, low productivity is closer to the heart of the problem. In this connection it is interesting to note the comments made by I.Z. Bhatti about a study he is directing that uses what might be called an incomes approach to estimate the adequacy of rural employment opportunities. First, it takes as its unit of labor the household rather than the individual. There are many economic and social reasons for this, principal among them being that both income and employment appear to be shared by individuals within this unit. And second, it starts from the premise that for welfare purposes the adequacy of employment opportunities judged by income or household value added is more important than the number of hours individuals are working.

Obviously, the need to impute values to non-market activities and the difficulty in sorting out the reasons for differences in value added raise problems with this approach. But it is an intriguing approach to the unemployment problem that should be followed with interest. Indeed, it would be interesting to extend the approach to analyze the problems of the urban labor force, and possibly also to evaluate the adequacy of employment opportunities in terms of expected lifetime earnings rather than only in terms of current income. A likely finding to result from such studies is that some segments of the fully occupied labor force are worse off in an incomes sense than many who are openly unemployed, a finding that could have very significant policy implications.

Projections:

Despite the inadequate data base, projections of unemployment are useful in suggesting the general order of magnitude that the problem is likely to have in the future. Ideally, we should like to have two types of projections, first, projections of demand and supply of labor broken down by relevant categories and sectors, and second, some estimate of the change in forms that this unemployment is likely to take (e.g., will there be a shift from more disguised or hidden forms to more open forms?). Only the first was treated in detail by the conference.

Typically, projections of the supply of labor involve projections of the working-age population and likely labor force participation rates for this age group. Sometimes, possible rates of migration are also projected. While it was recognized that this latter is important and might identify shortages of special skills - skills which could in themselves be bottlenecks in the better utilization of other categories of labor - the participants concentrated on the demand side of the equation.

The most commonly used method of projecting demand for labor - taken to be synonomous with employment itself for a country or a sector within a country, is to derive it from projections of output, using exogenously determined marginal (or average) productivity estimates for some future date. Obviously there are many difficulties in applying this method, difficulties that are fully discussed in the papers pertaining to this topic. Perhaps the most serious is the problem of developing marginal output-labor ratios. It has led the Planning Commission of Ceylon to make their estimates on the basis of considerable qualitative and judgemental materials for each sector, as the paper by Srivastava and Selvaratnam indicates. It has led the Planning Commission of Pakistan to employ coefficients derived from a study of inter-country comparisons. This plus other difficulties, such as the problems of projecting migration rates, has led the Turkish State Planning Organization to set up a model capable of easy parametric variation and to study the sensitivity of

employment to changes in these parameters. Each of these procedures has its own set of problems which, along with other considerations, has led the Indian Planning Commission to forego making - or at least publishing - any such estimates in conjuction with its Fourth Plan.

The results of the studies at hand are disturbing. For Ceylon, where population in the age group 15 to 54 has been growing by 3.4 per cent annually, and where recorded unemployment is already high, employment in all sectors is projected to grow by 3.3 per cent per year, during the years 1968 through 1970. In Pakistan, where during the decade of the sixties, the labor force grew by 2.7 per cent annually and employment is estimated to have grown by slightly less than 3.4 per cent annually, according to one estimate the decrease in the pool of unemployed is expected to continue through 1975: during the period 1970 to 1975, the labor force is expected to grow by 3 per cent per year while the annual growth of employment is expected to be over 4 per cent. These rates are sufficient to cause an absolute decline in unemployment between 1970 and 1975, the decline being felt in the agricultural (rural) sector, but <u>not</u> in the non-agricultural (urban) sector where, due to migration, unemployment will rise somewhat. These conclusions appear to hold for both East and West Pakistan.14/ But as Hashmi and Hussain point out, these estimates are taken from coefficients derived from a 40-country model that includes few countries the size of Pakistan and no country with as low a per capita income or as high a density of population on the land. Indeed, assuming it takes two acres per man to be fully employed in traditional agriculture, they estimate that 44 per cent of East Pakistan's agricultural labor force currently must be underutilized. and that this figure will rise to 50 per cent by 1980.

Merih Celasun's paper on Turkey, which includes some sensitivity analysis, projects non-agricultural unemployment rates out to 1982. In all cases investigated, these rates increase over time. Differences in the extent of the increase are accounted for by changes in assumptions. Thus, it is interesting to note that the projections of labor demand are highly sensitive to changes in the productivity

assumptions and in the pace of urbanization, 15/ moderately sensitive to changes in assumptions about urban labor force participation rates and - perhaps most significantly - least sensitive to changes in the non-agricultural growth rates over a 5-year period. A high growth rate sustained over a 10-year period does matter, however, especially when labor productivity is low. For example, assuming an annual growth in GNP of 6.5 per cent, in productivity of 2.5 per cent, urbanization of 6 per cent from 1972-77 and 5.5 from 1977-82, an urban labor force participation rate of 41 per cent and fairly optimistic assumptions about foreign demand for Turkish labor (500,000 per year), the urban unemployment rates projected for 1977 and 1982 are around 13 and 21 per cent, respectively. But if annual growth of GNP is raised to 7 per cent (all other assumptions remaining constant) the comparable unemployment figures become 11 and 18 per cent.

Of course, such estimates are really conditional predictions, assuming variables not included in the model do not change. In practice, these high rates may never be experienced; for long before they occur, the pressure for jobs will induce a number of forms of adaptive behavior: a slow-down in urban migration, withdrawal from the labor force, more work and income sharing in the rural if not also in the urban sector, and perhaps even a decline in real wages with a concomitant stimulus to developments in more labor-intensive sectors. We can conclude from these studies that it will become more and more difficult to utilize labor effectively given the rapid rates of growth in the labor force, but we can say little about how this problem will manifest itself, whether in the form of open unemployment as appears to be the case in Turkey and Ceylon, or in the form of underemployment as appears to be the case in India, Afghanistan and possibly Pakistan. Similarly, because of the possibilities of work and income sharing we can say little about the extent to which income distribution may become more unequal as a result. 16/ Investigations of the ways in which this developing situation is likely to manifest itself - and the reasons why it has manifested itself in different ways in the past - could be very useful.

A Tentative Conclusion:

Obviously more data are needed before any hard conclusions can be reached. But given currently available evidence, what can we say about the general seriousness of the problem in the countries under review?

If the data are taken at face value, we would conclude that open unemployment is a serious problem in only some Asian countries under review, that we must reserve judgement on underemployment, and that while the problem is likely to deteriorate over time in most of the countries, we do not know how it is likely to manifest itself. But as we have seen, conceptual and measurement problems make it unreasonable to take the data at face value. It seems far more appropriate to interpret them on the basis of a number of broader considerations. First, it does not seem likely that any semblance of social order could be maintained in a country that persistently has one-fifth or more of its labor force openly unemployed; on this ground the very high rates of recorded unemployment should probably be discounted. On the other hand, other forms of unemployment, especially underemployment in the sense of low productivity jobs, are far more common than statistical studies - at least those that do not take an incomes approach - are likely ever to be able to capture. Furthermore, as indicated above, forms of unemployment other than open unemployment are probably relatively more important in the poorer of developing countries, where more individuals are forced to take on extremely low productivity jobs rather than remain unemployed for long. Given these considerations, plus personal observations, I am inclined to conclude - and I think most conference participats would agree - that even in countries such as India where open unemployment rates are very low, the overall problem is quite serious, but it is more one of inadequate rather than nonexistent jobs. 17/ Put this way the unemployment problem is seen to be the problem of poverty, a manifestation of the general development problem. This is a theme to which we shall return at the conclusion of this essay.

II. AGRICULTURE

The last few years have witnessed a significant shift in the literature on economic development. It used to be - particularly when considering the more densely populated countries like India, Pakistan and Ceylon where opportunities for extending the land under cultivation are extremely limited - that top priority, both in terms of output and employment, was given to industry. This was considered the dynamic sector whose growth rate was to be maximized and which would, through forward and backward linkages, pull other sectors along. The function of the agricultural sector was to provide sufficient marketable surplus so that an increasing proportion of the labor force could be effictively employed in non-agricultural sectors. Indeed, it was sometimes suggested that the success of a development policy could in part be measured by the speed with which the proportion of the labor force dependent on agriculture was lowered. Most of the policies following from this viewpoint - low food prices, emphasis on heavy industry, import substitution, and protection against foreign manufacturers - had the direct or indirect consequence of subsidizing industry at the expense of agriculture.

A number of factors have changed all this. One, which with hindsight is an obvious consequence of starving the agricultural sector, was the need to import increasing quantities of food, a need which to some extent offset the favourable balance of payments effects that the <u>industrial</u> import substitution policies were meant to generate. On the Indian subcontinent concern about this problem was brought to a head - indeed, reached crisis proportions - with the advent of the 1965-7 droughts and with the apparent stagnation in export earnings. A second factor has been an upward revision in estimates of the speed with which population and hence the labor force has been growing. Third, sufficient years have elapsed for us to see that the labor-absorbing capacity of the industrial sector is less than had been hoped, certainly less than needed.

Finally, of course, the advent of the new seeds and cultural practices have capped off this intellectual transformation. There appears to be common agreement, and it was reflected at the conference, that the high yielding varieties, if used properly, can dramatically increase output, pose no conflict between growth in output and growth of employment since they are compatible with a labor-intensive technology, and can be used with equal ease on small as well as on large farms. A number of intriguing policy implications, some of which are only beginning to be recognized, follow from these new technical possibilities. For one thing they raise the hope that a solution to the unemployment problem may be found in the countryside rather than in already overcrowded urban areas. For another, they are leading to a resurgence of interest in land reform, since fewer acres are now required for a viable holding. And further, they hold out the hope of self-sufficiency in basic foodgrains for many countries, and therefore of a truly viable import substitution policy, one which would lead from the strength of an indigenous technology suited to local factor proportions rather than from the weakness of an imported, capital-intensive technology that requires protected markets for survival.

But along with these hopes has grown the concern that these favorable possibilities may not in fact arise. While the high yielding varieties appear to be neutral with respect to scale, this neutrality assumes that scale can vary independently of other factors. But typically, larger farmers are more able to take risks, are better educated, and have greater access to assured water supplies, credit and other necessary inputs which must be used as a package to achieve the high yields. Further, while the HYV's are amenable to use with a labor intensive technology, what lies behind this fact is their need for more energy inputs, a need which in large part can be supplied by machines as well as by men and bullocks. For a variety of reasons - including the typically high profitability of most farm machines under current pricing practices, their prestige value, labor-management problems, and the desire to resume occupancy of land that might be subject to reform legislation - farmers can be expected to mechanize their operations as quickly as the opportunity and the

financial ability to do so are present. Thus, despite its potential, two nagging questions about the new technology have arisen: will it lead to more rather than less inequality in income and wealth; and if so will it, plus factor price distortions, encourage a form of mechanization that is labor displacing rather than labor absorbing? It was within the context of these concerns that the discussion of agriculture took place at our conference.18/

On the first question, there was general agreement that there is no necessary reason why the new technology should spread unevenly, provided institutional arrangements can be devised to ensure that the small farmer participates. But it was also agreed that we know very little about the speed with which the new technology is in fact trickling down or about the factors that influence this speed. While there was much speculation on possible policies, there was no consensus. Clearly, this is an area that requires more hard and imaginative work.

Given the presence of two empirical papers on mechanization, the conference was able to delve further into the second question. Professor Dawlaty's paper suggests that, with some qualifications, the introduction of tractors in Afghanistan on net has been favorable. First, the increased use of tractors (all of which were on very large farms) was associated over time with increases in irrigated area, output, marketable surplus and net farm income. Second, while the overall size of the labor force used on these farms was not greatly affected (though if anything it was slightly reduced), the principal effect on the labor force was on its composition. Many renter-tenants who are typically fairly independent decision-makers were turned into sharecroppers and full-time laborers, the landlord keeping more of the management functions (and possibly the returns to management) to himself. Despite this change in composition, the off-farm effects of the increased marketable surplus and farm income were undoubtedly favorable, so that an overall improvement in the employment situation was undoubtedly experienced.

These conclusions can only be taken as suggestions at this point, since many changes besides the introduction

of tractors and new seeds were occuring simultaneously. But they are certainly plausible in a country with a lower-than-average (for the region) man-land ratio and where new or relatively unutilized lands can still be brought into cultivation. And they also coincide with impressions of what has happened so far in the Indian Punjab. There, agricultural prosperity appears to have created a demand for non-agricultural labor which, combined with an increase in demand for agricultural labor (despite some mechanization) and a decline in the female labor force (also a consequence of agricultural prosperity) has led to a shortage of labor at harvest time and near-full employment for those wishing to work during the rest of the year.

However, nowhere in this region has mechanization become widespread. In Afghanistan we are talking about the effects of no more than 500 tractors imported over the years 1954 to 1966. In the Punjab, in 1968/69 perhaps 50 per cent of the wheat crop was mechanically threshed, reapers were not in use, and 20,000 tractors were available, relative to a total cropped area of over 10 million hectares. Far more important is what may happen in the future, which is the topic of the Billings-Singh paper.

This paper projects the supply of major non-human inputs to 1983/84 and estimates the effect of each on the need for human labor, month by month, for the Indian states of Punjab and Maharashtra. In so doing it forces us to focus on the fact that mechanization means more than tractorization, that each new input - the high yielding varieties themselves, pump-sets, wheat threshers, etc. - will have a different effect on labor requirements, that these effects may be very different in different regions of a country and at different months of the year, and that therefore a general policy in favor of or opposed to mechanization will hardly be appropriate.

For the Punjab, Billings and Singh project an overall reduction of 17 per cent in the need for labor by 1983/84, compared to what would otherwise have been needed if conventional methods continued to be used in that year. The greatest displacement would occur during the April-May harvest season (when labor demand will fall by 25 and 44 per cent in these two months). The extension of power

threshers and the introduction of reapers accounts for most of this displacement at harvest time, tractors and pump-sets being more even in their effects throughout the year. One half the total labor displaced is caused by tractors and pump-sets; over a third is caused by threshers and reapers. The labor displaced by reapers and threshers may result in the more serious social problem since it will involve mostly the landless. Tractors, on the other hand, will substitute for the labor of the owner and his family who traditionally are responsible for plowing in the Punjab.

In contrast, agricultural labor requirements for Maharashtra are expected to increase, the positive effects of the HYV's more than offsetting the negative effects of the introduction of mechanical power. Partly, this is a consequence of estimates that mechanical power will be introduced at a slower rate in this state than in the Punjab, but this is also related to effects due to different crops, and different growing conditions. On the other hand the agricultural labor force is expected to increase at a more rapid rate than the increase in the demand for labor so that, unless the surplus labor is absorbed in non-agricultural occupations, unemployment and under-employment can be expected to rise in both states.

The policy implications of these conclusions are consistent with those reached in a study of tractors in West Pakistan, which concludes that the social benefit-cost ratio for tractors is negative. 19/, 20/ But both studies are subject to a number of qualifications, some of which suggest that the problem may be less severe.

First, the effects of various innovations are assumed to be additive; the interactions which make the sum of the parts greater than the whole are not fully taken into account. In particular by increasing the speed of agricultural operations, tractors (as well as other forms of mechanization) make it possible to take better advantage of the shorter growing season required by the HYV's thereby permitting an increase in the extent of multiple cropping.

The Billings-Singh paper does assume a certain rate of increase in cropping intensity over time, but this rate

appears to have been estimated on the basis of historic trends, rather than being related explicitly to the rate of mechanization, a rate which is likely to invalidate this trend projection. Given a certain rate of increase in cropping intensity, and ignoring indirect effects, the addition of tractors will be labor displacing, as they indicate. But it may not be if multiple cropping is induced by the mechanization to increase appreciably. The Bose and Clark paper also assumes no increase in acreage as a consequence of the introduction of tractors, though their reason is different. In their case it is because they assume there are other ways to achieve an increase in multiple cropping; they therefore do not take this to be an additional advantage of using tractors and ignore it.

The question of whether there are other economical ways to increase cropping intensity is an intriguing one. On the face of it there would seem to be no agricultural processes that could not be speeded up - albeit at rising costs - by using more labor and bullocks. The problems in applying this solution have been that labor-management problems on large farms (where the HYV's have so far principally been used) can become severe; also in the Punjab, at least, shortages of labor and bullocks are present during some seasons. These problems could be overcome through land reform and the encouragement of migration into the Punjab, but significant moves in these directions would run into serious political problems. Obviously, more investigation of alternative means of increasing cropping intensity and possible barriers to each is called for.

Another interaction which could be important is shifts in crops as a consequence of mechanization. Again, some shifts were allowed for by Billings and Singhs, but in the main they were based mainly on historic trends which may be invalidated by the mechanization. Thus if mechanization does in fact allow for an increase in multiple cropping, some land devoted to foodgrains could be freed for more labor-intensive crops.

Third, according to another article by Billings and Singh,22/ about half the energy input of draft animals will be displaced by these same technological changes.

This will release a certain amount of acreage under fodder,23/ which could be used for more labor-intensive crops.

Fourth, the indirect effects of labor demand and supply have been ignored. The increase in farm income in general (and mechanization in particular) will lead to an increase in the demand for labor on two fronts, first, to produce, repair, transport and service an expanded range and quality of inputs into and outputs from agriculture, and second, to supply a wide variety of consumer goods and services. Within the local area, some displacement of craftsmen may take place as demand shifts from traditional commodities to factory-made substitutes; this could be serious during a transition period that may last some time. But offsetting this will be an increase in demand for higher quality foods - fruits, vegetables and dairy products - all of which require more labor per acre to produce than do foodgrains. In addition, the increased income may actually reduce the labor force participation rate for women, thereby further easing the problem.

Fifth, the increased supplies of foodgrains, if rapid enough in relation to the growth in demand for foodgrains, will ultimately induce a fall in their price, relative to other commodities, making it possible to employ more labor generally throughout the economy without as serious inflationary effects.24/

On the other hand, the increased use of capital for mechanized agriculture will mean less capital available for other employment-generating activities. If the same increase in cropping intensity could be obtained using more labor-intensive techniques, it may well be better to use the capital elsewhere. But labor-intensive methods are not always the most economical methods; and in any event, as we have seen, substantial institutional and political changes may be required to bring about comparable results. Furthermore, since the incremental capital-labor ratio in agriculture is still low relative to that of most other sectors, and since the availability of new techniques and machines for agricultural mechanization is out of the question at this juncture. The effects appear to be highly specific to the form of mechanization applied, to cropping patterns and to geographic regions. Moreover,

even if the ultimate net effect is positive, transition problem may be terribly serious. Keeping in mind all the issues raised - including the strong possibility that changes in land tenure arrangements and attitudes toward migration would significantly alter the balance in favor of more labor-intensive farming techniques - we must conclude that the situation is extremely complex, perhaps so complex that we shall never know what the overall employment effects of the new technology and mechanization are until after they have occured.

In this circumstance, perhaps the policy to pursue is to correct factor price distortions and let the chips fall where they may, that is, to provide market signals reflecting true scarcities and let individual decision-makers choose whatever forms and amounts of mechanization they find to be in their best interests. Of course it would still be appropriate for the government to help offset transition problems. But given the fact that we do not and perhaps cannot know, in a timely fashion, enough to suggest more specific policies, this approach has much to recommend it.

III. INDUSTRY AND FACTOR PRICE DISTORTIONS

The argument that agriculture cannot productively absorb the expected increases in the labor force given projected increases in various types of inputs is closely paralleled by arguments related to the industrial sector. Certainly, this is the impression one gets from the papers by Sethuraman, Demirgil and Celasun (the latter discussed above in the section on Background and Projections). Even at fairly rapid rates of growth in output, productivity increases are such that the projected demand for labor will not be sufficient to absorb the increases in the non-agricultural labor force. Similarly, many of the qualifications to this conclusion raised with respect to agriculture are relevant. Especially important, once again, may be the indirect effects: even if growth of a capital-intensive sector generates few additional jobs directly, it may set up the conditions whereby many individuals can find productive employment in other sectors.25/ There are, for example, some indications that the small-scale, or so-called "unorganized", industrial-sectors,

which generally are more labor intensive, are expanding more rapidly than the large-scale industrial sectors in many countries within the region.

While there are many causes for such low absorption rates in industry and agriculture, some of which are buried in the institutional and political setting of the countries with which we are dealing, one factor in particular came in for intensive discussion. This is the role of factor price distortions, the possibility that wage rates, particularly in industry, are too high and interest and foreign exchange rates (and therefore the price of capital) too low, relative to the actual availability of these factors, with the consequence that excessively capital-intensive techniques and sectors are favored over others that would employ more labor. The papers by Ranis, Dimirgil and Ortgüt spell this argument out in full, along with some necessary qualifications. The latter two papers, plus that by Sethuraman, offer some empirical evidence in its support, though this evidence is by no means conclusive, and Ranis discussed a number of cases in which changes in factor prices - notably in Korea and Taiwan, to a lesser extent in West Pakistan and Indonesia, and in historical Japan - improved both the employment <u>and</u> the growth picture.

In principle, the argument is difficult to fault. Something is clearly wrong with the growth process of the countries in this region, and factor price distortions could easily explain the problem. The general underutilization of labor, the existance of major industries that seem permanently to require subsidies or artificially maintained prices to stay alive, difficulties in promoting exports without substantial subsidies, structural imbalances resulting in excess demands in some sectors and excess supplies in others that remain longer than one would anticipate in a dynamic setting, and lower overall growth rates than appear feasible and desirable are all clear signals of problems. These are just the kind of consequences one would expect to find if factor and product prices are held away from their equilibrium levels for very long, in particular if wages are generally too high and if interest and foreign exchange rates are too low.

But the explanation for these problems is more comple While it would take us too far afield to enter into a full scale analysis of all the factors involved, it is worthwhile raising a number of issues that must be faced when contemplating a change in factor prices.

First, more is typically involved than merely substituting one set of administered prices for another. A review of the reasons why distortions in factor prices have arisen in the first place will help explain this statement.

Perhaps the primary reasons for these distortions is the package of policies associated with import substitution, which especially during the 50's and 60's meant promoting the development of "modern", generally heavy, industry. The desire for economic as well as political independence from the developed countries, the belief that savings, investment and therefore growth would be greater by emphasizing investment goods industries, the emphasis placed by aid donors on project assistance, plus aid-tying conditions, all played their role in promoting a system of incentives that favored capital-intensive sectors and techniques.

Closely associated is an ingrained distrust of the market mechanism as a means of accomplishing the import substitution goals. Markets were considered to be so highly imperfect and income distribution so very unequal that few believed that this mechanism would generate the high rate of investment in non-consumption sectors or the degree of efficiency and equity that was desired. As alternatives, direct public investment and the substitution of administrative allocation systems for prices as rationing devices were favored for key markets. Excess demand, generated by prices being below market-clearing levels, is necessary for such non-market rationing devices to work effectively.

In addition, several institutional factors operating principally on the labor and credit markets also play a

role in creating and maintaining factor price distortions. Union pressures, minimum wage legislation, and governmental concerns about urban unrest have all acted to maintain an upward pressure on urban wages. So far as credit markets are concerned, attitudes that borrowing is a necessary evil, that the interest rate is, or should be, primarily a transaction fee rather than a rationing device, and that low interest rates will stimulate investment more than they will inhibit savings are all current and influential. In addition major credit institutions tend to favor large, well-established businesses even when they can get higher rates of interest (over and above risk premiums) from other borrowers.

It is difficult to imagine a successful attack on factor price distortions that does not deal with these underlying causes as well. The case is clearest so far as wages are concerned. It is virtually out of the question to initiate a policy that would directly lower real wages for unskilled urban workers; the only way to approach this problem is by indirection, attempting to keep money wages from rising as fast as other prices and attempting to bring down, or hold down, the rise in the cost of wage-goods so that money wages relative to other factor prices do not increase.26/ With interest and foreign exchange rates the possibilities for direct action are greater and should certainly be seized upon. At a minimum, closing the gap between official and market-clearing prices will eliminate some of the windfalls received by preferred firms and force them to economize more on scarce resources. But no fundamental change is likely so long as the institutional and intellectual framework discussed above, plus the administrative allocation systems and public investment decisions that implement this framework, dominate over prices and market forces in determining how things get done. This is the major problem.

Second, the extent of factor price distortions may not be as great as is commonly assumed. Typically, such distortions are judged by looking at official or posted prices primarily in urban areas and comparing them with either world prices or market-clearing (in some cases,

black market) prices domestically. Thus, for example, there is a presumption that industrial and governmental labor is overpriced in view of the substantial wage differential between unskilled agricultural and industrial jobs, that foreign exchange is underpriced in view of the presence of black markets for its exchange, and that credit is similarly underpriced given the discrepency between official interest rates and those charged by unofficial sources.

But such evidence must be used with caution. Some wage differentials are justified because of the higher costs of living in urban areas. Many of those high-paid industrial jobs may in fact be shared between two or more people, each working only a part of the day or month or year. Furthermore, just because of the relatively rapid turnover implied in the previous point, many firms are willing to pay a premium to ensure themselves of a more steady work force. Similarly, at least a portion of the differential in interest rates between official and unofficial sources represents a risk premium.

So far as foreign exchange is concerned, the operation of the import licensing system imposes many time costs on management that raise the effective cost of foreign exchange. These costs - red tape, lobbying, project delays, the need for larger inventories, etc. - have a tendency to make investors choose processes that minimize the need for imports, just as would an increase in the price of foreign exchange. Indeed, it could be that for certain sectors and firms, the cost of foreign exchange is too high rather than too low. This is hardly an efficient way of moving the costs of imports towards equilibrium, but it does work.27/

So far as capital equipment is concerned, we must distinguish between domestically produced and foreign sources. In larger developing countries, it is becoming common to find more and more capital equipment produced domestically, generally behind substantial protective walls. Such capital is seldom underpriced by any standard.28/, 29/ So far as foreign-made equipment is concerned, the more general points made below applies.

This more general and important point applies wherever there is a discrepancy between official and market-clearing prices. Typically, official prices rule in only a portion of the market to which they apply. More specifically, individuals at the head of queues for foreign exchange and credit receive these commodities at subsidized prices. But given the rigid quotas on imports and central bank credit, everyone else in line pays a market-clearing price. The privileged recipient realizes an unwarranted windfall gain which may, if he is the final user, affect his economic decisions; but so long as he has the opportunity of selling what he has received at subsidized prices he should still be making his decisions on the basis of this opportunity cost. In a few cases price controls are imposed which effectively regulate the terms of such resale, but more typically attempts at such regulation are not made, or where made are ineffective.

Thus, in India a private investment banker can discount his paper with a commercial bank for 9 per cent and lend the proceeds at anywhere between 15 and 20 per cent. Similarly, the market-clearing price for tractors, which rules in the case of all but the first transaction, reflects the actual scarcity of tractors in the country, not the far lower, obviously subsidized, landed price.

Many qualifications to these arguments should be raised. Opportunities for resale are not universal. The supply of rationed commodities is not completely independent of the windfall to be made; the larger the potential windfall, the more efforts to produce, smuggle and lobby for increased quotas there will be. It may also be that those receiving the windfall are prone, just because of the high profit rates involved, to act in less economizing ways. And public decision makers and planners - when they take prices into account at all - are prone to use official rather than market-clearing prices in making project proposals and evaluations. But these are qualifications to the main theme, that market-clearing prices rather than official prices are likely to dominate in a significant number of cases in less-developed countries, and

that these prices do reflect actual scarcities within the country. Just how significant this point is, however, is an empirical question for which there is currently no answer.

Finally, some discussion about the likely impact of eliminating factor price distortions is in order. There can be no doubt that the elimination of whatever distortions there are would have a favorable impact on long run efficiency, growth, and therefore on employment prospects. But questions can be raised about the shorter run employment effects, as well as the extent of the longer run effects.

First, the situation is complicated by the fact that import and investment licensing systems distribute the money and time costs of acquiring foreign exchange and credit in a very uneven manner. Privileged firms are able to use the system to acquire capital for themselves, thereby precluding its use by others. The net effect is likely to be a situation in which there is more than optimal capital-intensity in some firms and more than optimal labor-intensity in others. A correction of this situation would improve efficiency but may not do much to improve the near-term employment situation.

Similarly, the elimination of windfall gains for favored firms will force them to become economical in their use of inputs, including labor. Their resistance to pressures from government, unions and civic groups to hire more labor than actually required will be stiffened, so that the immediate impact - before there is time to substitute a capital-saving for a capital-using technology - could be a reduction of employment in these firms. Of course, the net, long-term result, which depends on the availability of alternative technologies and the alternative uses to which these windfalls are put, could be very favorable.

Third, there may not be that much room to move towards more labor-intensive technologies and sectors. This argument takes a variety of forms. Many sectors,

such as construction, government service and ancillary industrial processes (such as materials handling) may already be highly labor-intensive, perhaps even excessively so.30/ For some industrial processes there may be no equally economical labor-intensive method, even after correcting factor price distortions.31/ In some cases the argument is made that adequate quality control for the export market may not be obtainable without sophisticated capital equipment. In other cases, such equipment is needed to conserve on scarce skilled labor and managerial talents. And so far as intermediate technologies are concerned, even if appropriate, one must assume that lack of spare parts and technical know-how for technologies that may be obsolete elsewhere do not preclude their use.32/

But the overriding problem is that so little energy has gone into the search for capital-saving technologies, old or new, that would be efficient given appropriate prices. Factor distortions in less-developed countries undoubtedly play a role in inhibiting this search. But they cannot be as important as the fact that 98 per cent of the world's research and development expenditures take place outside these countries,33/ and that a very high proportion of the technical manpower available to less-developed countries received their training from the institutions and textbooks of developed countries where factor proportions and the competition of consumer demands are enormously different. Other means, in addition to correcting factor price distortions, must be found to correct these biases.

In concluding this section, it must be emphasized that none of the points raised constitute an argument in favor of maintaining factor price distortions. Their elimination would clearly have beneficial long run effects on efficiency, and therefore on growth and employment. But if we are talking about eliminating such distortions without eliminating administrative allocation systems or improving the workings of the free market, the employment effects are likely to be small; and if appropriate

institutional changes are included in a reform package, the effects, while significantly larger, will be slow in coming.

Fortunately, there are other, more direct ways to improve the employment (and income) situation of the poor, including reallocation of public investment programs, speeding up of the process of growth itself through utilization of larger quantities of domestic and foreign savings, efforts to improve the operation of the labor market and the education system to better match demands and supplies, public works programs, and so on, many of which will operate in a shorter time frame. These means must be explored as well if the hardships being experienced by this generation of unemployed are to be alleviated.

But perhaps we have overstated the case. What we mean to say is that a new package of policies comparable in significance to the import substitution package of the '50s and '60s must be developed to cope with the employment problem. This package will include, but not be limited to, a correction in factor price distortions. Some clues as to what in addition is necessary are discussed in the concluding section. But before that, a brief discussion of the remaining papers on the construction industry and on migration is in order.

IV. CONSTRUCTION AND MIGRATION

Papers on two additional topics - construction and migration were presented and discussed at the conference.34/ While the papers on each topic pertain to only one country, some interesting points of comparison were raised in the discussion and deserve mention.

Construction:

In discussing employment problems, the construction industry is of particular interest. We need have fewer concerns here about a conflict between the goals of growth of output and employment than in any other sector. In construction it is clear that viable labor-intensive techniques exist, as well as a wide range of capital-intensive

alternatives; the sector is not heavily dependent on foreign exchange; and typically the level of activity in this sector is positively associated with the overall rate of growth. In addition it is an important sector, generally accounting for around two-thirds of total investment. It is no wonder, therefore, that it is often looked to as a sector that should be emphasized when unemployment becomes a problem.

Narasimham and Bhatia provided the conference with an analytical description of this sector in India, Narasimham concerning himself with interestate differences for the sector as a whole, and Bhatia looking more deeply into the subsector involving road construction and maintenance. While preliminary in the sense that they had to utilize proxy variables, rules of thumb and engineering norms, these papers do conclude with some definite ideas about the labor-intensity and the direct employment potential per unit of expenditure for this sector. Thus, for example, Bhatia found that 4.6 man years of employment are created for every 10,000 rupees spent on roads. In contrast, bridge building appeared to be far less labor-intensive, 30 per cent rather than 70 per cent of total expenditures involving outlays on labor. The conclusion that road construction is one of the most labor - absorbing activities in India is difficult to dispute. Narasimham, however, using the interesting device of comparing hourly and piece rates to estimate labor productivity, found large differences between construction sectors and between regions and states within India, differences that were not perfectly correlated with differences in population density.

While no comparable data was presented for other countries, the discussants generally felt that this data indicated that construction in India was more labor-intensive than in most other LDC's perhaps with the exception of China. Certainly, this was felt to be true in comparison with Turkey, Africa and Latin America.

Why, if factor prices are so distorted, is construction as labor-intensively organized as it appears to be in India? And why is there such a big difference

within India between states and between subsectors (e.g. between road and bridge buildings)? It may be, as was suggested by several persons, that institutional arrangements explain most of these anomalies. Road construction in India is undertaken by extremely small contractors, each responsible for only one or two miles of roads; for each of them expensive road-construction equipment is out of the question. The government sanctions this arrangement, viewing road construction as a means of absorbing surplus labor, that is, as a local relief operation. In contrast, bridges are built by large contractors who can afford more capital-intensive techniques available for bridge building. In other words, in this sector at least, institutions and technology were presumed to be more important than prices per se in determining the type of technology used. But it may also be that whatever factor price distortions are present, they are not enough in India to make capital-intensive construction methods cheaper than labor-intensive methods. At least, nothing in the data presented to us refutes this hypothesis.

Migration:

While no papers on internal migration were presented, the subject was not far from everyone's mind, particularly after the presentations of Frank and Hofmeister, which described the serious problems being generated by rural-urban migration in Africa and Latin America. To a large extent such migration has the effect of changing the form in which the unemployment problem appears, from disguised unemployment in rural area, to open employment in urban, the latter posing more of a social threat than the former. The possibility that similar developments would arise in Asian cities in the future was seen as a serious problem.

In contrast, external migration was viewed with more equanimity. Alpat discussed the interesting case of Turkish migration to Europe which, while viewed with concern because it is a reflection of inadequate oppor-

tunities at home, was seen to have many positive features connected with it. At one and the same time it serves as a safety valve to release the pressure of unemployment at home, and, through remittances, as a source of savings for investment at home. On the other hand, the migration of skilled labor, the expenditures on luxury goods abroad and the problems associated with more rapid cultural changes than would otherwise occur, are seen as causes for concern.

It is of interest to note that in both Turkey and Puerto Rico (see Professor Reynold's paper) recorded unemployment remained high despite the employment opportunities abroad. This raises the possibility that there may be an aspect of voluntariness to unemployment in these two cases. Especially in the Puerto Rican case, at least during periods of prosperity in the United States, migration to the United States has been an easy alternative to unemployment. The explanation is likely to be found in the fact that remittances from family members abroad are available to the unemployed. If so, it adds weight to the possibility raised in the first section of this paper, that open unemployment may be something of a luxury that only those in special circumstances can afford, and that if true it does not represent the kind of hardship normally associated with it in more advanced countries.

V. CONCLUSIONS

The above discussion has ranged over a variety of diverse topics and countries, so many that a simple summary is out of the question. Even so, we have hardly touched on a number of other important issues. Little has been said about the education system, despite the fact that it determined the supplies of skills, can influence attitudes towards work and manual labor, is an important determinant of fertility, plays a role in influencing rural-urban migration, and, of course, is an important direct source of employment for a large portion of new labor force entrants. Nothing has been said about the services sector in general, despite its obvious importance. Nothing has been said about the role of labor legislation which can play a significant role in determining the cost and hence the demand for certain types of labor, the efficiency

with which the labor market operates and the access that some groups of labor have to preferred jobs. Nor has much been said about fiscal and monetary policy, anti-trust legislation, regional planning or the trade and aid policies of developed countries, though all have significant roles to play. There are, in fact, few matters of general development policy that do not have an important employment dimension.

No apology is necessary for this selective coverage of issues: the subject is far too vast to go into detail on all relevant topics for all seven countries discussed in this volume. But we do not wish to conclude without raising several broader issues that are close to being imperatives for the construction of any effective attack on the employment problem, whether or not these issues were fully discussed above.35/, 36/

(1) First, and most obviously, factor price distortions should be corrected, and if possible these corrections should be linked with measures to improve the operation of the relevant markets. This should be done not just for the sake of employment generation, which may not in the short run be greatly affected by these moves, but also for the sake of long run efficiency and growth which, after all is said and done, must still be accorded top priority as a national goal in less developed countries.

From the discussion of Section III it is clear that this recommendation applies primarily to those factors causing capital and imported commodities to be undervalued. We are not recommending a decline in real wages of unskilled urban workers. This latter problem must be handled differently, as indicated by the next two points.

(2) Investments must be reallocated to favor sectors producing wage-goods and the necessary inputs into these sectors. By wage-goods, we mean commodities such as food and clothing that are purchased in abundance by poorer classes, not consumer goods in general.

As indicated above, the policy package of the 50's and 60's was in part based on the view that savings, investment and hence long run growth would be maximized by emphasizing investment as opposed to consumption goods industries. While this may have been the correct approach given the position in which most countries in the region found themselves at the time - and while it may still be true so far as consumer goods other than basic necessities are concerned - it is possible to carry this approach too far, so far that the scarcity of wage-goods interferes with the ability of the economy to absorb labor effectively, and even perhaps with the ability to continue growing at satisfactory rates. Such unbalanced growth may prove to be an important cause of the underutilization of labor - indeed, of the underutilization of capital in some sectors as well. Certainly, this hypothesis deserves careful empirical investigation.

In any event, there can be little doubt that the supply of wage-goods is an important determinant of the level of employment. Suppose this supply were fixed and that the government initiated a sizeable public works program. Inflation would be inevitable and would ultimately defeat the program. Under the same assumption consider what would happen if a correction in factor price distortions did in fact lead to a significant increase in employment. The rising cost of wage-goods would set in motion pressures for increases in wages relative to other input costs, again eventually defeating the correction.

Finally, suppose the supply of wage-goods could be made to grow at a faster rate than is currently taking place. By permitting a more rapid expansion in the money supply without inflation, the increased supplies of wage-goods would encourage the government to expand its development plans. This is likely to be the principal route through which employment will increase as a consequence. But even if the government did not expand its budget, some improvements in the employment situation will result. In part of course, this improvement would occur as a consequence of the additional incomes generated in the wage-goods sectors; but since a similar improvement would be forthcoming from inducing higher rates of growth in any sector

(ignoring changes in income distribution and differences in the labor-intensities of production in different sectors, to be discussed below) let us leave this effect aside for the moment. The remainder of the improvement would occur because, with a more rapid increase in their supply, the relative prices of wage-goods (but not necessarily their absolute levels) would fall, increasing real wages at least temporarily. With real wages higher, some individuals will offer to work for money wages that are somewhat lower than the going rate. The net result will be some increase in both employment and the standard of living of the poor.

In effect, therefore, a reallocation of investment that increases the output of wage-goods would serve to help correct some of the factor price distortions; but instead of manipulating prices or freeing up markets to do so, it would be accomplished by shifting the supply curves in relevant markets, a more significant and fundamental way to accomplish the desired change, at least insofar as labor is concerned.

Since the most important wage-goods are produced in the agricultural sector, we are in large measure talking about the need to place greater emphasis on this sector. To the extent that this has already occurred, the prospects for productively absorbing labor are improved in any event. But despite the Green Revolution and the new policy emphasis given to agriculture, it is doubtful if, from the point of view of maximizing employment opportunities, this reorientation has yet gone far enough in most countries in the region. All the comments made in the section on agriculture, especially those concerning the need to involve small farmers and avoid the development of a capital-intensive agriculture, are important to remember in this connection.

Another benefit of emphasizing agriculture is that it will slow down migration to the cities, thereby easing the social problems associated with urban unemployment.37/ But to significantly alter this urban drift other policies are likely to be required as well, including a significant

improvement in social infrastructure such as rural educational and health facilities that migrants seek by moving to the city.

(3) More emphasis must be placed on equity in the distribution of income, wealth and economic opportunities.

In a Western society, where income transfers between the employed and the unemployed are assumed to be the exception rather than the rule, the provision of jobs is generally considered to be a powerful way to eliminate the worst kind of inequities in income distribution. But if our principal concern is with the welfare of those at the very low end of the economic scale in less-developed countries, the emphasis on equality as a policy variable must become stronger. As we have seen, in very poor countries, most persons in this group are either incapable of working (and therefore are classified as outside the labor force) or are doing <u>something</u>, no matter how little it returns. Often those who are fully unemployed and seeking work are better-off than the above two groups since they have family support that permits them to avoid taking extremely low productivity jobs. To help this low-end poverty group requires more than the provision of jobs. The indigent must be rehabilitated, if possible, so they become <u>capable</u> of undertaking productive work and those who are working need more productive work. In other words, to help this group requires a redistribution of income - more important, a redistribution of the means to acquire income - that is more pervasive than is involved in the provision of jobs <u>per se</u>.

But redistribution policies may in the long run be even more important, for beyond a certain point inequalities in the distribution of income are likely to reduce the economy's ability to absorb labor effectively. One important way to provide more jobs is to increase the demand for labor-intensive commodities at the expense of commodities embodying large amounts of capital and imports. One way to do this is to put more purchasing power in the hands of those who want such goods. Given what is known about the labor-intensity of the market baskets typically purchased by the rich and the poor in less-developed countries,

the appropriate policy would require a redistribution of income downward.38/ In other words, combining this recommendation with the previous one, not only must we increase the supplies of wage-goods (relative to other consumer goods and to certain types of investment goods) we must also put purchasing power in the hands of those who would acquire these wage-goods.

One difficulty with these two recommendations could stem from the arguments that link capital-intensity of production and income inequalities with high savings and investment rates, and therefore, presumably, higher growth and employment rates in the future. To what extent would these recommendations result in more employment now, but due to lower investment levels, less complementary resources with which to employ labor in the future?

At the outset it should be reiterated that the argument being made here is for the restoration of a balance between sectors, not a complete reversal of policy But more to the point, the amount saved by a household depends on more than its income and market interest rates: it also depends heavily on opportunities for profitable investment. If through increases in the demand for their products it is demonstrated to small farmers, craftsmen, and manufacturers that such opportunities are available to them, no drop in the aggregate savings rate may occur. In any event, with appropriate government fiscal policies to force more savings it need not occur. But suppose the marginal savings rate were to be adversely affected by the redistribution of incomes. If in the process underutilized labor and capital can be put to effective use, what is lost in a lower savings rate may be made up in a lower capital-output ratio. The net effect could well be higher rather than lower growth rates. An additional benefit which should not be overlooked is a greater commitment by the masses to the development of the country. Whether those beneficial effects are sufficiently strong to offset the costs cannot be determined without empirical studies, but they do suggest possibilities that should not be ignored without additional study.39/

(4) The bias inherent in technical research and development must be reversed. While improvements can be made by changing the composition of production, shifts towards more labor-intensive technologies within sectors is also called for, A necessary, though not sufficient, condition for this shift to occur is a correction in factor price distortions and other biases in favor of using capital-intensive methods. At a minimum, such a correction should induce greater use of labor-intensive techniques that are known to exist. But as discussed above, factor proportions and consumer demands in developed countries, plus biases inherent in the training of technicians for developing countries, determine the direction of practically all the world's research and development efforts.

Perhaps the only way to overcome these handicaps is for a far greater portion of the world's research and development to be conducted within the less-developed countries. So far as tropical agriculture is concerned, the point is obvious, but in a more subtle way it is also true for the industrial sector where the environment - the soil - in which this sector grows is also vastly different from that of most advanced countries. Such a policy could be expensive, though the developed countries can help with finances, personnel and possibly also new institutions. But just because it has been a neglected area of research the payoffs could be high. The recent history of the development of high-yielding varieties should make us optimistic on this score. This same history also suggests that such developments are unlikely to occur spontaneously.40/

(5) A comprehensive planning package that includes the generation of better employment opportunities is required. It may not be much of an exaggeration to assert that the employment-cum-income problem will never be solved so long as responsibility for its solution is delegated to a special office or division in the government policy hierarchy, as has so often been done in the past. The only way to effectively attack the problem is to raise employment as a policy goal to the same status as the goal of growth itself, inducing all policy-makers to take it into account in their deliberations.

With the material at hand, it is impossible to specify the exact nature of an appropriate policy package. But it is worth noting just how pervasive and comprehensive it must be. First, the overall size of the public budget must be reviewed to ensure that maximum expansionary pressure subject to inflationary and other constraints is being placed on the economy. There is no sense plodding along with underutilized capital as well as excess labor. A moderate amount of inflation may be a small price to pay for the higher levels of employment and output that would be achieved. In some cases foreign exchange may be the principal bottleneck of such a policy, in which case problems of trade and aid come to the force. Second, investment expenditures must be reallocated: more for agriculture and other wage-good sectors, including their required inputs (except to the extent these are more cheaply acquired from abroad), more for research and development aimed at taking advantage of existing factor endowments, and less for all other sectors. To induce such changes the private sector needs some changes in signals: interest rates, foreign exchange rates, tax regulations and investment and import control systems must be scrutinized with care for possible biases against employment and altered accordingly. In part such changes will require adjustments in rules and regulations, but often they will involve the complex process of freeing up markets so they can play a more constructive role. Some increases in taxation to limit demand for the output of sectors to be de-emphasized and to support an expanded public investment budget may be required. To promote agricultural development, or to complement the growth that has so far been induced by the HYV's, and to avoid inordinate rural-urban migration, much of the expanded public investment budget must be allocated to the provision of infrastructure in rural areas: better irrigation facilities, especially for smaller farmers, more roads, storage, credit and marketing facilities, better health and education facilities, and so on. Such a program would necessitate an expanded rural works program which will have to be dovetailed with the perferences and seasonal availabilities of labor, and which has to be far more productive than the semi-relief programs of the past. A number of complementary institutional changes may also

be necessary, including in some places land reform and monopoly regulation. Finally, an intensive political effort, to promote and gain acceptance of this program will have to be implemented.

If we are right about the need to emphasize wage-goods, to redistribute income downward, to reorient technical research and development, and to alter the investment and import control regimes to reflect these imperatives, many vested interests will be disturbed. But given a continuous increase in the size of the labor force, it will have to be done sooner or later.

It should not be surprising that all aspects of development planning must become involved if higher priority is given to employment as a goal. It is artificial to separate unemployment as a problem from the general problem of economic development. The essence of the development problem is to make more productive use of available resources, many of which are currently under-utilized. Since labor is the most abundant factor in less-developed countries, if we cannot find a means of utilizing it productively, we may never find an answer to the problem of development generally.

The last point explains why we have said little about the supposed conflict between the goal of employment and growth. Underutilized labor is a lost opportunity, a symptom that the economy is not growing as fast as it could. If we are correct that agriculture and other wage-goods sectors have been neglected, that income distribution may be so unequal as to be inhibiting the growth process, that in some places capital-intensive sectors and methods have been overemphasized, and if precious foreign exchange is still being squandered on infant industries that can never grow up, then the correction of these distortions will increase employment and output simultaneously.

FOOTNOTES

1/ I am grateful to S. Selvaratnam, P.M. Visaria, Ahmed Kooros, and S.R. Bose who, on brief notice, served as rapporteurs for the various conference sessions. The transcripts of their oral reports were very helpful in preparing this essay. Thanks should also go to many colleagues at A.I.D., and now at Resources for the Future, for their useful comments. None of these persons, nor the organizations involved, necessarily agree with the views expressed.

2/ The countries covered in this review are Afghanistan, Ceylon, India, Iran, Nepal, Pakistan, and Turkey.

3/ Unless otherwise indicated, the sources of the data used in this essay are the relevant country papers included in this volume.

4/ In addition to the papers in this volume, see also David Turnham, The Employment Problem in Less Developed Countries (O.E.C.D., June 1970), p.201 and appropriate tables in the text.

5/ Indian data are from National Sample Survey Reports for the 17th and 21st rounds, reported by P. Visaria in "Unemployment in India in Perspective", Economic and Political Weekly, Vol. V, Nos. 29-31, Special Number, July 1970, Table 1.

6/ Turnham, op. cit.

7/ Part of the explanation for the high rates in East Pakistan may be its extremely high population density, unique among less-developed areas. But a careful scrutiny of data-gathering methods and definitions used there would be in order.

8/ One factor which needs study in such an investigation is the duration of unemployment, about which virtually

nothing is known. If it were found to vary significantly between countries, an entirely different picture from the one presented above could emerge.

9/ For example, a 1968 Ceylonese survey found that 39 per cent of the urban unemployed are between the years of 15 and 24.

10/ A third explanation, having to do with the relative scarcity of highly trained individuals, is needed to account for the lower rates of unemployment among those with higher degrees.

11/ Why it appears to have fallen in India, one of the few countries for which consistent, time-series data are available on urban unemployment, is a mystery worth investigating.

12/ However, there are significant differences between age-specific rates among various developed countries as well as among developing countries. See Chapter VIII by J.N. Ypsilantis, in United Nations, Sectoral Aspects of Projections for the World Economy, Vol. III Discussion Papers (New York: United Nations, 1969).

13/ On the other hand it could be misleading to assume that an improvement in nutrition levels would result in more employment, at least in the short run. If nutrition improved so that one person was capable of doing the work of two, it would pay the employer to fire one even if he has to pay the other somewhat more.

14/ Conclusions and data derived from the paper by Hashmi and Hussain, Table III.

15/ Of course, they are also highly sensitive to changes in foreign demand for Turkish labor which could, by itself, eliminate the unemployment problem altogether. A weakness of this model, however, which the author recognizes, is that there is no breakdown of labor by skills. Migration of skilled

workers abroad could result in shortages of skilled labor at home,,less output and therefore higher unemployment (or underemployment) rates.

16/ For example, P.J. Richards' paper on Ceylon indicates that while unemployment appears to have increased substantially between 1953 and 1963, income distribution appears not to have become more unequal over this same time period.

17/ This is not to imply that the "true" rates of labor utilization are likely to be the same in countries at similar stages of development, but merely that the differences are likely to be less dramatic than they appear on the surface.

18/ On many of the matters discussed above, see the papers by S.R. Bose and M. Asiel.

19/ S.R. Bose and E.H. Clark, II, "Some Basic Considerations on Agricultural Mechanization in West Pakistan," Pakistan Development Review, Autumn, 1969, pp. 273-308.

20/ However, a recent study by Roger Lawrence investigates three specific situations in Pakistan and finds that in two of the three cases similar conclusions do not follow. This unpublished paper, "Some Economic Aspects of Farm Mechanization in Pakistan," dated August, 1970, was received too late to be incorporated into the body of this review, but his conclusions are useful to summarize, for they demonstrate the variety of effects one is likely to find in studying different situations. (1) For a wheat-cotton sequence of cultivations on irrigated land in West Pakistan, as various types of mechanization are added in sequence, the opportunity cost as well as the market cost per unit value of output falls continuously, and with the exception of the addition of the stationary thresher and the pull combine, the average annual man-days required per acre increases. The introduction of the thresher and the combine, while continuing to lower opportunity costs, reduce the

need for labor by about 14 per cent, compared to traditional methods. These results arise principally because of increased output due to greater speed of operations. (2) For wheat on rainfed soils, mechanization is even more favourable. Largely, this is because the deeper plowing allowed by tractors makes it possible to conserve on moisture, thereby increasing yields three to four times, depending on the adequacy of the rain. (3) By contrast, on rice land in East Pakistan, while market signals make it profitable to introduce the power tiller and tractor, opportunity cost estimates argue against it. This result arises because mechanization cannot be used to speed up operations and substitute for other forms of irrigation to the same extent in this area, as well as to the fact that the opportunity cost of labor was valued at zero for some activities and that for bullocks at half their market value.

22/ "Farm Mechanization and the Green Revolution, the Punjab Case", (Mimeo, USAID Mission to India, April 22, 1970) p. iii.

23/ The Bose and Clark paper estimates that roughly one cropped acre would be released per working bullock.

24/ See the discussion of wage-goods in Section V on this point.

25/ The overall effect may not be as favorable, however, since fewer wage goods are produced in the industrial sector.

26/ One suggestion that can be mentioned is a tax deduction of a wage write-off for investments made in more labor-intensive methods. Other suggestions are made in the concluding section.

27/ Not only is a costly bureaucracy necessary to run the system, but except for a privileged few who know how to make the system operate in their favor and another group who are completely excluded because of absence of knowledge, connections or other

special assets having nothing to do with the ability to produce, unnecessary uncertainities and delays are introduced which cannot but hurt general efficiency and investment incentives.

28/ A qualification to this statement must be introduced to cover cases where purchases of such capital equipment are heavily subsidized, for example, through excessively liberal depreciation allowances. But these allowances seldom offset the combined costs of production, poorer quality and poorer maintenance facilities so often involved.

29/ An illustration is provided by the case of a foreign company in India that wanted to expand its warehouse facilities. The present warehouse stored barrels stacked two high. The alternatives were to purchase lift forks to stack the barrels four high or to increase floor space (which in this case meant a new building). The decision was made to increase floor space because the price of lift forks, which the company was not permitted to import since some are produced domestically, made this the cheaper alternative.

30/ Road-building and general construction methods in India appear to be very labor-intensive, more so than in most other developing countries, with the exception of China; and Air India is said to have the lowest equipment-to-labor ratio of any major world airline, not because of inefficiencies but as a means of stretching its limited capital equipment as far as possible.

31/ An illustration is provided by Öngüt for a match factory in Turkey, where both a labor and a capital intensive method was available. He shows that if wages rise by any more than 5 per cent per year (as they have in the past), the labor-intensive alternative will still not be preferable even if a wide variety of incentives in favor of the capital-intensive method are eliminated.

32/ See Werner Baer and Michel E.A. Herve, "Employment and Industrialization in Developing Countries", Quarterly Journal of Economics, February 1966, pp. 88-107; and Raymond Vernon, "International Investment and International Trade in the Product Cycle," Quarterly Journal of Economics, May, 1966, pp.732-45.

33/ See Charles Cooper, et. al., "Technology for the Second Development Decade," (Institute of Development Studies, Brighton, England, 1969).

34/ In addition the National Planning Commission of Nepal presented a comprehensive survey of the problem of educated unemployed in Nepal. Unfortunately, it was received too late for adequate discussion at the conference. For this reason, and because of its length, it is not included in this volume. It can be obtained by written request to the Manpower Planning Unit of the National Planning Commission, Kathmandu, Nepal.

35/ As indicated at the outset, the views expressed here do not necessarily reflect the conclusions reached by other conference participants.

36/ In presenting these concluding comments questions about the nature and seriousness of the employment and low-end poverty problem will be set aside, but not without one last reiteration of the view on social science research priorities we hope falls out of this paper. Top priority must be given to gathering better data, particularly on the characteristics and behavior patterns of specific group in the labor force. We really have only the vaguest idea about the groups such an employment policy would be aimed at helping. Perhaps the most appropriate form for such a study would be a longitudinal sample survey, that follows representatives samples through time, asking questions at frequent intervals about employment sources of income, consumption patterns, migration patterns, and attitudes towards work opportunities.

37/ See J.R. Harris and M. Todaro, "Migration, Unemployment and Development: A Two Sector Analysis," American Economic Review, March 1970, pp. 126-142, who reach the same conclusion reached here about the importance of agriculture in improving the urban employment situation, but by a different route.

38/ The common assumption is that agriculture is a highly labor-intensive activity in Asia, though I have seen no data confirming this. For non-agricultural sectors, a recent study of industry in Asia and the Far East indicates that the lowest capital-output ratios are found in sectors producing food products, textile, footwear, tobacco, non-alcoholic beverages, printing, matches, bicycles, and heating, cooking and lighting apparatus, whereas industries with high capital-output ratios include man-made fibres, petroleum and heavy chemicals, automobiles, and a wide variety of investment goods. See M.M. Mehta, Employment Aspects of Industrialization with Special Reference to Asia and the Far East (Bangkok: International Labor Organization, 1970), pp. 37 & 40.

39/ These two recommendations, plus a number of issues discussed in previous sections deserve far more detailed treatment than is possible in this concluding section. They raise a host of interrelated micro- and macro-economic problems that cannot be sorted out satisfactorily without some new forms of economic model-building. Such models must be able to account for the indirect effects on employment in one sector because of development in another - in particular (and to put the point in terms of a specific example) to account for the fact that wage-goods are as much an input into the production process as are raw materials - to incorporate the employment effects of changes in relative prices and in income distribution, and to take account of changes in savings rates and hence growth rates over time, a fairly tall order.

Perhaps some form of closed Leontief model that permits feedback from the final goods sectors would be a good starting point.

40/ This is not meant to imply that more government research institutes are the answer: experience with them is not encouraging. Perhaps additional tax incentives (beyond correcting factor price distortions) to encourage and finance private research would be better. The issue is complex and deserved detailed consideration.

OUTPUT AND EMPLOYMENT IN THE 70's: CONFLICT OR COMPLEMENTS

Gustav Ranis

There is general agreement that substantial difficulties are bound to beset the development process during the 70's and 80's, difficulties which will dwarf even the considerable problems experienced by the less developed world in the 50's and 60's. This impending crisis, moreover, probably has less to do with the relations between the rich and the poor - which are admittedly in bad shape - and more with what is likely to happen within the LDC's. It centers, mainly, around the nature of the relationship between population and labor force growth, on the one hand, and the generation of output and employment opportunity, on the other.

It is generally recognized that the less developed countries have not performed too badly in the past, especially during the sixties, in terms of overall growth rates or per capita income increases. But it is also increasingly recognized that these aggregates have concealed an increasing disparity in regional rates of growth, increasing income inequalities and other distributional malfunctionings, with rising unemployment rates as a major feature. Even where countries have been growing at 5 or 6 per cent in real terms and the industrial sector at 8 or 10 per cent annually, the annual rate of labor absorption in the non-agricultural sectors has been at levels of 2 or 3 per cent. Moreover, the elasticity of employment relative to output increases in the industrial sector has not only proven to be low, but has been falling, i.e. from .5 to .3 and below in some instances.

It is this performance over the past which gives us pause for the future. For even if we should be successful, starting today, with our family planning efforts - even to the extreme point of reducing population growth rates to zero - we are going to have a severe labor force explosion over the next 15 years. No matter what happens on this front, we can expect the labor force in most of the developing

countries to grow at rates of 3 1/2 to 4 per cent annually. This problem is compounded in the Near East and South Asian region where the man-land ratio in the still preponderant agricultural sector is already less favorable than in other parts of the developing world. However, while the Near East and South Asian countries are less favorably endowed with resources in terms of land-labor ratios than, let's say, the African or latin American countries, it is also true that population growth pressures are probably likely to be less severe in the 70's and the 80's in this region than elsewhere in the less developed world. Africa, for example, while at this time probably still in a land surplus situation, is very likely to be subject to increasing Malthusian pressures and to move into a Ricardian situation in the years ahead. Latin America which industrialized much earlier (and made its policy errors earlier and perhaps more thoroughly) may, on the other hand, find it more difficult to solve the problems posed, due to the existence of substantially less flexibility in its system, due to more severe sectoral clashes between unions, government and business, than seems to be characteristic of the countries in this region.

Nevertheless, the overwhelming question before the countries in this region, as elsewhere, in the decades ahead is "can sufficient jobs be created either in the agricultural or non-agricultural sectors to accommodate the projected increases in the labor force, not to speak of mopping up the already existing backlog of the unemployed and underemployed ?" With respect to the magnitude of that backlog, the estimates vary. This is true because the unemployed, open or disguisedly so, are usually difficult to measure, partly because there is an interaction between the demand for labor and labor force participation rates, and partly because the very meaning of being employed i.e. the intensity of work, the productivity of work, the hours of work, needs to be redefined in terms of non-Western definitions of labor force participation and unemployment rates.

There is thus little cause for complacency, especially when this problem is viewed, as it must be, against the backdrop of a worsening fatigue in the aid, trade and migration

relationships between the rich and the poor countries, which otherwise could have alleviated the problem. But before we throw up our hands in despair, we must note that we also have evidence that growth without increasing unemployment is, in fact, possible. And it is the analysis of this type of experience over the past twenty years which can be very instructive as to the real parameters of the problem before us. The basic overriding question is whether or not there is a necessary basic conflict between output and employment generation in the course of growth. If there is such a necessity, developing countries will be forced to make some very tough choices, especially in light of the contemporary rising pressures for equity and social justice. In other words, in that case good and sufficient humanitarian and political pressures may well determine that "something must be done about unemployment" as a social objective, and we will just have to face up to the consequences of these decisions in terms of lower output. But we have learned something - or at least should have - during these two decades, even if we have as yet not seen fit to make extensive use of it. We have evidence, for example, that growth without conflict with employment apparently could be achieved not only is historical Japan, but also in contemporary Taiwan, Korea and West Pakistan. If we look at the development performance of these countries in some perspective, we can at least make the general observation that they were able to achieve rapid rates of growth because of, rather than in spite of, a very labor intensive, therefore, employment creating, type of development strategy. In other words, far from being antithetical to each other, it may well be that the main ingredient of these so-called sucess stories is this very ability to move towards employment and output maximization at the same time. It, therefore, seems to me that the first question to be faced, and settled, is whether or not this so-called conflict necessarily exists and secondarily, if it does, how severe it really is.

What I am, in fact, suggesting is that the general experience of the 50's and 60's which indicates the existence of a severe conflict in terms of rising output and unemployment levels is entirely misleading because the very strategy which was followed in the pursuit of output maximization was erroneous while a different set of policies

might well have given us more growth and more employment. As economists and perpetrators of the dismal science, we seem to have difficulty in accepting the notion that it is possible to have more of both, i.e. more output and more employment. It is an incontrovertible fact that a substantial part of the profession and an even larger majority of policy makers implicitly or explicitly assume the existence of a conflict and are proceeding to talk about employment strategies as a way to ameliorate or amend the "output only" policies of the past. They talk about dethroning the GNP in behalf of employment and distribution. My point is that it may well come to that, but it may also be true that we have not even begun to explore a set of policies and development strategies which would give us increased output as a direct consequence of utilizing our unemployed or underemployed labor more effectively.

Those who adhere to this view of a necessary conflict usually cite the evidence, especially for the industrial sector, that there is customarily an opposite trend in labor productivity and employment. That is to say, if you want higher labor productivity, you must permit employment to fall; if you want fuller employment, you can only get it at the price of lower labor productivity. Now that statement is unexceptionable, but it is also tautological, since when output per worker goes up, the number of workers per unit of output always falls. Thus the real question before us becomes, how helpful this piece of evidence in terms of resolving the question before us is. In this connection one should recall that the type of economy we are talking about usually contains a relatively small non-agricultural sector engaging perhaps 20 per cent of the labor force, with an even smaller percentage, 5 to 10 per cent usually, in the wage-earning industrial activities. This relatively small island of industrial output is usually surrounded by a sea of agriculture, services and small industires, much of which is suffering from substantial un- and underemployment. The question then is whether in such a society the level or rate of increase in labor productivity on that small island is at all a meaningful criterion in terms of any objective for the economy as a whole. I would say it is clearly not. Take an extreme case for the sake of illustration. Assume you have a very small industrial sector equipped with the

most modern advanced technology, say all based on atomic energy. A few hundred workers in that kind of capital plant clearly would have a tremendously high productivity. Alternatively let us now assume we spread the same capital stock over thousands and tens of thousands of workers in the form of much less glamorous, more labor intensive types of structures. The productivity per worker will be much, much lower, but the island has become substantially larger as more of the unemployed and underemployed have been put to work. As a consequence, while productivity per worker is much lower, the total output generated by the scarce capital stock is now likely to be much larger. With capital now having been spread over a large number of people who previously made zero or only a marginal contribution to output, labor productivity for the economy as a whole, or per capita income, which is a much more relevant criterion than labor productivity for only those lucky enough to be employed in the industrial enclave, is enhanced as a consequence.

The same kind of argument can be made with respect to the commercialized sub-sector within agriculture. We hear, for example, a good deal about the necessity to introduce tractors into the Punjab in the wake of the Green Revolution, and that it must be a "good thing" because it increases labor productivity. Here again the relevant criterion should be what is the return to the scarce capital stock, i.e. what is the output generated. The increase of labor productivity on large farms as long as you have surplus labor next door which might alternatively be put to work, is not very impressive. It is undoubtedly true that, because of peak season problems, especially with increased double cropping, and the shorter time for harvesting permitted in the wake of the Green Revolution, the best technique in the Sub-continent, for example, may be a mix between labor intensive and more capital intensive production at various stages through the use of modern and intermediate technology. But again one should make these judgments on the basis of total output generated per unit of the scarce inputs rather than the productivity of those who are fortunate enough to be effectively employed. Certainly the major recent increases in the productivity per unit of scarce cultivable land and capital have been achieved through a chemical/fertilizer revolution which tends to be

fairly labor intensive, rather than a mechanical revolution which is more capital using.

In looking at the evidence of the 50's and 60's and in trying to learn what is transferable from the experience of the success cases, the inevitable question remains "how". The short answer is the adoption of policies which permit the changing factor endowment of society to be "heard" over time. A successfully growing developing economy can be said to be moving from a land intensive to a labor and ultimately a skill and capital intensive phase of development. But the growth path within these various regimes and, more importantly, the transition from one to the other, are much facilitated if, in fact, the signals reflecting changes in factor endowment over time are permitted to be transmitted to the decision making units in society. Letting the changing endowment speak, in other words, means permitting a closer relationship between the market prices of the factors of production and their equilibrium levels.

Viewed from an historical perspective, it should be clear that most of the developing countries, including those in this region, initially adopted a policy of import substitution, including typically a combination of overvalued exchange rates, low interest rates, favourable internal terms of trade for industry, all intended to provide protection to the new domestic industrial sector and the emerging industrial entrepreneurs. There are some persuasive reasons why such an import substitution phase may be a historical necessity in countries just emerging from colonialism. The difficulty, however, resides both in the type of import substitution package adopted and, second, in the method of dismantling these protective devices once the minimum necessary entrepreneurial capacity in the true infant industries has been created. Inevitably, strong vested interests, in the form of inefficient firms and civil servants who hate to give up the power bestowed through the control system, make it very difficult to dismantle the very controls which were initially established with a supposedly temporary purpose. As a consequence, it usually becomes increasingly difficult to differentiate betweeen bona fide and non bona fide residents in the infant industry

compound. The distortion of the three sets of relative prices, the interest rate, the exchange rate, and the internal terms of trade, artificially induce capital and import intensity. For example, interest rates which should reflect the universally scarce availability of capital are normally kept at artificially low levels. Consequently, capital is artificially undervalued, credit is rationed rather than allocated by price, and the factor endowment is not permitted to "come through" when decisions are made on either technology or output choice. An additional very serious consequence of artificially low interest rates, i.e., in addition to allocative inefficiency, is the fact that private savings are discouraged.

The normally over-valued exchange rate artificially encourages both capital and imports by undervaluing the price of imported capital goods and acts as a deterrent to the use of domestic inputs, especially of the labor intensive variety. Exports are discouraged, imports encouraged, and once again an artifical wall is erected between the factor endowment and factor utilization.

With respect to the domestic terms of trade, agricultural production incentives are sacrified at the altar of speeding industrial development by keeping food artificially cheap. The whole package bestows larger and larger windfall profits on the industrial "in" group and those civil servants which benefit from the direct rationing system which has long replaced any price determined allocation. Increasingly, especially as inflation pressures assert themselves with continuing government deficits, these disparities between the market prices and equilibrium prices become more and more pronounced, and more and more serious in terms of exacerbating the employment/output conflict.

We have been silent so far on the subject of wages - another distorted price - and this is because it is a horse of a somewhat different color. For one thing, no one in his right mind would recommend a reduction of the real wages of unskilled workers that brings them anywhere close to their equilibrium levels. But what might be strongly suggested is that any continuing increase in real wages as a

consequence of union and/or government pressure via minimum wage legislation is bound to be highly unfavorable to the maximum utilization of the relatively abundant unskilled labor supply along the economy's production functions. We all know that governments often take the lead in granting wage increases to their own civil servants and that such increases are then copied by the private sector and supported by union pressure. As economists and policy makers all we can do is tell the politicians what the costs of such policies are. If wages are rising in spite of a substantial overhang of unskilled labor, and if there is fear of more such rises in the future, we can only expect entrepreneurs and/or public officials to continue to react more and more in a labor-saving direction. The course of real wages is a very sensitive issue in most countries, and politicians have to make the choices themselves once the costs of various policies are made clear to them. But it should be remembered once again that while no union leader will go to his constituents to advise them on wage restraint, it is someone s responsibility, presumably the government's, to worry about the disenfranchised people who are unemployed and unemployed outside of union membership.

No one, in other words, would argue for reducing real wages to anything close to the equilibrium price for labor; but one should be concerned with wage restraint in the sense of avoiding increases in real wages for unskilled workers, as long as there exists a tremendous overhang of unemployed and underemployed workers in the labor market, and substantial potential future inflows into that market from prospective population growth can be anticipated.

It is, moreover, abundantly clear that the gap in real wages as between the agricultural and industrial sectors, which seems to be growing in many parts of the region, has lead to an increase in the so-called rate of urban drift ahead of urban job opportunities which is extremely costly, not only in terms of the extra economic costs of displacing disguised rural unemployment with open urban unemployment - due to the higher cost of urbanization, etc. - but also politically and socially. While there are inevitable wage and amenity differentials between agricultural and urban workers, any widening in that gap exacerbates an already serious problem of wage distortion.

To let the endowment speak under these circumstances clearly requires a turning down of the temperatures in the aforementioned industrial hothouse. Substantial adjustments of the interest rate, the exchange rate and the terms of trade may be required. It should be clear, however, that a simple elimination, or at least diminution, of the distortions in these various relative prices may not be sufficient. A devaluation, for example, to bring the exchange rate into line with the real cost of foreign exchange, may have to be accompanied by a change in the rationing system, in this case the import control regime, if, in fact, a more price determined allocation is to become possible. Even a re-examination of the tariff structure underneath the quantitative restrictions, often quite haphazard in character, may be necessary. Similarly, a high interest rate often needs to be accompanied by the greater willingness of banks to take risks even when the borrower does not have a prime signature. Thus, liberalization in a number of markets may be needed, i.e. both an adjustment of the signals and a willingness to permit greater play for the market and a lesser role for discretionary action by officials.

It should be emphasized in passing that the attempt to improve any of these signals in the attempt to let the endowment speak for itself is not to be interpreted as a call for free enterprise, capitalism or any other particular social system. As is well known, socialist countries are themselves increasingly coming to rely on the market mechanism as a tool for improving their own allocation and thus furthering their own development. What we are concerned with here is a better set of signals as propelling or inducing and coordinating devices to get the proper economic response, rather than the support of any particular social system. Such advice is equally valid when a society has determined, in its own wisdom, to follow either a socialist, a capitalist or a mixed economy path. What we are saying is that as long as certain groups, public or private, enjoy windfall profits bestowed upon them through a direct allocation process which is unable to clear the markets, the choice of technologies and output mixes is likely to be inefficient, not only because the signals are wrong, but also because there is no need to be efficient when the very

possession of an import license or a line of credit provides ample profits without requiring any entrepreneurial energy or productive ingenuity.

I am also not suggesting that the government should take its hands off and go back to a textbook laissez faire 19th century stance. Markets themselves are admittedly imperfect; private returns do not equal social returns. The time horizon of private entrepreneurs may be too short. The question rather is, what role the government should play in lessening the impact of these imperfections without returning the society to colonialism or a rampant market mechanism. In my view, that role is one of trying to bridge the gap between social and private returns and of trying to perfect the markets just a little, by indirect rather than direct means. In other words, once it has decided, for one reason or another, what activities should be in the public sector, in affecting what goes on in the rest of the economy it should attempt to work through taxes, tariffs, and subsidies, and as even handedly as possible, e.g. uniform tariffs, rather than through the low interest rate, over-valued exchange cum licensing packages which are bound to be inefficient and whimsical.

Just because it is the conventional wisdom there is no need to abandon our view that government must also provide the overheads, must see to it that markets operate better, must provide information to ensure that weaker elements in the market are not disadvantaged by monopoly or oligopoly power. It must provide information on new technologies, including intermediate technology; it should be in a position to provide technical assistance when entrepreneurs have little at their disposal but the blueprints of the advanced countries and those made available by avid salesman from abroad. Government cannot simply step aside and let the signals speak for themselves. It has a tremendous responsibility to direct the development effort. It is merely a question of what tools are more effective for that purpose.

It should be made emphatically clear that the failure to move quickly enough to permit the factor endowment to make itself felt cannot be laid entirely at the doorstep

of the developing countries. The blame, if that is a proper term, must clearly be shared with the advanced countries who, through the proclivities of private investors as well as the official policies with respect to foreign aid, often encourage the adoption of capital and import intensive technology in the recipient countries. Both recipient and donor country engineers are all too ready to accept the blueprints they are most familiar with, i.e. those of the advanced donor country, especially when there is a belief, without much investigation, that the latest technology usually dominates in every respect. Multi-national corporations, for example, are typically unlikely to spend much time in investigating technologies alternative to those used in the mother plants. On the aid side, the practice of tying to the donor country typically prevents developing countries from obtaining their capital goods in the cheapest market. But with respect to both the private and public flow of capital, perhaps the most important problem emanates from the normal project orientation which induces developing countries to maximize the import and thus the capital content of projects proposed for foreign financing.

It should, moreover, be readily admitted that both the recipient and the donor are customarily subject to the prestige appeal of large shiny modern factories and of other latter-day monuments, which provide a much better press both to the visting donor congressman and to the recipient governing elite.

In some quarters, sometimes quite respectable, all this talk about letting the factor endowment influence the choice of technology is considered rather irrelevant. This is due to the fact that the choices actually available are viewed as few or non-existent. In other words, if there exist objectively very few possibilities for substituting labor for capital, then all this talk about factor-price distortions and their impact on output and employment generation is misplaced - so the argument goes.

This argument can be met on two levels. First, even if we conceded that there are absolutely no technological choices, i.e. there is only one way of producing a particular commodity, there is still the question of changes in

output mix which should make it possible to adjust one's productive structure in line with one's changing factor endowment. We seriously underestimate, I think, the ability to increase trade between the developing and the developed world, in spite of the ample evidence that developed countries have not done enough in terms of opening up their own markets to the labor intensive products of the developing countries. Even more importantly, trade among the developing countries is still absolutely at a very low level and could expand very rapidly, given substantial growth in the less developed world as a whole - with or without special regional trade arrangements.

But let me get to the heart of the matter, i.e. the uneasiness concerning the range of technological choice within given industries. What is this new intermediate technology people are talking about, one is frequently asked? Are you trying to foist obsolete machinery on the developing countries? Or, alternatively, the only machinery that can be procured is the very latest; there is only one kind of machinery which dominates and the amount of labor and other complementary domestic resources that can be combined with it is fairly well spelled out. Those are the arguments. If one thinks about them for a moment from the logical standpoint, they state, in their extreme form, that since developing countries normally draw their technology from the advanced world, the only choice is the very latest and from the most advanced of the rich countries. You cannot, as a minimal choice, import either last year's technology from the United States or this year's from Japan or Germany as an alternative. Thus, in the extreme, the argument is patently absurd. We know that in the advanced countries themselves we see a substantial variety of technological choices in the same industry in different parts of the country, utilizing capital stock of different vintages.

That aside, one must be willing to acknowledge that there may be only one best way to build a bridge, that there may be a rather restrictive set of technological choices in such continuous process industries as petrochemicals. But this is not true for most of the industrial sector and certainly not true in agriculture which still constitutes the preponderant sector in most developing countries.

What I think is important to remember is that intermediate technology does not mean that use of second hand, outmoded or obsolete machinery. It means innovative, modern, labor-intensive technology, i.e. using one's ingenuity to accommodate one's factor endowment each step of the way. These are not just words, for such technological flexibility has been demonstrated to be feasible both in historical Japan and in such contemporary contexts as Korea, Taiwan, and West Pakistan. Take Japan, for example. In the nineteenth century Japanese spinning industry the number of workers per identical spindle was seven times that used in the U.S. The Japanese increased the speed of their machines, used cheaper raw materials, i.e. a lower staple cotton, and compensated by putting more workers to the task of repair and maintenance. Not only on the machine proper, but also in such machine-peripheral activities as inspection, handling between machines and transportation between plant sites, a tremendous amount of substitution between labor and capital can be accomplished. In construction, for example, this is evident to the naked eye. One thing that the tourist is often impressed by in the Indian Sub-continent is the evidence of machine-paced labor intensity, as cement is passed from the mixer from hand to hand along a human conveyor belt until it is poured into concrete just before it hardens. Such flexibility in substituting unskilled labor for capital has been demonstrated even in metal working, for example in the Soviet Union.

Another important type of capital-saving or labor-using innovation is the use of the putting-out or cottage system, a plant-saving innovation taking advantage of economies of scale at certain stages of processing and permitting much of the production to be done,as appropriate, in homes, adjoining sheds,and small workshops. This requires relatively little capital for plant and thus permits radically different capital intensities and different vintages of capital to be used at different stages of processing. Such contracting was used extensively, in the case of historical Japan, in silk production, in cotton weaving, and later, in bicycle, rubber and electrical goods production. Its importance may be demonstrated by the twin facts that more than 60 per cent of Japanese industrial output at the

turn of the century was in medium and small-scale industries involved in a form of putting-out as described; and that plant rather than equipment typically makes up more than 50 per cent of total capital formation in developing countries.

The historical examples above can be duplicated in the contemporary developing world. The Koreans and the Taiwanese, for example, are showing a wide range of technological choice in textiles, in electronics and in plywood industries, during the last decade. What the Japanese were doing relative to British and American machinery in the nineteenth century, the Koreans and Taiwanese are now doing relative to the Japanese as well as the American technology. They are producing the same quality textile or plywood or transistors with three to four times as much labor input per unit of capital. The sub-contracting which can be so important a feature of labor-using technological change is being used increasingly at an international level as exemplified by the export-bonded processing schemes in both Korea and Taiwan. While the United States, five or ten years ago, used to send raw materials to Japan to be worked up, with cheap labor added, and then re-exported to the United States, the Koreans are now handling such materials for Japan. In fact, there are some situations which find the United States sending raw materials to Japan, where some processing takes place as skilled labor is added; then the semi-finished materials are re-exported to Korea where unskilled labor is added before the final product is re-exported to the United States. All these are examples of substantial technological adaptation in response to international differences in factor endowment, when these differences in factor endowment are permitted to be reflected in the relative price signals which entrepreneurs face. In West Pakistan the medium and small scale engineering industries which grew up in the Punjab in the wake of the Green Revolution, have shown remarkable adaptations in a labor and domestic material using direction. There are clearly substitution possibilities, not only in Korea, but in Japan and Taiwan, which some people may call special cases but which exist in other parts of the developing world as well. It is this evidence and this evidence only which gives one comfort that the crisis of the 70's and 80's can be met.

The overall contours of that Japanese success story are well-known and need not be repeated here. What is less well known is that the Japanese started with a relatively short period of import substitution for very much the same reason contemporary developing countries do, i.e. in order to build sufficient industrial infrastructure and provide for a training period for its entrepreneurs. But, unlike in contemporary developing countries, the import substitution package never took on an extreme form and didn't last very long. Tariffs were instituted but remained very low, partly because Japan was "lucky" enough to be deprived of fully independent tariff policies by extra-territoriality arrangements. The government was heavily involved in many of the early infant industries, either by direct participation or through the establishment of pilot plants and experimental structures, but Japan also managed to dismantle the hothouse and move toward a greater reliance on the market by 1890 when most government enterprises were sold off to the private sector, reforms took place on the monetary side and the participation of medium and small scale industrial entrepreneurs as well as agriculturists was considerably enhanced.

Perhaps even more to the point are the contemporary success stories. In Korea, for example, the first effort to shift from import substitution to a market and export oriented pattern of growth took place in the early '60's. In May 1964, Korea substantially devalued her currency and simultaneously unified a complicated multiple exchange system. Moreover, imports were liberalized, i.e. the licensing system broadened through the widening of import quotas, the introduction of export retention schemes and, later, a quasi-automatic licensing system to cover an expanding volume of imports. The effects of a change in the signals via a change in this crucial relative price have been startling. Exports, which had grown at annual rates of less than 15 per cent during the '58-'62 period, have been growing at 30-40 per cent annual rates since '64. Moreover, this export boom has been especially pronounced in the area of light industry where value added in the form of pure unskilled labor could play an increasingly important role. In 1962 75 per cent of Korea's exports

were land-based raw materials and primary goods; by 1968 77 per cent of her exports were industrial labor-based products. Especially noteworthy is that the participation of the small-scale industrial sector (less than 10 workers), which is most labor-intensive, rose from 19 per cent to 32 per cent of the total during that same period.

In 1965, relative prices in the sector complementary to the foreign trade sector, i.e. the credit sector, were changed dramatically. Interest rates, which had been kept at artificially low levels, were drastically raised in 1965, and the huge gap between the low official rates, actually available only to established prime borrowers, and the astronomically high rates facing ordinary people on the curb market was substantially narrowed. Interest rates on saving deposits doubled and deposits responded by rising by more than 200 per cent between 1964 and the end of 1965, and by more than 700 per cent by September 1968. To indicate that this was not just a shift from one form of saving to another, we should note that the overall saving rate which had been negative in the 1958-62 period and had stood at only 5.8 per cent as late as 1962-64, reached 13.6 per cent in 1968 and is currently in the 15 per cent range.

It can be said that the changes in these two relative prices, the exchange rate and the interest rate, more than anything else, have led to the spectacular turn-around in the performance of the Korean economy summarized above. As a direct consequence, Korea was placed in a position to put her abundant human resources to use in an export-led rather than import substitution dominated industrialization effort. Increasingly also, with time, her domestic skill and innovative ingenuity could be incorporated with unskilled domestic labor, as medium and small-scale entrepreneurs had an opportunity, really for the first time, to gain access to resources and participate broadly in the development process.

A similar story can be told for Taiwan. Following devaluation and liberalization along with the reforms in the very early 1960's, the economy's pattern of growth has

shifted markedly from a land or raw materials-based pattern typical of the import substitution phase to one which accommodates more and more of the abundant unskilled labor supply in terms of both changes in the output mix and in the technology in use. In the mid 1950's Taiwan's exports were concentrated to the extent of 76 per cent in primary and raw material exports; today more than 75 per cent of her exports are in the labor-intensive industrial area. Taiwan's performance in terms of any of the usual aggregate measures, growth rates, saving rates and exports, can only be called phenomenal and reflecting similar marked changes as between the late 50's and early 60's. It is commonly agreed that this export-oriented industrial growth pattern has been so successful that not only were increases in the labor force absorbed but the existing backlong of unskilled labor mopped up by the late 60's. Consequently Taiwan is now experiencing a bona fide labor shortage for the first time.

Even in West Pakistan, which less people will claim represents some sort of "special case," the change in structure which took place as the consequence of policy shifts in the early 60's, including de facto devaluation and import liberalization, turned the economy's performance around sharply. Virtual stagnation in the late 50's gave way to per capita income increases in excess of 3 per cent per annum in '65-67. During the same period, the savings rate doubled from 5 to more than 9 per cent and export growth rates rose from 2 1/2 per cent to more than 8 per cent anually, which non-traditional exports rising at more than double that rate.

In 1961, moreover, the policy of forced procurement of major food crops at low prices was abandoned. Instead, prices were permitted to be market-determined, undergirded by government guaranteed minimum price supports, with fluctuations reduced through the operation of buffer stocks. This reform, supplemented by fertilizer subsidies, constituted a marked improvement in agriculture's terms of trade. In this fashion farmers' incentives were realigned, culminating in substantial growth of agricultural productivity, especially in West Pakistan, even before the new miracle

seeds became generally available. Once this more drastic change in input-output relations became possible, especially in wheat, farmers were ready to respond and, moreover, able to increase vital water inputs through the free importation of pig iron needed for the construction of tubewells. The realignment of the terms of trade thus made the 32,000 private tubewells, which had mushroomed up by 1965, profitable while readjustments in the exchange system made them possible. Food grain production which had been growing at 1-2 per cent annually during 1950-60 spurted ahead at a 4 per cent annual clip during '60-'65. By 1970-71 a wheat crop at 170 per cent of '60-'65 levels is expected and agricultural surpluses, rather than the persistent deficits of the '50's, are being contemplated.

Moreover, the substantial increase in agricultural productivity and the accompanying demand for pumps to power the tubewells led to the surprising development of engineering and other smaller scale industries in West Pakistan. In this mutually self-reinforcing fashion, agricultural surpluses financed the growth of decentralized relatively labor-intensive medium and small-scale industries, many of which is turn provided the physical inputs and incentives for further agricultural productivity increase.

We know that no particular country's experience can ever be fully duplicated elsewhere; but the major elements of these success cases do demonstrate that a clearing up of the signals and a return to a more market-oriented system of resource allocation after initial import substitution may well constitute a necessary, if not sufficient, step in harnessing the economy's labor resources to the development effort. The most important gains from this general policy re-orientation will not come simply from the greater efficiency achieved in the static sense, but from the dynamic responses which result from having more medium and small-scale entrepreneurs and other economic agents productively involved. The minimization of output/employment conflicts and the success of the overall growth performances depend vitally on how many little people all over the economy have access, at a price, to the resources required to put their innovative ideas into action.

ECONOMIC DEVELOPMENT AND THE PROBLEMS OF EMPLOYMENT IN AFGHANISTAN

Murad A. Asiel

I. Introduction
II. The Problems of Concept, Classification, and Measurement of Employment and Unemployment in Afghanistan

(a) Problems of concept and measurement
(b) Population, rural and urban
(c) Working age population and labour force
(d) Sectoral distribution of labor force
(e) Underemployment in Afghanistan

III. Employment, Economic Development, and Technological Change in Afghanistan

(a) Employment problems and prospects in non-agricultural sectors
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IV. Summary and Conclusions

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I. INTRODUCTION

Whether open or disguised, the problems of unemployment in Afghanistan are becoming increasingly serious. Because of its chronic and widespread character and its socio-economic and political consequences, a partial alleviation of the problem, if not its elimination, is now being recognized as one of the basic conditions of progress. This does not mean, as the experience of Afghanistan since the 1950's also indicates, that the creation of more employment opportunities should be considered

the sole, or even the primary objective of planning. An approach to the problem of growth in an economy such as Afghanistan's must take thoroughly into account the employment issue. This requires a consideration of the issues involved in alternative courses, with reference to their implication for employment and for other economic aims, in order to assure its reality. It is, thus, primarily on the socio-political ground, under a newly democratic set-up, that, in Afghanistan, unemployment ranks high among the social problems to which a solution is to be sought through planned development. But the remedies proposed should also take into account certain economic aspects with regard to economic development.

This paper will deal with some selected aspects of "the Problems of Employment and Unemployment in Afghanistan in its early stages of Economic Development". Specifically it will seek to observe and analyze the major questions:

(i) In spite of almost fifteen years of planning, and in spite of aiming to abolish unemployment and raise levels of living, in Afghanistan, it appears that the problems of employment are more serious now than in the early 1950's. WHY HAS THIS BEEN SO ?

(ii) From the strategies and policies pursued, and the problems faced during the planning period, and those that are likely to be experienced within another decade or so, together with the examination of some alternative courses, an attempt will be made to seek and analyze the factors responsible for the deterioration of the employment situation in the economy, in terms of employment, output, productivity, and other relevant criteria. WHAT POLICY IMPLICATIONS FROM THESE FACTORS AND FROM OTHER ALTERNATIVES CAN BE DRAWN?

To tackle the problem as outlined above, the subject will be treated in two papers.

1. The Problems of Concept, Classification, and Measurement; and

2. Employment, Economic Development, and Technological Change in Afghanistan.

The two papers cannot be conclusive. Further research and study are required. Nonetheless, it is hoped that the papers will shed light on the scope of the problems and outline the issues and the actions required if a solution is sought for the problems.

II. THE PROBLEMS OF CONCEPT, CLASSIFICATION AND MEASUREMENT OF EMPLOYMENT AND UNEMPLOYMENT IN AFGHANISTAN

The problems of concept, classification, and measurement of the labor force, employment, unemployment, and particularly under-employment, in a developing country like Afghanistan, are complex. The complexities can be attributed, in general, to three problems:

i) lack of reliable data and information;
ii) inadequacy of standard concepts and classifications for purposes of definition and measurement; and
iii) the special conditions prevailing in the Afghan economy.

In what follows, these problems are discussed briefly in a general form, and then in the specific case of the economy of Afghanistan.

Lack of Adequate and Reliable Data and Information:

Statistics in Afghanistan are, in general, inadequate. Available data on manpower, employment, and unemployment are very limited in scope and coverage.

A key factor in determining the manpower resources of a country are census data that might provide information on economic activity, size, distribution and, more important, the rate of growth of population and the labor force. There has never been a population census in Afghanistan. Indirectly, there have been some inquiries and surveys which can, as we shall discuss later, provide a basis for rough estimates of the population and the labor force.

Statistics of employment and unemployment which are

available on a continuous basis are very limited. The Employment Market Information Program, started in 1959 and conducted at half-yearly intervals in Kabul, the capital, and some other cities presents a fairly reliable picture of the employment and unemployment situation in the public and private sectors. But these studies, by using the so-called Establishment Approach, exclude major sectors of the economy - agriculture, establishments employing less than 25 persons, and the self-employed.

Information is available on employment and unemployment from surveys of a number of specific labor markets of major interest. Such surveys have also been conducted by various Government agencies, research organizations and universities. But one of the problems of these studies is that they cannot provide information on a continuous basis. Village and provincial surveys can give useful but incomplete information on employment and unemployment in rural areas. The Household surveys of Lashkar Gah and Kabul provided more systematic data on the demographic and economic aspects of households and workers in the areas covered. The annual Surveys of Progress and the Plan documents provide scanty information on the labor force and employment, mainly in the organized sectors.

The other important sources of information on which, to some extent, our analysis relies, are the studies made by individual experts in this field.

(a) Problems of Concept and Measurement:

The concept and approaches used in the above mentioned studies vary to some extent. However, in general, they have followed to the standard United Nations' and Western concepts and definitions that suffer from the inadequacy of not being applicable to developing countries.

Concepts such as the labor force, employed, unemployed, and under-employed, based on the "gainfully occupied" approach and the "labor force" approach, both recommended by the United Nations 1/ and practiced, with minor differences,

1/ See footnotes at end of article.

by industrialized countries, are more suitable for advanced economies where most of the persons in the labor force work as employees in well organized establishments and public services. The labor markets in these economies are also well organized and as such the concepts employed, unemployed, and seeking work, are more meaningful. But in a developing country like Afghanistan, the utility of these terms especially in the rural areas, without proper modification, is very limited. The reasons for this inadequacy are due to a number of factors. The most important among them, in addition to those discussed in the following section, are the following:

The "gainfully occupied" approach is based on the idea that each person has a more or less stable functional role, and that this role is to some extent, independent of the persons' activity at any given brief interval of time. Wherea the "labor force" approach is based on the individual's activity during a stated brief time interval.

Every person within the age group 15-64, is classified in or out of the labor force on the basis of his reported activity during a specified "reference period", and within the labor force as either employed or unemployed.

Employed persons comprise those who, during the reference period, are gainfully at work. Unemployed persons include those above a specified age and who did not work during the reference period but were looking for work. Thus, the labor force is defined as a measure of the economically active population in the working age-group, in the sense of engagement in, or availability for, the production of goods and services.

These definitions raise a number of questions. One is on the "reference period", referred to above. The reference period is usually a day or a week in the labor force surveys in advanced countries, but it may be a longer period, such as one month, in the Lashkar Gah Household Survey. Most sources of information on manpower, employment and unemployment in Afghanistan do not indicate the reference period. A reference period is important, especially when related to

the pattern, duration, and seasonal variation and aspects of occupation.

The other problem is, as already mentioned, the applicability of the terms employed and unemployed. For analytical purposes and to show the broad magnitude of the problems, some writers and economists have made a distinction between the concepts of "manpower surplus" and"unemployment". 2/

The concept of manpower surplus has been linked with potential surpluses, and the concept of unemployment has been reserved for the phenomenon of the supply of labor actually forthcoming being in excess of the demand within a given social framework. By this distinction, disguised unemployment and under-employment will be part of the manpower surpluses which might become available, given assumed changes in organization, but will not be treated as part of the currently unemployed if the existing social organization permits them to the i ile or disguises the fact that they contribute very little or nothing to the social output despite their appearing to.

But this distinction does not allow us to assess the broad magnitude of the problems involved unless we have an overall picture of the employment millieu in Afghanistan.

In what follows, an attempt is made to, first, quantity the magnitudes broadly, and then assess the problems of unemployment and manpower surpluses.

(b) Population, Rural and Urban:

The fact that there has been neither a census of population, nor a satisfactory record of vital statistics makes it impossible to know the actual size, growth, and variation of the population.

The Department of Statistics, Ministry of the Interior was set up in 1950 and given the responsibility to carry out a census of the population and to provide other demographic and vital statistics. However, the Department has been unable to conduct a census or even to collect vital statistics. The population census, which was planned to be conducted towards the end of 1970 or early 1971, is likely to be postponed until a later period, due to numerous technical, organizational, and

institutional problems. 3/ Thus, direct information on Afghanistan's population and its economic characteristics is unavailable on an aggregate basis. The information that is available has been derived from sample surveys, individual studies, and manpower estimates.

In 1954 WHO carried out the first exercise to assess the population by conducting a sample survey on Kabul. 4/ The records of the activities of WHO in 85 villages in the Logar Valley provide some information about the age and sex composition of population of the area. A pilot census was carried out in April 1960 in the village of Deh Khodadad near Kabul. 5/ In 1960, certain United Nations experts assisted the Ministry of the Interior in estimating the population of Afghanistan. 6/ In estimating the population, the following assumptions and procedures were used:

(i) figures of registration of the male population - identity cards were taken as a base;
(ii) on the basis of the information provided by Deh Khodadad pilot census, it was assumed that the male/female ratio is 50-50; and
(iii) the birth rate is 29.56 and death rate is 9.74 per thousand.

Based on (ii), in areas where identity cards had been issued to the males, the number was doubled in order to estimate the total population of both sexes. For areas where no identity cards were issued, the estimates of male population, made for administrative purposes some 10 years earlier, were used with an additional 15 per cent, assumed to be the decade rate of growth for that segment of the population.

The above estimates give a figure of 13.8 million for the population of Afghanistan in 1339 (1960-61), including 2.4 million nomads. Based on 1339 (1960-61), the size, annual increase, and rate of growth of population for the last decade 1339-49 (1960/61-1970/71) are given in the following table.

TABLE I

SIZE AND GROWTH OF POPULATION IN AFGHANISTAN
1339-1349 (1960/61-1970/71)

Year	Estimated Population (Million)	Annual Increase (Million)	Annual Increase (%)
1950	12.00	-	-
1960/61	13.80	1.80	1.5*
1961/62	14.00	0.20	
1962/63	14.29	0.29	
1963/64	14.54	0.25	1.75**
1964/65	14.79	0.24	
1965/66	15.05	0.26	
1966/67	15.40	0.35	
1967/68	15.70	0.30	1.90
1968/69	16.00	0.30	1.90
1969/70	16.30	0.30	1.90
1970/71	16.60	0.30	1.90

*With a decade rate of growth of 15 per cent the simple average rate has been assumed about 1.5 per cent p.a.
**However, the annual figures vary, the average rate of growth during the Second Plan was assumed about 1.75 per cent p.a.

Before we proceed, let us first examine the three underlying assumptions on which the above estimate is based, namely the size, the male/female ratio and the rates of growth.

On the size of the population, since no census has been taken yet, it is difficult to make any precise comment. There are various estimates 7/ ranging from 11.5 8/ to 15.2 million for 1339(1960/61). The 13.8 million figure, mentioned above, has been accepted officially. However, it has been claimed 9/ that the figure is overstated, though not much. Anyway, taking the other estimate of 13.4 million for 1960/61 with the assumed higher rates of growth as given in the following table,

the size of the population for 1970/71 comes very close to the official estimated figure of 16.6 million.

TABLE 2

ESTIMATED POPULATION OF AFGHANISTAN
1960-72

Year	Population (Million)	Annual Increase (Million)	Annual Increase (%)
1960/61	13.40	-	-
1961/62	13.67	0.27	2.0
1962/63	13.94	0.27	2.0
1963/64	14.22	0.28	2.0
1964/65	14.50	0.28	2.0
1965/66	14.79	0.29	2.0
1966/67	15.08	0.29	2.0
1967/68	15.43	0.35	2.3
1968/69	15.78	0.35	2.3
1969/70	16.14	0.36	2.3
1970/71	16.51	0.37	2.3
1971/72	16.89	0.38	2.3

Source: V. Chupir: "Population and Manpower Resources in Afghanistan 1345-50", Kabul 1967.

To be on the conservative side in what follows, we will base our analysis on the second estimate of a 13.4 million population in 1960/61.

Prior to the Second Five-Year plan, before 1960/61, varying rates of growth of population were accepted by the official authorities. The highest estimated rate up to this time did not exceed 1.5 per cent per annum. For example, the estimated 12 million population in 1950 and 13.8 million in 1960 indicated a decade rate of growth of 15 per cent. For the Second Five-Year Plan, the Government considered that the previous rate of growth of 1.5 per cent per annum is too low, and, therefore, a rate of growth of 1.75 per cent per annum was adopted for planning purposes. 10/ This figure was raised

to 1.9 per cent per annum for the Third Five-Year Plan (1967-72). 11/

The officially accepted rates of growth of the population have been claimed to be understated right from the beginning. Chupir, after examining the statistical reports of the neighboring countries where population censuses have been carried out, and on the basis of some economic and demographic reasoning claims that 2 per cent per annum rate of growth of population for the Second Plan and 2.3 per cent per annum for the Third Plan would be more realistic. (See Table 1 above).

For the appraisal of progress in 1347 (1968/69) a 2.5 per cent rate of growth was used, which is much higher than the originally estimated rate of growth of population of 1.9 per cent per annum. 12/

The evidence gathered during the last two years points to a population growth rate higher than those previously assumed. The Household Expenditure Survey of the City of Kabul, 13/ executed jointly by the Ministry of Planning and the Ministry of Agriculture, and the Kabul City Census of 1344 (1965/66), 14/ indicate a rate of population growth for the city (metropolitan area of Kabul) of about 3.2 per cent per annum. Data from the Lashkar Gah Household Expenditure Survey, also conducted jointly by the same Ministries, point to an annual growth rate higher than 1.9 per cent per annum. 15/ Institutional data collected from the collaborating agencies in the health and vital statistics fields support, to some extent, higher growth rates.

On the whole, the official sources claim that "major urban centers such as Kabul and the smaller towns such as Lashkar Gah are growing at a rate of 3.5 per cent per annum. The best guess we can make, therefore, for the country as a whole is a 2.5 per cent per annum. 16/

It can be argued that the official claim of 3.5 per cent growth rate for the major centers and towns could be true, but that is mainly due to the growth of urban centers and immigration of the rural population to these cities. It is also true that

the growth of the population in developing countries is faster than that historically experienced, especially in an area where birth control is unknown to the majority and where the mortality rate has been reduced by public health measures. But judging from the social and economic conditions prevailing in the country, and the fact that public health measures, except in few major centers, are at an early stage, the annual rate of growth of population probably does not exceed 2.5 per cent, and may be between 2 to 2.5 per cent per annum. Certainly, there is a need for further study and investigation in this field, but in what follows here we will base our analysis on the rate of population growth given by V. Chupir and represented in table 2 above, since I think this will be closer to the reality.

We are turning now to the assumption made on the sex ratio of 50-50 in the official estimates. The basis for the assumption was the finding of the Pilot Census of Deh Khodadad.17/ Similarly, in the Survey of Population and Agriculture (a sample of 413 villages conducted in 1960/61) the total population was estimated to be twice the reported male population 18/ even though information from spot studies suggested that a factor of 1.9 might have been more accurate than 2. Information gathered later in Kabul and in Lashkar Gah did not support the 50-50 male/female ratio. In Greater Kabul the ratio was found to be 1000/786, while in Lashkar Gah it was 1000/869,19/ more imbalanced in the urban areas (1000/795) than in the rural population (1000/883). The reasons for such higher male/female ratios in Kabul and Lashkar Gah were claimed to be the immigration of males from rural areas in search of employment opportunities, etc., without the family. Since we do not have reliable data on the sex composition of the rural population, we accept the official assumption of a 50-50 male/female ratio only for representation purposes, although it would be more reasonable, as available information supports, to assume that 52 per cent of population consist of males and the other 48 per cent of females.

The urban population of Afghanistan can be estimated rather more accurately. During 1339-42 (1960-64) and later in 1344 (1965/66) a number of surveys were carried out in Kabul, Kandahar, Herat, Ghazni, Mazar, Kunduz, etc. The first agricultural and population survey of 500 villages in 1960

and the second survey of 15,000 villages in 1968/69 provide, in addition to rural population, data on urban population of the areas surveyed. In 1966, the Ministry of the Interior also made an estimate of the urban population.

Taking 1339 (1960/61) as a base, the estimates, however, vary from 9.3 per cent to 9.6 per cent and all are claimed to be under estimates. 20/ Personal studies and available information from other countries similarly placed suggest that 10 per cent of the total population would be a more reasonable estimate for that year.

A rather large number of the population are nomadic. There has been no census of these people but the Ministry of the Interior estimated the nomadic population to be 2.4 million in 1960/61. Since it is difficult to treat this segment of the population by the rural-urban category or by sector, it is more convenient to exclude the nomad population and labor force in our analysis here, and then discuss them in a separate section later. The table below summarizes the population by size, and distribution of population by rural and urban areas.

TABLE 3

POPULATION OF AFGHANISTAN 1961/62-1970/71

(millions)

	1339 (1960/61)	1345 (1966/67)	1350 (1971/72)
Nomads	2.4	2.73	3.04
Population(excluding Nomads)	11.0	12.35	13.85
Urban:	1.1	1.48	1.96
Rural:	9.9	10.87	11.89
TOTAL Population	13.4	15.08	16.89

continued...

Source: Royal Government of Afghanistan, Ministry of Planning: "The Third Five-Year Economic and Social Plan of Afghanistan," ch. on Manpower also, V. Chupir: "Population and Manpower in Afghanistan 1345-50".

The data in the above table indicate that over 85 per cent of the population is still rural and only 14-15 per cent is urban.

Based on the above discussion, an attempt is made to estimate the working population, the labor force, and then the broad magnitude of employment and unemployment.

(c) Working Age Population and Labor Force:

In 1345 (1966/67) the working force of Afghanistan was estimated to be around 3.8 million. 21/ This figure seems to understate the size of the working population and labor force and therefore the problems of employment and unemployment. For comparison we can approximate the proportion of the population within the working age-group of 15-64 years on the basis of surveys and inquiries made in the country during the last few years, and compare that with the information available from other countries.

TABLE 4

THE PROPORTION OF POPULATION IN THE AGE-GROUP 15-64, AFGHANISTAN

Country	City or Area	Proportion of Population aged 15-64
Afghanistan:		
	Herat (1)	52.6
	Kandahar (2)	47.3
	Settlement Bagram (3)	45.5*
	Village Deh Khodadad (4)	49.5*
	Paktia (5)	51.8*
	Kabul (6)	49.0
	Kabul (7)	52.0
	Lashkar Gah (8)	47.0
Iran	Total (9)	52.5
Pakistan	Total (10)	49.5

continued...

*includes only age-group 15-60.

Source: (1) Royal Government of Afghanistan, Ministry of Planning: Manpower Situation in Herat, April, 1963.
(2) V. Chupir: op.cit. p. 11
(3) I.bid.
(4) I.bid.
(5) I.bid.
(6) I.bid.
(7) Survey of Progress 1968/69. op.cit. p. 61
(8) I.bid.
(9) Chupir: op.cit.
(10) I.bid.

The above data suggest that the proportion of the total population of Afghanistan within the age group 15-64 is around 50 per cent.

Table 5 below, gives data on the composition of population by age, sex, rural-urban, and the proportion within the age-group 15 to 64 years.

TABLE 5

POPULATION AND THE AGE AND SEX COMPOSITION OF THE WORKING POPULATION, AFGHANISTAN

(millions)

	1339(1960/61)	1345(1966/67)	1350(1971/72)
Total Population (excluding nomads)	11.00	12.35	13.85
Urban	1.1	1.48	1.98
Rural	9.9	10.87	11.89
Total Males	5.5	6.175	6.98
Total Females	5.5	6.175	6.97
Total Working Age Population	5.5	6.175	6.975
Urban	0.55	0.74	0.98
Rural	4.45	5.485	5.965
Labor Force	3.438*	3.8	4.25
Urban	0.419*	0.491*	0.628
Rural	3.019*	3.292	3.622

*estimates are for the year 1340(1961/62).

As the above table indicates, the working-age population is 50 per cent of the total population (excluding nomads) and was 5.5 million, 6.175 million, and might be 6.975 million in 1339, 1345 and 1350, respectively. The official estimate of the labor force of 3.8 million in 1345(1966/67) comprises only about 61 per cent of the total working population or about 25.3 per cent of the total population (including nomads). Such a ratio is not only below the corresponding ratios for countries like India (37%) and Pakistan (28%), but also these ratios, as will be discussed later, are likely to understate the facts and disguise the size of the problems of employment and unemployment substantially, especially in the rural areas.

The figures of the working population, given in the table above, exclude nomads which comprise about 18 per cent of the total population. Assuming the same ratio of 50 per cent for the total working population of this segment, our figures will be 6.75 million, 7.54 million, and 8.475, respectively for the three years under consideration. In this case the labor force will also rise by about 30 per cent.

The main purpose for constructing and comparing these figures with the ones officially accepted is to indicate the size and magnitude of the problems of the size of the working population (within the age group 15-64) in discussing the problems, and not only the size of the so-called labor force, as has often been done. The advantage of such an approach is to identify and discuss, quantitatively, the broad order of magnitude and the problems of labor surplus that cannot be identified by the approaches usually used in the Western context. We will come back to this point when we discuss the problems of classification and measurement in different sectors ofthe economy and various regions, but here let us continue the discussion followed so far.

(d) Sectoral Distribution of Labor Force:

With the distinction of rural-urban population discussed above, it is somewhat easier to estimate the urban labor force, the size and occupational distribution of labor force, the size and magnitude of employment and unemployment. But, the major problems of measurement lie within the rural areas.

Official calculations based on sample surveys, inquiries, and investigations, give the following data on the size and distribution of the labor force by occupation and the share of Gross Domestic Product originating in them:

TABLE 6

THE DISTRIBUTION OF LABOR FORCE BY OCCUPATION AND THE SHARE OF GDP IN EACH SECTOR, AFGHANISTAN 1345.

Sectors & Occupations	Labor Force (000)	Per cent or Labor Force	Per cent of GDP
Agriculture	2,942	77.0	52.0
Mining, Manufacturing, and handicrafts	234	6.1	10.7
Commerce, Transport Communication and Construction	216	5.7	11.0
Other Services	78	2.1	
Other Miscellaneous Activities in Rural areas	350		26.3
TOTAL	3,820	100.	100.

Out of the country's population estimated at 15.08 million in 1966/67, about 3.82 million made up its labor force. Over 77% of the total labor force was engaged in agriculture, contributing about 52 per cent of the GDP, while less than 33 per cent in non-agricultural sectors contributed about 48 per cent of GDP. Among the non-agricultural sectors mining, manufacturing, and handicrafts accounted for only 6.1 per cent of total employment and 10.7 per cent of GDP. However, this figure might still be considered rather high. If we exclude handicrafts, then

manufacturing and mining account for less than 1 per cent of total employment and 3.1 per cent of GDP. The contribution of the non-agricultural sector to GDP, however, has been increasing over the last few years, but agriculture still is, and for the foreseeable future is going to remain, the predominant sector.

This economic situation, with the heavy bias towards agricultural income and employment, has to be kept in mind in assessing the nature of employment and unemployment in the economy. Associated with the heavy bias in agriculture is the predominance of household production which makes it very difficult to estimate the volume of employment and unemployment even in the limited sense. Over 75 per cent of those gainfully occupied in the rural areas are employed in households, as compared to about 50 per cent in the urban areas. Production within these households is based on family labor and most members of the working age are drawn into work in varying degrees. The demand for more gainful work, in so far as it is felt by members of these households, may be, in part, only for such work as can be made available within the households; it does not, therefore, constitute a corresponding supply of labor in the open market. Moreover, some of those who are prepared to work outside the households may not be seeking it, and hence, they may not be easy to identify. In these circumstances, as K. N. Raj claims, "any estimate of the volume of unemployment in this sector in order to be meaningful, must take into account the basic sociological factors, including the attitudes, and aim at reflecting as fully as possible the differences in shade as between different types of demand for work, and not merely at providing an overall quantitative figure".22/ Nevertheless, there are some observations that will help us to show the broad magnitude of the problems.

There is no reliable data available on land tenure and ownership. The scattered information that exists, varies in method and coverage. In the first nation-wide agricultural survey of 15,000 villages, the total agricultural population was found to be 10,895 million in 1967/68.23/ The same source indicates that the number of landowners and livestock holders totalled to 1.257 million persons. Another source gives a figure of 619,253 landowners.24/ For purposes of comparison we will use both these figures.

According to the first source, assuming that each land owner and livestock holder represents a household, and if we further assume an average size of 6.5 25/ members for a household, we get:

Agricultural households (10,895,000 persons)	1,676,000
Agricultural households with land and livestock (8,170,500 persons)	1,257,000
Agricultural households without land - i.e., the difference (2,723,500 persons)	419,000

On the basis of the figure given by the second source, we get:

Agricultural households (10,895,000 persons)	1,676,000
Agricultural households with land (4025,144 persons)	619,253
Then, Agricultural households without land could be (6,869,856 persons)	1,056,747

Thus, on the lower side, the number of landless agricultural households comes up to 419,000 with a population of 2,723,500 persons, while, the other source, being on the higher side gives a number of 1,056,747 households with a population of 6,869,856 persons. To be on the safe side, though possibly understating the problem considerably, we will here take the lower figure of 419,000 households with the population of 2,723,500 persons being without land. Now, if we further assume a participation rate of only 25 per cent for the landowners and 33.3 per cent for the landless agricultural population, we get:

Agricultural labor with land 25% (8170500)	=	2,042,625 persons
Agricultural labor without land (2723500)	=	907,500 persons
Total Labor Force (with a 27% participation rate)	=	2,950,125 persons

As we can see, the number of agricultural labor as with land would be roughly 2,042,625 persons, while that of landless labourers is 907,500, giving a total of 2,950,125 persons, which is very close to the official figure of 2,942,000.

It is among these landless agricultural laborers that unemployment and underemployment may exist in their most open form in rural areas. But this is not the only group of laborers suffering from problems of underemployment and unemployment. From studies made in the villages of developing countries similar to Afghanistan, there is evidence that the size of agricultural households increases with the size of their holdings, and that demand for employment outside the holding tends to increase as the size of holding becomes smaller. However, it is difficult to make a clear cut distinction, since some members who might offer themselves for employment outside are also partly self-employed. In general, from the data on the size distribution of holdings given in Table 7 below, it can be seen that 42 per cent of the land owners have holdings of less than 1 acre, and they fall in the range within which, in terms of employment and income, the demand may be greater for outside employment; hence their working members could be considered, alongwith the totally landless, as agricultural laborers rather than self-cultivators.

TABLE 7

PERCENTAGE OF RURAL HOUSEHOLDS WITH LAND BELOW SPECIFIED SIZE, AFGHANISTAN

Specified Size of Holdings		Number of Landowners		
Jerib	Acre	Number (000)	% of Total	Cumulative %
(1)	(2)	(3)	(4)	(5)
2	0.96	258	41.6	41.6
3 - 20	1. 4 - 9.6	265	42.9	84.5
21 - 30	10. 5 - 14.4	32	5.2	89.7
31 - 50	14. 8 - 23.9	25.2	4.2	93.9
51 - 100	24. 4 - 47.8	23	3.7	97.6
101- 500	48. 3 - 239.0	14	2.2	99.8
500+	239+	1	0.2	100.0
		619.		

continued...

Source: (1) and (3) Royal Government of Afghanistan, Ministry of Information and Culture: "Da Afghan Kalany". 1955/56 cited in V.Chupir: Employment in Agriculture of Afghanistan Dec. 1968.

(2), (4) and (5) calculated on the basis of the data. 1 jerib = 0.4784 acre.

Thus, the number of landless agricultural laborers and the land owners with very small holdings (less than one acre) amounts to over 1,165,500 persons. This number would be more dependent on wage employment. They are distributed very unevenly over different regions in Afghanistan, the heaviest concentration seems to be in the east and north-east, while they are more sparce in the centre, north-east, and south-west. Thus, the employment conditions, in busy seasons, vary from a scarcity of labor in some areas to unemployment in others. These regional differences, associated with custom and tradition, limits, among other problems, the application of an important criterion to assess the excess demand for employment, namely the current wage rate. In the absence of trade-union organization in agriculture, one should expect excess demand for employment to be reflected, at least partly, in downward adjustment of the wage rates. A better index to the volume of excess demand for employment would be the amplitude of seasonal variation in wage rates within each region or sub-region. The application of the wage rate may serve as a useful criterion for distinguishing between manpower surplus and unemployment, and it does play an important role for analytical purposes, especially in the models of W. A. Lewis, Ranis and Fei and others, with regards to the assumption of an unlimited supply of labor. But, beside the absence of a perfect labor market, it is very doubtful, for a host of reasons, that the relative level of the wage rate or wage behavior can be used as a very useful criterion for the measurement of the supply of, and demand for, labor, especially in the rural areas of Afghanistan. Not only are there differences in wage rates in different areas, there are also differences in consumption, prices and productivity. Also, it is found that

there is a floor to the wage rate in each region determined by custom, etc., below which it does not fall even when more labor is forthcoming than demanded at that rate, and there is also a ceiling above which it does not go even when the demand increases relative to the supply. Moreover, a part of the agricultural laborers are not free in the sense that they do not possess, or have yielded, the right to accept or reject the conditions and wages offered by the employers. Added to these are the combination of self-employment with wage employment in varying degrees among the small holders, the manner in which work is organized in agriculture in different seasons, the various kinds of contracts (usually oral) and other sociological factors, all limit the meaning and interpretation of data regarding a specific wage level or wage behavior.

The problem of estimating the labor force, employment, and unemployment in the urban sector of the economy is, in some respect, less complicated than in the rural areas. Households as units of production are not so predomirant as in rural areas. The sphere in which households as units of production are more important in the urban areas are in trade and commerce. The participation of woman and children is much less.

Of the total gainfully employed in the urban sector (accounting for about 37.5 per cent of the urban population), about 42 per cent are classified as employees, working on a wage or salary basis, about 51 per cent as self employed workers, and 6 per cent as unpaid family enterprise workers, the remaining 2 per cent being employers.

Three important features of the employment pattern in the urban sector may be pointed out:

1. Though over 44 per cent of the urban force are engaged in mining, manufacturing, and handicrafts, only 5.8 per cent of the total are engaged in organized industries. This represents only 0.8 per cent of the total labor force of the country.

2. Almost 35 per cent of the total urban labor force are engaged in trade, commerce, and services, while

20 per cent is engaged in transport, communication and construction.

3. Nearly 3/4 of those in handicrafts and trade, and 1/4 of those in services are employed in household enterprises.

These features of the employment pattern may indicate that though unemployment is known to be typically an urban phenomenon, underemployment too, though typical of rural areas, exists in this sector.

This leads us to the other important and chronic problem of employment and unemployment in the economy, namely underemployment.

(e) Underemployment in Afghanistan:

The concept of a potential labor surplus, in the sense distinguished above, will include persons economically inactive or semi-active. However, assuming some organizational and technical changes during the course of economic development, they will join the actual labor force.

The conceptual and practical problems of estimating these types of unemployment are much more complicated than those discussed above. We do not need to get involved with the theoretical foundation and historical evolution of the concept.26/ But, in passing, it is worth mentioning that Joan Robinson used to term "disguised unemployment" in 1930's to describe workers in developed countries who accepted inferior occupations as a result of being laid off from industries suffering from a lack of effective demand.27/ She was referring to workers with a low rather than zero marginal productivity. Studies made in the less developed countries in the 1930's and 1940's presented statistical data claiming that a large percentage of the agricultural labor was idle for a substantial period of the year. The 1951 United Nations' report 28/ by a group of experts including W. A. Lewis, T. W. Schultz, and D.R. Gadgil, advanced the definition of disguised unemployment: zero marginal product of labor and

the condition of ceteris paribus, which has been used by H. Leibenstein, Jacob Viner, Rosenstein-Rodan and many others. Nurkse and Lewis later presented another version of disguised unemployment for capital formation.29/ More technically, Eckaus explained the existence of disguised unemployment by limited technical substitutibility of factors of production.30/ Finally, mention should be made of W. J. Mellor who, on a rather different path, argued that disguised unemployment may be related to a deficiency of demand.31/ At the same time concentrated opposition to disguised unemployment came from a number of writers such as Haberler, while some others reversed their earlier position. Nevertheless, the theory still has a strong body of followers.

Basically, I think, the problem is one of definition and measurement with regard to the assumptions behind them. The implication of the limitation of the theses will be discussed in the second paper. Here the notion can be summarized as follows:

In analytical terms it would mean that the problem of employment in underdeveloped economies consists primarily of the accumulation of labor in occupations and in types of work with low or negligible productivity. The amount of land available being more or less fixed, and the rate of capital accumulation and technical change being low, the growth of the population is seen as causing diminishing returns to set in; this forces new entrants at each stage into lines of work with lower and lower productivity, until a point is reached when the absorption of labor by the system reduces its marginal product in many cases to zero or even to a negative figure. The institutional framework of these economies is supposed to permit the absorption of labor to this point and even beyond, their techniques, customs, and conventions adapting themselves to the required extent, and there is, therefore, no open unemployment, but various forms of disguised unemployment.32/

The above summary, however, is a broad picture of the problem. Much depends on the assumption about the institutional forces and sociological factors involved. Nevertheless, in Afghanistan, there is, along with the problem of open unemployment, the problem of underemployment for a much larger number of persons. This becomes more evident from the pattern of employment in the economy: the predominance of households as units of production, especially in agriculture; the social organization built around the joint family and the villages which give each individual his alloted task and share of output; and the growing size of the population and the labor force with relatively inadequate employment opportunities. In Afghanistan there is no firm estimate as yet. Also, as Raj claims, "an estimate of the potential labor surplus can have no meaning, however, except in a clearly defined context. The nature of the sanctions behind the norms fixed for hours of work, the political and social forces set in motion to draw out both male and female labor, and the precise changes in organization and techniques, that are considered to be feasible at a given moment of time, can each make a considerable difference to the surplus that actually might emerge".33/

However, some methods have been proposed to measure underemployment,34/ but nearly all of them aim at the problem only in the agricultural sector, while ignoring the dynamic aspects of the problem because their assumptions are based on a fixed technology, and a given type of cultivation, etc. On the contrary, planning is concerned with the size and nature of the problem emerging as a consequence of social, technological, and economic changes during the course of development. Even with its static nature, the application of the methods are limited in the case of Afghanistan. The problems posed by households in which it is difficult to know the desire and willingness for more gainful work, what makes for gainful work itself, and what is the minimum earning; are all questions to which there can be no satisfactory answers.35/ Moreover, since income accrues to an agricultural household in bulk once or twice a year, it is difficult to correlate work done with earnings obtained during a

reference period. The case of the unpaid helper, attached labor, and the customary hiring procedures, all affect the measurement of underemployment.

From the official sources, it can be argued that there is a chronic problems of underemployment among agricultural laborers and those operating land below 1 acre and even up to 5 acres. Agricultural laborers are employed for only 50-150 days a year. Thus, it could be estimated that over 2 million persons who suffer seriously from partial unemployment could be employed for 3 to 5 months a year or more. Even a large number of persons that are employed do not suffer so much from unemployment as from low earnings. For example, net cash income from farming, ranging from Afs. 1100 to 5000 36/ for a household of six members, indicates a per capita cash income of Afs. 183 to Afs. 833 per annum (about $2.5 to $11 p.a.). In this respect, agriculture is characterized not only by chronic underemployment but is also, bearing in mind the domestic services and petty traders, the least renumerative of all occupations for the small holders.37/

Underemployment also exists, in varying degrees, in the urban sectors of the Afghan economy: among the households, especially among the categories of persons such as petty traders, casual workers, domestic servants, housewives, etc., who can be expected to seek entrance into the labor market, assuming some economic and social changes. Underemployment also exist among the civil servants with over staffed agencies and departments.

III. EMPLOYMENT, ECONOMIC DEVELOPMENT AND TECHNOLOGICAL CHANGE IN AFGHANISTAN

In the light of the considerations presented in section II and from what follows in this part, it appears that the approach to the problems of employment in an underdeveloped country like Afghanistan should be based on three broad considerations:

Firstly, the objectives and policies should take

into account the three sources of labor supply, namely, the net addition to the labor force as a result of population growth, the possible overflow of those with low or zero marginal productivity, and the backlog of unemployment that already exists.

Secondly, to balance the demand for labor with the increase in supply in such a way that the supply of labor forthcoming from all the three sources mentioned, is consistent with the rate of absorption.

Thirdly, and more important, that the rate of capital accumulation, technological change, and population growth are intimately connected with the problems of employment.

As we shall see, not only the availability of surplus labor alone, but more so, the availability of other supplementary resources such as: capital, foreign exchange, land, wage-goods, managerial and administrative skills and capabilities, etc.,determine the decisions to be made and the amount of labor that can actually be utilized. It is true that unemployment ranks high among social problems, but if maximization of employment is regarded as the main objective of planning in the short run, this may, under certain circumstances, conflict with the conditions essential for higher rates of economic growth or with welfare maximization in the long run. The factors responsible for such possible conflicts and their implications in terms of employment and other economic aims will be discussed in this paper.

Within this framework an attempt will be made to investigate the different aspects of the problem of employment in the economy of Afghanistan.

Table 8 below shows that the labor force of Afghanistan increased by over one million during 1335-1350 (1956/57-1971/72), the period of the first three Five-Year Plans, or on average, about 75,000 a year.

TABLE 8

RATE OF GROWTH OF POPULATION AND LABOR FORCE
AFGHANISTAN 1335-50 (1956/57-1971/72)

Year	Population (Million)	Half-Decade Rate of Growth (%)	Labor Force (thousand)	Half-Decade Increase (000)
1335 (1956/57)	10.175	-	3141	-
1340 (1961/62)	11.00	8.1	3438	297
1345 (1966/67)	12.35	12.2	3800	362
1350 (1971/72)	13.85	12.2	4250	450
TOTAL:	3.675	32.5	1109	1109

If it had been a policy objective to avoid further unemployment and reduce current unemployment and underemployment, then increased employment opportunities would have had to be provided at a minimum rate of about 100,000 new jobs each year. But such an objective was not the official policy. Nine of the three plans so far stressed an explicit approach to the problems of unemployment and underemployment. A large expansion of employment opportunities was, however, stated to be the objective of each plan. But, as we shall see, none of the three plans were employment oriented.

Under the present approach and within the objectives, priorities, and policies of the Afghan plans, the employment problem seems to be growing in size. To eliminate, or at least to cut down the backlog of unemployment and underemployment, it would appear, (as we shall see) that there is a need for changes in the official policies. There are different views on the kind of change that might seem reasonable for an approach to the problems of employment. I will briefly discuss two main arguments on the issue, with particular emphasis on the problems and prospects of increased employment opportunities in different sectors of the Afghan Economy:

(i) the view which is long-run oriented and mainly follows the models of economic development formulated in the 1950's and early 1960's by W.A. Lewis (1), Ranis and Fei (2), etc., which explicitly provides for a shift of population from the traditional to the modern sectors of the economy, namely from the agricultural to the non-agricultural sectors.

(ii) The second view, that with the existing rate of growth of population and capital formation in underdeveloped countries like Afghanistan, the net demand for labor by the non-agricultural sectors is likely to be zero for another decade or so. Since non-agricultural sectors can provide their own labor, even with a margin of surplus as we have already discussed, and the migration of rural labor will only add to the numbers of urban unemployed and underemployed persons, agriculture during this intermediate period must hold its labor. Therefore, policies should aim to use surplus agricultural labor productively within agriculture and in the rural areas.

Official policies in Afghanistan, however, are not so clear. They differed to some extent in each plan and in practice tried to adopt a mixture of both of the above views.

Here an attempt will be made to examine both the arguments with special reference to the policies adopted in Afghanistan and to consider the relevance and implication of these thesis. From an analysis of these issues and other alternatives, some policy recommendation will be made.

(a) Employment Problems and Prospects in Non-agricultural Sectors:

For the first line of argument - i.e., on the shift of agricultural population to non-agricultural sectors - there are, broadly speaking, two closely related theses:

(i) Unemployment that manifests itself in underdeveloped economies, whether open or disguised, is not due to a deficiency of demand, as is the case in the more developed economies, but is attributable to the inelasticities on the supply side of production. Smallness of factor markets, it is conceded, does act as a brake on expansion, but this, it is pointed out, can be remedied only by higher productivity which would increase the supply of factors along with the demand for them. What is needed, therefore, is a simulteneous expansion of demand and supply. This in turn would require, in Nurkse's view, a more or less synchronized application of capital to a wide range of industries, as well as bulk investment for creating public overhead facilities 38/ - i.e., a Big Push to take the economy out of the low level trap and to break the supply ridigities leading to a Balanced Growth.39/

(ii) The other related thesis is that the existence of disguised unemployment in these economies provides in itself a large saving and investment potential. Their utilization and absorption by the modern sector, especially in capital construction, will promote development and their contribution to the total output will be either a net addition, as in the case of Nurkse, or with little additional costs, as in the case of Arthur Lewis, Ranis and Fei.

There is no need to go through the theoretical aspects of these theses, 40/ some account will be taken of the related assumptions and their relevance to the Afghan economy. But, in either thesis, particularly the first one, the scope for widening employment opportunities depends on the possibility of substantially raising the volume of investment, accompanied with organizational changes. For, it is suggested that the expansion of employment opportunities in underdeveloped countries has to start with the creation of direct employment 41/ - i.e., with investment based on the use of unutilized labor. The larger the possibility of absorbing idle labor into capital

construction the higher would be the rate of investment initiated and the greater the scope for increasing indirect employment.

In Afghanistan the planning authorities felt that in the short-run unemployment, particularly underemployment, is a structural problem of the economy, and, therefore, the major solution to the problem is through larger investments to increase employment opportunities. In the Third Plan it was stated that, ".....with the upgrading of skills, the productivity of workers in the important industrial fields will be increased between 5 to 10 per cent .....the establishment of a number of agricultural and irrigation, power generation (and) other new construction .....not only will help in reemployment of a number of workers who will be jobless after the completion of a number of carry over projects, but also will provide employment opportunities for the remaining workers". 42/

However, from the performance of the economy during the first three plans, it seems doubtful that the implicit employment objectives have been achieved; with increased public investment (see Table 9 below) the number of unemployed and underemployed persons has also been growing.

The extent to which employment opportunities can be created depends not only on the volume of investment, but more on the pattern of investment, its allocation, the choice of technology and product, institutional and organizational factors and, above all, on the general objectives behind them. The primary objective of Afghan planning, implicit in the First and Second Plans, but stated more explicitly in the Third Plan, is the aim of a "self-reliant" economy. The Third Plan, in the first of its nine goals, stated that a rapid increase of production, especially in agriculture to raise additional foodstuffs, and in industry for consumer and capital items, will result in increased national income, increased level of employment, and progress towards the ultimate goals of economic independence and self-sufficiency. 43/ With

these aims, the volume of investment in the Second Plan was raised to almost two and a half times that of the first, while the original Third Plan target was three times the First Plan's (the volume of actual investment in the Third Plan, however, may not be much different than that of the Second Plan). But as far as the main strategy of the Plans is concerned, Afghanistan, at least in the first two Plans, laid particular emphasis on the development of infrastructure and industry. Transport and communication alone counted for 49.5 per cent and 38.5 per cent, respectively, of total public investment in the First and Second Plans. But in the Third Plan, due to the completion of a number of major infrastructure projects and a shift of policy towards more direct and quick-yielding projects, the share of transport and communication fell to 15.5 per cent. Agriculture (including irrigation) shared 31.4 per cent of the total in the Third Plan, as compared with less than 20 per cent in the previous plans. The share of industry and power was raised sharply from 26 per cent in the First, to 34 per cent in the Second, and 41 per cent in the Third Plan.

Therefore, increased employment opportunities would be expected initially in the non-agricultural sectors, since these sectors counted for the major part of the investment so far. Although the overall increase in industrial production, representing mainly organized and factory industries, has been at least over 7 per cent per year, the increase in output of major industries such as power, cement, etc., has been more than 15 per cent per annum (excluding the last two years). But the extent of increased employment opportunities offered by this sector has been distinctly limited. Out of the total urban labor force only about 5.8 per cent or less than 1 per cent of the labor force of the country, are engaged in this sector. The employment opportunities created in this sector during the period 1961/62-1966/67 were only about 4000 new jobs. Employment in transport, communication, mining, and industry (excluding handicrafts), during the Second Plan has been estimated at only about 35,000, or only about 7,000 jobs per annum. This figure is not only about 4 per cent of the net increase in urban labor force, but also disguises a major problem of open unemployment as a result of the temporary nature of employment opportunities

that were created for about 30,000 persons who became jobless upon the completion of the major construction projects.

TABLE 9

DEVELOPMENT EXPENDITURES, AFGHANISTAN 1956-1972

Year	Amount (million Afs.)	% of the First Plan
First Plan:	10500.	100.
1956/57	1326.	
1957/58	1269.	
1958/59	1617.	
1959/60	2012.	
1960/61	4276.	
Second Plan:	23500.	238.
1962/63	4588.	
1963/64	4743.	
1964/65	4969.	
1965/66	5429.	
1966/67	5171.	
Third Plan: (original target)	33000.	314.
Third Plan: (revised)	28300.	269.5
1967/68	4883.e	
1968/69	4809.b	
1969/70	5861.	
1970/71	6170.p	
1971/72	7800.p	

Source: For 1956/67-1960/61 see "Survey of Progress 1961/62", Kabul 1963. For other years, see Third Plan Document, and annual issues of Survey of Progress

(e) estimated
(b) budget
(p) projected

TABLE 10

SECTORAL DISTRIBUTION OF DEVELOPMENT EXPENDITURE

(billion Afs.)

Sectors	First Plan Amount	First Plan %	Second Plan Amount	Second Plan %	Third Plan Amount	Third Plan %
Agric. & Irrigation	1.4	13.2	4.4	17.6	8.9	31.4
Mining, Industry, Pow.	2.7	26.0	8.5	34.0	11.6	41.0
Transport & Communica.	5.2	49.5	9.6	38.4	4.4	15.5
Social Services, etc.	1.2	11.3	2.5	10.0	3.4	12.0
TOTAL:	10.5	100.0	25.0	100.0	28.3	100.0

The main strategy of the First and Second Plans, as well as that of the Third Plan, could not serve, in the short-run, to ameliorate the employment problems of the country. As already mentioned, the logic of this policy was implicity stated to be: that by overcoming the structural problems, facilitating foreign exchange earning, and laying the basis for future development employment opportunities over the longer run will be increased with higher output and productivity. With this longer-run consideration the planning authorities, however, did suggest the need for some kind of supplementary employment promotion in the consumer goods industries and handicrafts. The Second and Third Plans stated that "due to the expansion of socio-economic programs more jobs will be available for workers at various levels .....the development of traditional cottage industries, with small amounts of investment, will provide working opportunities for a large number of people and reduce seasonal unemployment. It also plays an important role in the country's volume of exports and in meeting local needs. Therefore, the development of traditional cottage industry is an important part of the plan. Efforts will be made to improve cottage industries by providing proper working tools and training industrial workers". 45/

Thus, the principal supplementary to the problem of employment (and production of consumer goods) which the planning authorities sought, beside agriculture and services, was that of cottage and other small-scale industries. Implicit in the Third Plan's claim is the argument that small-scale and cottage industries provide immediate large-scale employment, makes for a more equitable distribution of national income, mobilizing idle resources, and helps to avoid a large migration of the rural population creating unplanned urbanization problems.

Before examining these arguments it should be mentioned that despite the considerable efforts and emphasis devoted to infrastructure and industry during the last fifteen years, Afghanistan, at the present stage of economic development, still remains a country of small-scale production. Out of the 234,000 persons engaged in all types of industries in 1966/67, small-scale and handicrafts counted for over 200,000 44/, and over 70 per cent of those engaged in all industrial production. Carpet making alone employed over 100,000 persons 45/ or four times more than all organized industries (including mining). But this important relative position does not necessarily mean that Afghanistan should concentrate on expansion and promotion of these small industries. This will become evident from the examination of the arguments mentioned above.

In examining the arguments in support of small scale and handicrafts industries in Afghanistan, we have to make a distinction between the so-called traditional handicraft and cottage industries, and the modern type. The former, being largely rural and village centered using traditional method, are labour intensive, while the latter are largely urban industries using techniques of production more or less similar to those employed by large-scale and organized industries in the developed countries. Keeping this distinction in mind, I will first examine modern small scale industries with regard to employment, and then the traditional type of small scale and cottage industries.

The argument that small industries maximize total

employment and total output, assumes that these industries favor high labor-capital ratios. In Afghanistan, as far as I know, no satisfactory study has been made to examine this thesis. On the basis of inferences from studies made in other developing countries. it has been observed that in general small modern industries might use more labor in terms of hours of work but they also use more capital in terms of output, especially when we take working capital into account.46/ Counting the number of employment opportunities that these industries might provide, without regard to efficiency or output, is not very meaningful.

Moreover, because the argument runs on the choice between small scale and large scale industries in terms of employment alone, it is static in nature. The issue is not simply one of matching techniques with the available resources so that total employment (and output, though not necessarily) could be maximized, without regard to exportability of, or domestic demand for the resulting product or the longer-run consideration of the pattern of the economy. In the case of Afghanistan, besides the limitation imposed by the insubstitutibility of labor for capital, the range of choice is restricted, because of foreign exchange considerations and structural imbalances, to a comparatively fixed commodity pattern and development effort. In the fields where choices exist, at the wage rate prevalent in Afghanistan, there might be an economic case for labor intensive techniques, but it depends on what the decisive criteria are: the output, the output coefficient, or the rate of surplus. There might be techniques with low capital-labor and capital-output ratios, but for purposes of export and competition in foreign market, or because of the restrictions in foreign aid, techniques might be adopted that are inconsistent with the availability of the factors of production in the country. Moreover, the rationale of choice of small-scale or large industry, with relation to employment and economic development, depends not only on the increase in output but also on the rate of capital formation. Therefore, if the increase in output is entirely consumed by the producers and their dependents, or there is little or no surplus, the increase in employment opportunities may not contribute to the process of development. In this regard, it could be claimed that the choice of a

program for promoting small-sized industries not only made little contribution to the national product, but also that expansion had to be engineered without regard to efficiency and competition, through government subsidies, exemptions, and other promotional devices.

The rationale of the Second and Third Plans emphasis on small scale and cottage industries was based on the assumption that their expansion has the virtue of reducing local and regional inequities and dualism and mobilizes rural idle resources. This view does not apply to small modern industries. As already mentioned, the small modern industries and handicrafts, by definition, and in reality, are located in the urban areas. Aside from the political and social considerations, the basic obstacle to the development of a progressive village-industry is simply one of the scale of production and the pattern of future demand. In the long run, the villages of 500 or even three thousand persons can not provide an adequate market to support moderately complex retailing for consumer services operations. Nor can the villages supply the necessary labor, financial, and business services. Therefore, on a variety of accounts, it makes no sense to claim that villages in Afghanistan, at the present, can offer an economic setting for modern small scale industries. Metropolitian centered industries, on the other hand, are not only feasible but natural. It has been the pattern of development in the past, and it has been the dominant pattern of Afghanistan's industrial location to date. This can be explained by the conventional emphasis on external economies or by Myrdall's polerization or Hirschman's backwash effects.

In any event the industrial location decision is determined by a variety of economic, geographical, technological, and socio-political factors. But as far as this paper is concerned, there is a scope for establishing a range of industries, particularly agro-industries, in some middle-geographical demographic unit between the village and the metropolitan centers. Among such industries, food processing might have the best opportunity.

In Afghanistan, however, the industries chosen for

development in the first three Plans, in some cases, were not only unattractive from the employment point of view but their expansion has resulted in frittering away of resources which could have been used for more productive purposes. Even now, to make the established industries more competitive and efficient, the program should take the form of removing their inefficiencies rather than of giving them special favors such as preferences, subsidies, reserved markets, and the like. But to benefit from the technical advantages, they must be of a medium rather than a small size.

The case for cottage and traditional small industries, especially when coupled with decentralization and resource arguments, and supported by social and cultural factors, becomes desirable when we realize that no other productive employment opportunities are available in the towns and that the migration of rural labor to urban centers will only create further problems. But, even in such cases one has to choose between different opportunities, even within the rural areas. However, the pattern of demand in rural Afghanistan, especially in the villages, is such that there is scope for the expansion of certain kinds of output. But, the products of existing cottage industries, except a few, are of such a quality that they cannot compete with factory products in the market. In the long-run there will be a shift of demand away from these inferior products. Therefore, excluding some major export items, new investment for the expansion of traditional cottage industry products will be a misallocation of resources.

In the light of the above considerations it appears that the industrial sector of the economy, especially the organized industry sector, despite its relatively rapid progress, made little direct contribution to the creation of employment opportunities. The emphasis on small scale and traditional industries as a major source of employment, was rather unrealistic. They not only contributed very little to output and employment, but their expansion involved a transfer of other resources, subsidies, and other promotional devices, that could have been used in more productive fields. In many cases, their products were non-competitive, and most of them work substantially below capacity.

In other non-agricultural sectors of the economy, namely transport, communication, trade and services, the planning authorities hoped that with the progress of socio-economic programs the prospect of employment opportunities would increase for a large number of workers. In reality, these sectors, in 1966/67, counted for 7.8 per cent of the labor force and 35 per cent of GDP. They are claimed to have provided over 90 per cent of the net addition to employment and are projected to cover over 70 per cent of the planned employment opportunities in the urban areas during 1966/67-1971/72.

But, as already discussed in the first paper, the pattern of employment in these sectors, and the experience of the last 15 years indicate that the prospects for a rapid increase in employment opportunities in these sectors seems doubtful. With regard to employment in transport, in addition to the temporary nature of employment that was created during the First and Second Plan, it should be noted that mechanical transport has not yet displaced animal and human transport . It appears that the extent to which this sector could provide new employment opportunities depends partly on the difference between the newly employed and those unemployed (including animal power) by techno-logical change, and the expansion of transport services.

With regard to trade and commerce, an important feature is their overcrowded and concentrated character in the cities. Trading may give increased opportunities for employment with increases in the urban population and physical output; but it is unlikely that this will be a more than proportionate increase. Also, trading and services are closely connected with increases in the standard of living. Hence, in an economy in which the general standard of living and real income is not increasing rapidly, the scope for increased employment opportunities are very narrow.

Moreover, as already mentioned, at the present there are a large number of persons who are presently underemployed, but assuming some social and economic changes, they will join the labor force.

Taking the non-agricultural sectors of the economy as a whole, we can conclude that during the last ten years these sectors were unable to provide productive employment opportunities for the net increase in the urban labor force. This implies that, with the present progress and performance of the economy, the non-agricultural sector as a whole, and the industrial sector in particular, is unlikely to provide for the full-employment of the urban labor force, and hence be unable to provide for a shift of population productively from the agricultural sector. Therefore, agriculture continues to remain the most important sector of the economy with regard to both income and employment. Development programs in the last ten to 12 years have made comparatively little difference to the picture. In the long-run, if economic progress is achieved, the sectoral transfer of labor from agriculture to non-agriculture ought to follow, but the problem now is one of the short-run or the intermediate period, during which agriculture must keep its population within that sector to avoid increasing migration to urban areas and to prevent unemployment and underemployment from increasing in the cities.

In what follows an attempt has been made to study and examine the problems and prospects of increased employment opportunities in the agricultural sector.

(b) Problems and Prospects of Employment in Agriculture:

The considerations outlined above and the conclusion that the agricultural population and the surplus labor in that sector must not be transferred to the non-agricultural sector for a number of years to come, implies that employment opportunities for presently unemployed and underemployed labor and the net addition to the agricultural labor force, should be created within this sector. But, this sector, while keeping its surplus labor, still has to play a crucial role in providing other surpluses in the shape of food, raw material, foreign exchange, and other financial and investible surpluses for the economy. Thus, the problem is threefold:

i) creation of employment opportunities for the surplus labor within agriculture, such as to

ii) create surpluses beyond and above its own need, therefore, from the economic development point of view the policy should take into consideration the

iii) means and ways of transferring the surpluses so created to other sectors.

Often it has been argued, especially at the official level, that the agricultural unemployed and underemployed labor should be put to work in rural capital formation. They argue that there is an almost limitless need for irrigation, ditching, bunding and well digging, for rural road construction, grain houses, schools, for developing public work facilities, and for any number of other labor intensive construction projects that have little need for scarce material and virtually none for imports.

In general one would agree with this view. In practice, though limited in size and performance, the Afghan rural development and regional development programs did pay special attention to these types of projects over since the First Plan. The competition of such projects over the longer run might also increase agricultural output and productivity. But this view, particularly if judged in the short-run, overlooks the problem of acquiring surpluses required for undertaking these rural construction projects.

The thesis of Nurkse, and to some extent that of Arthur Lewis and Ranis and Fei, rests on the assumption that since idle labor was subsisting any way with a marginal productivity of zero and adding nothing to total output, they can be put to work for the purpose of capital formation without any significant net increase in consumer demand. In their view, if only the food previously consumed by these unproductive workers could be transferred to their new location and made available to them, the most serious impediment to growth would be got out of the way.

The limits of the potential surplus in the Nurksian strategy have been discussed by numerous writers. Such a strategy involves various technological and institutional factors, all of which have raised complicated questions. The main outcome of the controversy, as far as this paper is concerned, is that if the mobilization of idle labor into capital formation leads to a considerably increased consumption on the part of those directly or indirectly benefiting from the increased employment, its use obviously becomes conditional, not only on the possibility of bringing about the required redistribution of available supplies, but also on the capacity to generate and transfer more surpluses. Further, such a strategy depends on a number of technical, organizational, and institutional factors and the political set up. These factors may determine both the type of projects that can be undertaken with idle labor as well as the extent to which such projects can provide a solution to the problem of employment in Afghanistan.

There are, however, many projects within the framework of the households and the villages that can be done through small schemes, and indeed, very enthusiastic attempts have been made in Afghanistan to exploit these possibilities through the agency of the Rural Development Program. The actual performance was not only limited, but the approach itself has certain limitations. An appeal to family or village loyalities can succeed in mobilizing idle manpower only to the extent that the households and villages have themselves remained closely knit units. Moreover, types of projects that can be undertaken in this way are confined to those construction works that can come within the perspective of the households or villages. Even if the ties and customs are effective, two features of this type of work should be borne in mind: <u>firstly</u>, they can provide additional work only for the seasonally unemployed and underemployed persons for a certain period of the year. If labor is fully occupied at a certain period of the year, then its total withdrawal to non-farm jobs will cause a drop in production. <u>Secondly</u>, these minor projects may not include the landless agricultural labor which, as mentioned in Section II, suffers more from problems of unemployment. Therefore, if the policies aim for the solution of unemployment and low incomes,

they should also look for the remedy beyond the family and village level. In this case, not only has a price to be paid for labor, but also the problem of redistribution of the available means of subsistence has to be solved. It may not be realistic to assume that the saving necessitated by the additional consumption of the newly employed will, or can, be done by the household which previously sheltered the surplus labor. Hence, the scope for increasing the employment opportunities in the short-run as well as in the long-run is tied up with the scope for increasing the output, and particularly the marketable surplus of consumer goods, basically food. This condition is stronger in a country like Afghanistan where the income elasticity of demand for food is high, ranging from 0.6 to 0.8 47/, and much higher among low income classes. The population is growing relatively fast - above 2% p.a. (see Table 11), and a large number of the population are undernourished (see Table 11 below), which implies that increased consumption is needed, not only for physical requirements, but also with important implications for labor productivity. 48/

Therefore the food supply must increase fast enough to meet, at least, the combined effects of the growth of population and of income. Since food, in the early stages of economic development, is a wage-good, and industry depends on other agricultural surpluses, unless agriculture responds adequately, industrial growth and the whole development process may be jeopardized. Such tendencies were prevailing in Afghanistan, especially in the last year of the Second and early years of the Third Plan. As can be seen from Table 11 below, despite the increases in imports of food, and despite the increase in production, though not steady, the per capita availability of foodgrain, ignoring the pattern of distribution, did not show and improvement. The National price index, in general, and food prices, in particular, rose, especially in 1966/67 and 1967/68 which were the years of relatively poor harvests. A more steady rise in the prices of wheat, the major food item, is observable till two years ago. These price rises took place despite the fact that some policy measures were

taken, especially towards the end of the Second Plan, to check price rises in general and food prices in particular. But due to a number of social, economic and administrative problems, these policies were not only ineffective, but also, during good harvest years, the authorities failed to draw off the surpluses that would have been available for development purposes.

TABLE 11

FOODGRAIN PRODUCTION, WHEAT SUPPLY AND CONSUMPTION, PRICE INDEX, AFGHANISTAN

	1341 1962/63	1342 1963/64	1343 1964/65	1344 1965/66
		(thousand tons)		
Food Grains:				
Wheat	2279	1947	2250	2282
Corn	700	713	720	720
Barley	378	378	380	380
Rice	319	319	325	325
Total	3676	3357	3675	3707
Wheat Production	2279	1947	2250	2282
Wheat Import	9	35	120	95
Inventory	0	0	0	43
Total Supply	2288	1982	2370	2420
Minus seeding, waste and inventory	518	486	560	557
Total Available for Consumption	1770	1496	1810	1863
Population (median estimate) (million)	11.1	11.4	11.7	12.0
Per capita consumption(kgs)	159	131	155	155
General Price Index (1340-100)	1	132.2	156.1	170.5
Cereals		143.5	173.4	186.5
Wheat (Afs/seer)	19	29	34	41

continued...

	1345 1966/67	1346 1967/68	1347 1968/69	1348 1969/70
		(thousand tons)		
Food Grains:				
Wheat	2033	2241	2354	
Corn	720	766	773	
Barley	375	357	361	
Rice	337	396	402	
Total	3465	3760	3890	
Wheat Production	2033	2400*	2760*	2779**
Wheat Import	116	144	40	70
Inventory	37	0	20	40
Total Supply	2186	2544	2820	2889
Minus seeding, waste and inventory	500	563	618	629
Total Available for Consumption	1686	1981	2202	2260
Population (median estimate) (million)	12.3	12.6	12.9	13.2
Per capita consumption(kgs)	137	157	170	171
General Price Index (1340-100)	214.1	364.2	208.3	
Cereals	246.7	336.0	233.7	
Wheat (Afs/seer)	47	61	41	

* New series ** Projected

Source: Ministry of Planning, Kabul, Afghanistan.

The implication of the above discussion is that the growth of industry, employment, and the performance of the economy as a whole, depend to a large extent on the progress in the agricultural sector.

For the problem of food supply as well as the creation of employment opportunities, it could be argued that there are prospects and possibilities of putting the agricultural

and rural unemployed and underemployed to work directly on the farms. There is a wide scope in most areas and for most crops if the mode of cultivation could be a bit more intensive and effective than it is now. Moreover, there is a wide scope for bringing new land under cultivation. Output and employment can both be increased, either by improved techniques of production on land already under cultivation, or by extension to new land. Afghanistan's geographic characteristics and her technological level make it imperative not to rely on one of the two strategies alone. Attempts have in fact been made to adopt both, with more emphasis on the extension to new land under cultivation. However, there are numerous technological, institutional, and economic problems to be tackled in either strategy, but the extent of increase in agricultural output will depend mainly, especially if considered in the long run, on the ability to increase productivity.

The question of which factor's productivity, land, labor or capital - has to be given more priority, raises complicated and unsettled arguments in theory as well as in practice. But in either case, it would be desirable to increase total output associated with the increased employment opportunities.

In reality the average yield per acre for many major crops in Afghanistan is low, indicating that there is a wide scope, technically, to increase output and productivity (Table 12).

The extent to which technical inputs can raise output and productivity and absorb more labor input, depends on institutional and organizational factors. It is necessary to consider any proposal for increasing output and employment in agriculture in the light of its technical feasibility, economic desirability and institutional compatibility.

TABLE 12

YIELD OF SELECTED MAJOR CROPS, 100 KG./HECTARES

Country	Wheat	Rice
Afghanistan	11.0	19.0
India	7.8	15.2
USSR	10.8	
USA	17.6	
Japan		48.6
Burma		16.2
Australia		61.1
Denmark	39.0	

Source: For Afghanistan see, "Survey of Progress", 1968/69
For other countries see, UN, FAO, Agricultural Commodity Projections for 1972.

With this view, it is worth mentioning that the possibility of large scale mechanization of agriculture looks less attractive and even undersirable, at least in the short-run. However, it has been argued 49/ that mechanization of agriculture has important longer-run social benefits and external economies, and the initial unemployment will, they argue, be neutralized by several new classes of employment (to make, to manage, to repair machines and to supply or distribute the spares, etc.). But, whether from the point of view of the opportunity cost of factors 50/, or from the view of aiming to improve both the productivity of land and labor rather than units of labor, or from the consideration that capital and foreign exchange are already the bottlenecks; or considering that underemployment and unemployment already exist in agriculture, or from the point of view of the general poverty of the peasants, and other institutional problems, the large scale mechanization of agriculture in the short-run looks unattractive and un-

desirable. At the same time one must consider the different stages of mechanization. Better implements for lining, hoeing, weeding, etc., or the simple replacement of the wooden edge of plough by steel, or the lately developed Ariana ploughing machine, all admit the need for considerable improvement. They are not labor-saving either, and they will increase the productivity of land and use more labor.

Although more intensive use of the labor input alone can increase output, the maximum result is obtainable only by a combination of labor and other technical inputs. Thus, any technological improvement in agriculture, at the present stage of economic development of Afghanistan, should be labor-intensive in content, but it is also necessary to make more intensive use of other technical inputs, such as fertilizers, new and better seeds, better implements, more and continuous supply of water, etc. The wheat program of the Ministry of Agriculture and Irrigation has proved that output could be increased by more than 100 per cent by a proper proportioning and combination of such factors, hence the increased labor input associated with increases in output and productivity. Various experiments prove that improved methods of cultivation and the use of small tractors can increase output up to three times, 51/ and increase employment considerably. The implication of these experiments may be that while these methods of cultivation have a strong recommendation in Afghanistan, the supply of other inputs, especially the non-traditional types of inputs, such as fertilizers, better seeds, fuller and more effective use of irrigation and water resources, must come in adequate quantities along with the labor input.

From the above consideration, and other evidences, it could be concluded that the situation for increasing output and employment in the agriculture of Afghanistan is technically hopeful. But, technologically hopeful does not mean that it is easy, especially in the Afghan case. The application and success of technological inputs will depend, in turn on the institutional and organizational and administrative factors, on adequate supply of labor actually to be

put in, on getting thousands of cultivators to do things rather differently, to make them work harder, adopt new practices, and market their surplus. The very multiplicity of variables in an average cultivators situation makes him less responsive. His natural conservatism, in general, and in poor agriculture in particular, is compounded by the fact that in his realm he is risking his families subsistence when he responds. The cultivator wants to be sure of being remunerated enough from the benefits of the response. Afghan cultivator families, in general, live in a socio-cultural environment that lacks incentives and security, adequate marketing and transport facilities and financial institutions. In other words, it is an environment that rewards less and allows the cultivators to be exploited by non-cultivating landlords and money lenders or other intermediaries, and thus offers him little incentives to improve land and care more. Then there is the obvious problem of very small and scattered holdings and over 20,000, mostly isolated, villages. 52/

In this situation it seems unlikely that technological inputs will have the desired effects on both, increasing output and employment unless institutional and organizational bottlenecks are removed. In addition to these problems, though there were certainly supply shortages of some inputs, there are also evidences of under-utilization of irrigation facilities and difficulties in disposing of even the limited quantities of fertilizers and better seeds that have been supplied, even with government subsidized prices.

The above discussion indicates that there is a relatively wide scope for increasing employment and output in the agricultural sector of the economy, mainly through labor intensive techniques. The extent to which this could be done depends, to a large extent, on institutional and organizational factors. Technologically, given that an adequate supply of inputs is provided, output can be increased considerably. This increased output cannot only be associated with increased employment opportunities directly, but will also, by creating surpluses, assuming that appropriate measures are taken to transfer the surpluses, help in the expansion

and creation of more jobs in other non-agricultural occupations. But, as has been observed, even with the limited supplies of new inputs, the main problems faced were institutional and organizational. Therefore, along with the technological improvements, there should be measures and programs to remove the obstacles that have their roots in the institutional, organizational and administrative environments.

IV. SUMMARY AND CONCLUSIONS

The use of concepts such as employed, unemployed, seeking work, and labor force, in the usual sense of the terms, are not quite meaningful in the Afghan context, especially in the rural areas.

The data collected for measurement of employment, unemployment and labor force are very limited in their scope and coverage. The flow of information has, however, increased considerably in the last ten years or so, but its coverage and accuracy is still unsatisfactory. Therefore, the data available in this regard can give no more than a very broad picture.

Nevertheless, in the light of the considerations that followed, broadly speaking the following problems are identifiable:

1. There is the problem of open unemployment among nearly 3 million people classified as the agricultural labor force, especially among 419,000 landless agricultural households and 258,000 cultivators with holdings less than one acre. The rural labor force, even at a rate of less than 2 per cent per annum, has increased by 273,000 persons during 1961/62-1966/67, and might increase by another 330 thousand during 1966/67-1971/72. Against this the employment opportunities to be created during 1966/67-1971/72 were planned to be around 160,000 jobs.

Assuming that this figure will materialize, and also another 90 thousand employment opportunities will be created in other rural works (livestock, food processing, etc.) there will still be at least 80,000 persons left without jobs. This number of unemployed persons, though likely to understate the actual, will not only increase unemployment, but with the backing of unemployment and underemployment, will make the problems more serious.

Considering those in the urban areas (whose main occupation is supposed to be seeking work) unemployment among these groups is also likely to increase. The urban labor force, as estimated above, has increased from 419,000 in 1340 (1961/62) to 491,000 in 1966/67, and might increase to 589,000 (555,000 + 34,000 rural migration) in 1350 (1971/72), showing an increase of 72,000 and 98,000, respectively. Thus, the urban labor force seems to increase by at least 170,000 persons in ten years. Against this the official sources claim implicitly that employment opportunities created during the second plan, were about the same size as the increase in the urban labor force. The estimated and projected number of employment opportunities during 1961/62-1971/72 is given below:

	1340-45 1961/62-1966/67	1345-50 1966/67-1971/72
Mining, Industry, Handicrafts	4,000	39,000
Commerce, Transport, Communication and Construction	31,000	81,000
Trade and Services	29,000	25,000
TOTAL	64,000	145,000

However, we have examined these figures in more detail in section III, here, it is worth mentioning that even the figure of 64,000 above falls short of the increase in the labor force by 8,000. The projected employment opportunities of 145,000 during 1966/67-1971/72 not

only seem to be unrealistic, but also assume a rate 2.27 times that of 1961/62-1966/67. On the contrary, the official sources in 1969 are inclined to say that "the problem of unemployment is becoming serious. It is due to the combination of increases in population and the completion of a number of major projects on the one hand, and the stagnant economic condition in the country, on the other." 53/ This reveals another problem of unemployment with regard to the temporary nature of jobs that were created during the First and Second five-year plans. It is estimated that over 30,000 workers that were engaged in infrastructure and construction projects are, or soon will be, without jobs as a result of the completion of these projects.

On the local and regional level the results of the Lashkar Gah survey showed that 75.9 per cent of the total population is economically inactive, only 24.1 per cent being active. Whereas in Kabul, the percentages are 73 and 27, respectively. 54/ In Lashkar Gah over 4.8 per cent of the total working population were unemployed, 3.2 per cent of the total working population were seeking jobs, while in Kabul 5 per cent of the working age group had no job. In Herat, unemployed males were found to comprise over 5.4 per cent of the total male labor force.

Taking into account areas that are short of labor, especially in the busy seasons, and assuming an average rate for the country as a whole, it could be claimed that about 120,000 workers, i.e., 3 per cent of the labor force, are openly unemployed. Given the present economic progress and performance, the number of unemployed persons might increase by the end of the Third Plan (1971/72).

2. There is the emerging problem of unemployed educated persons. Graduates of schools and universities that were usually employed by the Government, but their continued absorption into Government agencies has diminished.

3. Against the problem of surplus unskilled labor there is the severe shortage of skilled labor.

It is estimated that there will be a need for over 9,000 skilled workers during the Third Plan period (1966/67-1971/72). Assuming some additional investment and training, half of the graduates of technical vocational schools, training centers and university graduates — planned at about 3500 persons — could be employed in these jobs. This indicates that there still will be need for 7,250 skilled workers by the end of the Third Plan.

4. There is the unique problem of the country with regard to the nomads. It has been estimated that, at present, their number reaches to over 3 million. They are foot-loose and moving within the country, and create a problem of employment and manpower planning. They also raise a number of social problems. However, in the plans, attempts have been made to make settlement programs for this group, but the actual performance so far has been limited.

5. There is the chronic problem of partial unemployment, especially in agriculture where employment is more seasonal, in some cases accounting for only 50-150 days a year. Thus, there is the problem of underemployment and low productivity of various degrees in the economy. No precise estimates of this type of unemployment have been made, as yet, but it could be argued that it exists in a size and magnitude that is beyond the capacity and capability of the planning authorities to tackle presently.

Thus, although difficult to measure quantitatively, it is important to bear in mind that in Afghanistan, not only the problem of unemployment is growing, but there is also a much larger pool of persons who are underemployed and who can be expected increasingly to seek entrance into the labor market as a consequence of economic, social and technological changes. In this way, it is the essence of economic change and growth that the supply of labor offering

itself for employment will progressively increase — the employment problem grows in size even without population growth. When the rate of capital accumulation, technical, organizational, and social changes, and the growth of population are taken into account, as we shall see in the second part of this paper, and especially when the planning policies aim at increasing the level of productivity and income without having the sufficient means and skills to do it, the problems of employment and unemployment in an underdeveloped country like Afghanistan become increasingly important.

It may not be appropriate to claim that Afghan planning has done little or nothing to mitigate the problems. However, there were mistakes and weaknesses in the policies and the strategies adopted. Historically the planning era has resulted in considerable progress and performance, but they are insignificant relative to the needs and requirements.

Taking into account the growth of population, technical and social changes, and the rate of capital formation, it can be broadly concluded that:

6. One of the main factors in frustrating the income and employment aims in the Afghan Plans was the widening gap between the rate of increase in the labor force and the employment opportunities provided. This in turn has two implications: to aim at higher rates of economic growth, and/or lower rate of growth of population and the labor force.

7. There is no sign of any policy or attitude towards a large scale efforts for family planning and relating the size of the family to income. Even if steps were taken to do so, its effectiveness in the short-run is doubtful. Therefore, the problem of employment will be more serious in the next decade or so than it is now. since more than 40 per cent of the population now below the working age of 15 will continuously enter the working population. Together with its serious employment problem, this will adversely affect

income and output, especially per capita food availability. Such a situation with its serious consequences, implies then that more rigorous programs and policies should be taken to mobilize idle resources and aim at higher rates of economic growth.

8. Based on the present progress and performance of the economy and rate of industrialization gained in the last decade, the above consideration reveals that agriculture, at least in the short-run or even in an intermediate period, must hold its population within that sector. This, in turn, highlights the fact that agriculture now, and for a long time to come, has its crucial role to play in the Afghan economy. Higher rates of growth and increased employment opportunities depend on the performance of this sector.

9. There is a wide technological scope to increase output and employment in agriculture, which would, in turn, require stronger and further efforts to overcome the institutional and organizational problems. Such efforts would also require more efficient and rigorous efforts for plan formulation, administration, and implementation in Afghanistan. The non-coercive and democratic nature of Afghan planning, with the social and political developments in the country, require creation of more incentives and inducements, joint cooperation of people with the Government, and mutual understanding between the people and the Government.

10. The agricultural programs and policies should take full account of (a) the need for expanding opportunities for productive agricultural employment as well as (b) the need for avoiding massive displacement of farmers and agricultural laborers. Such an approach offers the main chance for a satisfactory solution to both the rural and urban employment problems - the former by increasing employment in the country-side and the latter by reducing the level of rural-urban migration.

11. The solution of the urban employment problem will also require as rapid an increase as possible in productive non-agricultural jobs. An important component is employment

in manufacturing and allied activities. To get an optimum growth in such employment will require large additional fixed investments in plant and equipment as well as technical and managerial inputs. These investments can be done in a satisfactory manner, taking account of both quality and quantity of investment and related inputs, only through more efficient and effective financial institutions and policies. In this regard, the establishment and operation of an Industrial Development Bank seems to be essential.

12. To the extent that output and income could be increased in agriculture and surpluses from this sector mobilized, through appropriate measures, to other sectors of the economy, it will help to overcome the scarcities of other supplementary factors that could be utilized along with idle labor for development purposes.

FOOTNOTES

1/ United Nations: The Application of International Standards to Census Data on the Economically Active Population, Population Studies No. 9, 1951; and United Nations: The International Standardization of Labour Statistics, I.L.O., 1959 and subsequent publications.

2/ See K. N. Raj: Employment aspects of Planning in Underdeveloped Countries, (National Bank of Egypt, Fifteenth Anniversary Commemoration Lectures, 1956), also his paper in Economic Development and Cultural Change, 1958/59. Further, for a review and criticisms of the concepts, see Gunnar Myrdal: Asian Drama, Vol.2, Ch. 21.

3/ See Bruno A. Schiro: The Statistical System of Afghanistan, A General Overview with Guidelines for Improvement, May1970, ditto.

4/ Royal Government of Afghanistan, Ministry of Planning: Survey of Progress, 1960 Ibid.

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6/ See Royal Government of Afghanistan, Ministry of Planning: Survey of Progress, 1961-62.

7/ V. Chupir: Population and Manpower Resources of Afghanistan 1345-50, (1966/67-1971/72), Kabul, 1967, ditto. He gives a figure of 13.4 million for 1339.

8/ Ibid. Also see Royal Government of Afghanistan, Ministry of Planning: Population and Agricultural Survey of 500 Villages, Kabul, 1963.

9/ V. Chupir: op.cit.

10/ See Royal Government of Afghanistan, Ministry of Planning: The Second Five Year Economic and Social Plan of Afghanistan 1961/62-1966/67.

11/ See Royal Government of Afghanistan, Ministry of Planning: The Third Five Year Economic and Social Plan of Afghanistan, 1966/67-1971/72, p.179.

12/ Survey of Progress 1968/69, Kabul September 1969 p.2.

13/ Ibid., pp. 59-68.

14/ Royal Government of Afghanistan, Ministry of Planning: Population of Greater Kabul 1965/66, Kabul, March 1968.

15/ Survey of Progress 1968-69, op.cit. pp.38-59.

16/ Ibid., p.2.

17/ Pilot Census of Deh Khodadad 1962, op.cit.

18/ Population and Agricultural Survey of 500 villages, op.cit.

19/ Population of Greater Kabul 1965/66, Kabul 1967. Also see, Survey of Progress 1967/68, Kabul, August 1968; and Survey of Progress 1968/69, op.cit.

20/ See V. Chupir: op.cit. p.4.

21/ Survey of Progress 1968/69, op.cit.36.

22/ see Gunnar Myrdal: Asian Drama, vol. 2 ch, 21 op.cit.

23/ Royal Government of Afghanistan, Ministry of Agriculture and Irrigation; Survey of Population and Agriculture, 1967/68. The results of this survey has not been published yet, but a summary table has been made available.

24/ Royal Government of Afghanistan, Ministry of Information and Culture: Da Afghanistan Kalany 1955/56, cited in V. Chupir: Employment in Agriculture of Afghanistan, December 1968, ditto.

25/ See Survey of Progress 1968/69, op.cit. : surveys of Kabul and Lashkar Gah.

26/ See among others, C. K. Eicher and L. W. Witt: Agriculture in Economic Development, 1964. ch.VII, part III.

27/ Ibid.

28/ Measurement for the Economic Development of Underdeveloped Countries.

29/ Problems of Capital Formation in Underdeveloped Countries.

30/ American Economic Review 1961 and Agrawala & Singh: Econ. of Underdevelopment.

31/ The Economics of Agricultural Development, 1966 p.32 and ch.9.

32/ For further discussion, see Gunnar Myrdal: op.cit. ch.21 and 22.

33/ K. N. Raj: op.cit.

34/ Among others see W. J. Mellor: op.cit. pp.517-34 Rosenstein-Rodan: Disguised Unemployment and Underemployment in Agriculture, Monthly Bulletin of Agric. Econ. & Stats., FAO Vol.6. July-Aug. 1957. Also see Government of India, Ministry of Labor: Labor Survey Techniques, 1964.

35/ For a more detailed discussion of these problems see G. Myrdal: op.cit. ch.21 and 22.

36/ See Revised Third Five-Year Plan, Appendix pp.6-18.

37/ See James G. Scoville: Employment Compensation in Afghan Industry, 1967.

38/ R. Nurkse: Problems of Capital Formation .....op.cit.

39/ Ibid., see H. Leibenstein: Economic Backwardness and Economic Growth, 1957.

40/ for a brief review of the advocates and opponents of these thesis see, among others, G.M. Meir: Leading Issues on Economic Development ch.2 & 8.

41/ Joan Robinson uses the terms revolving and sedimented employment, see her The Accumulation of Capital.

42/ Third Plan Document p.180.

43/ Third Plan Document p.27.

44/ See V. Chupier: Manpower and Industry in Afghanistan 1966/67-1971/72, Ministry of Planning, Kabul, ditto.

45/ Ibid.

46/ Among others, see the conclusions reached by P.N. Dhar and H. Lydall: The Role of Small Enterprises in Indian Economic Development, 1961, as compared to M.C. Shetty: Small Scale and Household Industries in A Developing Economy, 1963.

47/ See the results of Kabul and Lashkar Gah Household Surveys in the Survey of Progress 1968/69, op.cit.

48/ See H. Leibenstein: Economic Backwardness and Economic Growth, op.cit.

49/ See S.R. Sen: The Strategy for Agricultural Development, 1962: A.K. Sen: Choice of Agricultural Techniques; and J.W. Mellor: op.cit.

50/ See A.K. Sen: op.cit.

51/ See HAVA studies, and in general form: see UN, ECAFE; Econ. Survey of Asia and Far East, 1964.

52/ The Rural Development Program of earlier plans and the Local Development in the Third Plan, while suffering from lack of technical and administrative co-ordination and financial resources, has been able to attract and draw peoples cooperation and assistance at a very limited scale.

53/ Survey of Progress 1968/69, op.cit. pp.46-47.

54/ Ibid., pp.59-68.

MEASUREMENT OF THE EMPLOYED AND UNEMPLOYED IN CEYLON

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and

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The several censuses of population that have been carried out in the country from time to time provide the major source of information on the employment and occupational characteristics of the population. The first census on modern lines was taken in 1871. Since then there has been a regular series of censuses taken at intervals of ten years upto 1931. Owing to the intervention of the second World War, the census of 1941 was carried out in 1946. Thereafter the censuses were held in 1953 and 1963. The next census of population is being planned for 1971.

The censuses that were conducted before the outbreak of the second World War used the concept of 'earner' to identify the employed population of the country. "Earners" were defined to include workers as well as persons with independent means derived, for example, from shares, pensions, rents, the work of others etc. Non-earners included children, women, old and infirm persons who did not earn money or another means of subsistence and had no means of their own. However, women and children who helped to augment the family income (e.g., basket weavers etc.) were considered to be earners, while women who looked after the house and cooked the food were excluded from the earner' category. Domestic servants were included among earners while begging was regarded as an occupation or means of subsistence. Persons temporarily out of employment were shown as following their last employment.

The post-war censuses, however, used the expression "gainful occupation" for enumerating the employed population. "It was believed that the term 'earner', which had been adopted without qualification at previous censuses, was too wide and likely to confuse and mislead the enumerator, and that the requirement to record subsidiary occupation imposed on him a

difficult task."1/ A gainful occupation was defined as an occupation by which the person who pursued it earned money or a money equivalent. Only the principal occupation, or that occupation which was regularly followed and brought in the largest income was considered as the gainful occupation of the person enumerated. Thus, an activity which was not regularly practised and which did not bring in a regular income was not classified as a gainful occupation. For instance, a housewife who did odd jobs and earned some money and contributed it to the support of the family was excluded from the category of the gainfully occupied. Similarly, daughters of working age who helped at home were certainly usefully occupied. In fact they may be regarded as taking the place of domestic servants and it would even be argued that they sometimes received money (pocket money) or money equivalent (food, clothing etc.) Nevertheless they were not considered as gainfully occupied because (a) there was no stipulated contract of service and (b) their maintenance whether they helped or not was the responsibility of the head of the family.

It is, however, interesting to note that the definition of the "gainfully employed" itself has varied from census to census. According to the 1946 Census, all persons who had been working as employers, employees, self-employed, or were temporarily unemployed at the date of the census were deemed to be gainfully employed. It will thus be seen that unpaid family workers were excluded from the definition. Further, no attempt was made to elaborate on the conditions under which a person could be considered as having an occupation. Hence it was not possible to assign a definite status to persons in seasonal employment and persons who were not working on the date of the census.

In the Census of 1953, the unpaid family worker was included in the category of the gainfully employed. An unpaid family worker was defined to include those who have worked without pay of any kind for at least three hours a day, during the week prior to the date of the census, in an economic activity

1/ Ranasinghe A.G., "Census of Ceylon 1946, Vol.I, Part I, General Report".

other than housekeeping. As far as the seasonal workers were concerned, however, the reference period was changed from one week to cover the entirety of the cultivation period. Further, there was another major change in the definition between 1953 and 1963. Whereas in the 1953 Census the principal occupation or means of subsistence was the main criteria in determining the economically active, in the 1963 census the "income" criteria was replaced by that of"work". According to the 1963 Census, the gainfully employed population comprised "all persons who were engaged at the time of the census in any kind of work for pay or profit".

A preliminary difficulty in determining the economically active population is to define "working age". The age limits have to be set on the basis of assumptions which no doubt will have to be realistic and consistent with the customs and traditions prevailing in the country. In the ECAFE region, the age-group 15 - 59 years is generally regarded as the "working age" group. The 1953 and 1963 Censuses of Ceylon did not prescribe a lower age limit for determining a person's activity status. It is interesting to note that in Ceylon, where social policy has been consciously directed towards keeping all the school-age children in school, a large number of children below 14 years of age have been employed. While on grounds of social policy it may seem plausible to fix the lower limit of "working age" in Ceylon at 14 years, the fact that large numbers of children are nevertheless driven to seek employment due to economic factors make this unreasonable. According to the 1963 Census, out of about 1.3 million children in the age group 10 - 14 years, about 5% were reported to be employed and a further 9 per cent engaged in household work.

In developing countries where the bulk of the population is engaged in agriculture, people continue to be "economically active" even after passing the normal retirement age. Hence it is not possible to prescribe an upper age limit in defining the population of working age. The 1963 Census of Population disclosed that a faily substantial proportion of those aged 60 years and over were employed. Of those aged 65-69 years, as much as 40 percent were reported to be employed. It would therefore not be appropriate to accept the ECAFE practice of setting the upper age limit at 59 years.

The definition of the unemployed adopted in the 1963 census was different from that used in the 1953 census. In

1953 unemployed persons were defined as those who had been previously employment and who were temporarily unemployed and seeking employment on the first day of the preliminary census. Thus persons who were seeking employment for the first time were excluded from the category of the unemployed; such persons were treated as dependents. But in the 1963 census it was clearly laid down that in order to be classified as unemployed, a person should (a) be without employment or work, and (b) be seeking or looking for work. The unemployed persc were divided into two distinct categories, viz., those who were previously employed but were at present unemployed, and persons not previously employed but now seeking work or employment for the first time.

It will thus be seen that the concepts and definition of employed and unemployed used, have varied from census to census. The effects of these variations are to some extent reflected in the varying participation rates for the respective years. (See Table I). It was mentioned earlier that the unpaid family workers were excluded from the definition of 'employed' persons in 1946 but included in the 1953 enumeration. This party accounts for the slight increase in female participation rates in 1953 because unpaid family workers are predominantly females. According to the 1953 census, nearly 13 per cent of the economically active females were classified as unpaid family workers. If they had been excluded from the calculation, the overall female participation rate in 1953 would have declined significantly from 18.9 per cent to 16.4 per cent. Similarly the exclusion of the first time employment seekers from the labor force would undoubtedly have depressed participation rates, especially among males in the younger age groups. This is to some extent evident from the fact that between 1946 and 1953 there has been a 13 point drop in the participation rates of males aged 15 to 19 years.

It must however be emphasised that the variations in the participation rates should not be attributed entirely to changes in the concepts and definitions of the labor force. The size of the labor force is determined by a variety of demographic (rate of growth and age-sex composition of the population), economic (availability of job opportunities) and cultural (social customs which permit the participation of women in economic activity) factors. For instance, the proportion of persons in the young and very old age groups

determines, to a large extent, the supply of labor. Since 1946, there has been an acceleration in the rate of growth of the Ceylonese population as a result of sharp decline in the death rates. This has brought about considerable changes in the age structure of the population between 1946 and 1963, as is evident from Table 2. Persons of the working age of 15 - 59 years formed 57.4 per cent of the total population in 1946 but in 1953 and 1963 they contributed 54.9 per cent and 52.0 per cent respectively. Between 1946 and 1963 the decline in the proportion of persons in the working age also accounted for the reduction in the overall participation rate during this period.

Apart from the censuses of population, the various sample surveys that have been conducted in the country from time to time also provide valuable information on employment and unemployment. The Sample Survey of Employment, Unemployment and Under-Employment carried out in 1959/60 used two concepts to measure the labor force participation in the country. The first measurement was obtained on the basis of each person's main activity; that is whether the person enumerated has devoted the major part of his time to economic or noneconomic activity. This measure had its limitations in that it did not include "a considerable number of persons who, although mainly engaged in domestic duties, or studies, or some other non-economic pursuit, were also working in a productive enterprise part-time, as a secondary activity or were also looking for work."2/ The second measurement was based on a somewhat broader concept of unemployment which also included persons who were mainly engaged in non-economic activities but were willing and available for work. These two measures used in the 1959/60 survey obviously gave different estimates of the labor force. According to the "main activity" criterion, the labor force consisted of 3,320,000 persons or 32.34 per cent of the total population. According to the second concept there were 3,590,000 persons in the labor force. This constituted 35.03 per cent of the total population.

The definition of the unemployed has also varied from survey to survey, thereby reducing the comparability of the

2/ I.L.O. "Preliminary Report to the Government of Ceylon on Survey of Employment, Unemployment and Underemployment 1959-60", Geneva, 1962.

data collected through these enquiries. The 1959/60 survey defined the unemployed as "persons aged 12 years and over whose main activity status was either (a) without work but available and willing to work, or (b) without any substantive work or duties though able to work or take duties whole time."3/ According to the survey of Ceylon's consumer Finances conducted by the Central Bank in 1963, "all those persons who had been looking for work and were willing to go out of their places of residence to engage themselves in such work but were unable to find employment" were considered to be unemployed.4/ The survey of Rural Employment Problems carried out in 1964 classified as 'unemployed' those persons who, during the survey, were without work, and had been, as far as could be ascertained, without work for a considerable time and who were available for full-time employment."5/ A major limitation of this definition was that no definite reference period was specified during which a person had to be without employment to be classified as unemployed. The Labor Force Survey of 1968 defined as unemployed those "without work but available for work and willing to work full-time if work is offered."

It will now be clear that the definition of unemployed persons invariably introduces a subjective bias into the measurement. It is possible to ascertain the status of an unemployed person by different combinations, e.g., (a) available and seeking or looking for work, (b) available for and willing to work, (c) available for work and willing to work if such work is offered, (d) without work (therefore available) and able to take up work whole-time if offered. The differences in the various definitions, though apparently only of degree, may make for a substantial divergence in the resultant measurements.

The concept of unemployment is usually limited to "involuntary" idleness. But in rural areas it is customary for persons who do not have regular work to accept work on a casual basis, however low paid or intermittent such work

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3/ Ibid.page 8.

4/ Central Bank of Ceylon. "Survey of Ceylon Consumer Finances 1963", Colombo.

5/ I.L.O. "Report to the Government of Ceylon on Rural Employment Problems" Geneva,1965.

might be. Thus these persons cannot be considered unemployed in the strict sense of the term, but they are in a category which is not very different from those who are completely unemployed. Further, in developing countries like Ceylon, the extent of peoples participation in economic activity is largely determined by the current demand for labor as well as the level of wages offered by employers. This is why in the estate sector in Ceylon where there is a regular flow of cash income the proportion of labor force to the total population is very much higher than in the other sectors. It is also the experience in Ceylon that whenever new avenues of wage-earning employment are opened up in the countryside, a large number of persons offer themselves to be engaged, though many of them may not have been actively looking for employment earlier. In developing countries like Ceylon where the rate of employment creation is very slow, the subjective probability of obtaining employment is very low and hence many persons will not be actively looking for work. Hence the measurement of unemployment on the criteria of "seeking or looking for work" will not be realistic for such countries.

TABLE I

CEYLON: LABOR FORCE PARTICIPATION RATES 1946-63 - BY SEX AND AGE GROUPS

Age Group	1946 Male	1946 Female	1946 Total	1953 Male	1953 Female	1953 Total	1963 Male	1963 Female	1963 Total
10 - 14	14.1	11.8	13.0	10.3	9.8	10.1	8.3	4.2	6.3
15 - 19	59.2	24.3	43.0	46.5	27.8	37.5	52.1	24.3	38.5
20 - 24	83.3	23.8	54.2	81.4	28.7	55.8	87.2	32.4	59.6
25 - 29	95.0	26.3	62.8	94.5	28.5	63.1	97.3	30.1	63.9
30 - 34	99.3	28.8	67.4	95.1	30.2	65.7	98.4	27.4	64.9
35 - 39	98.4	31.1	68.6	95.9	32.2	66.9	98.6	28.1	65.0
40 - 44	99.0	33.7	70.7	95.3	34.6	68.9	98.2	28.8	66.9
45 - 49	97.5	33.4	70.2	95.4	35.6	69.8	98.0	29.5	67.6
50 - 54)	90.7	30.1	63.8	93.8	35.9	69.1	96.4	27.7	66.0
55 - 59)				91.2	34.1	67.1	87.7	17.9	58.2
60 - 64)	88.4	26.0	60.4	84.2	30.1	59.7	76.4	11.3	48.8
65 +)				67.2	23.2	47.1	54.7	9.2	33.4
All Ages	57.8	18.2	39.2	53.1	18.9	36.9	51.36	15.63	34.2

Source: The data for 1946 and 1953 are based on population censuses for these years. The data for 1963 are based on the results of the 10% sample tabulation of census returns. In 1946, the last two age-groups used were 50-59 and 60-69.

TABLE II

PERCENTAGE DISTRIBUTION OF THE POPULATION BY BROAD AGE GROUP, CEYLON 1946-1953.

Age Group		1946	1953	1963
	Males	35.8	38.3	40.5
0 - 14	Females	38.9	41.3	42.5
	Total	37.2	39.7	41.5
	Males	58.7	56.2	52.5
15 - 59	Females	55.9	53.5	51.4
	Total	57.4	54.9	52.0
	Males	5.6	5.5	7.0
60 and over	Females	5.3	5.3	6.1
	Total	5.4	5.4	6.5

ASPECTS OF UNEMPLOYMENT IN CEYLON

P. J. Richards

I. Introduction
II. The Unemployed
III. The Underemployed
IV. Some Characteristics of the Ceylon Economy
(a) Development of GDP
(b) Demographic Change
(c) The Development of Paid Employment
(d) Internal Population Movement
(e) Income Distribution
(f) Earnings and Prospects
V. Conclusions
VI. Footnotes

I. INTRODUCTION

In this brief paper I propose to survey the unemployment position in Ceylon within the context of the whole economy and of certain major economic policies 1/. However, I am under no illusions that unemployment can be satisfactorily "explained" or understood without either tackling social and sociological issues (which I do not), or having available a great deal more of factual information.

Unemployment rates in Ceylon are high by any reasonable standard and are particularly so by the normal standards of South Asia. The latest survey specifically aimed at measuring unemployment, in 1968 2/ found open unemployment rates, for the labour force over age 14, of 14.8 per cent in the urban and 10.4 per cent in the rural areas, while an I.L.O. survey in 1959/60 found rates of 14.4 per cent and 9.8 per cent respectively 3/. Even the 1963 census, which almost certainly understates unemployment

1/ See footnotes at end of article.

and must be used with caution, shows rates at least double those reported for India 4/.

The I.L.O. 1959-60 survey, based on a one-year reference period, sought respondents' main activity throughout that year. Data on a one-week basis was also collected, allowing for some revision of the one-year figures. The 1968 survey collected data on the main activity for both one week and one year reference periods, although only the latter is available by age group. Two relevant aspects of the main activity approach can be noted; no minimum number of hours worked is stipulated for the employed, while those contributing the minimum number of hours to economic activities who could otherwise be rated as "unpaid family workers" 5/ may still by main activity be excluded from the labour force.

Table 1 shows age-specific unemployment rates, unfortunately in less detail for 1959-60 than for 1968. Before examining the rates a word needs to be said on their comparability since one set of data are on a one year, the other on a one week, basis. In fact, similar data for 1968 on a one year basis would show lower open unemployment rates 6/. Alternatively, under various assumptions, the 1959-60 rates can be changed 7/.

These assumptions are as follows:

(a) those used by the I.L.O. author(s) - anyone contributing in any way to economic activities is employed, anyone available and willing to work or mainly engaged in non-economic activities but also seeking work, is unemployed;

(b) as (a) but excluding the movement from non-labour force to unemployed;

(c) allowing no movement from non-labour force but as in (a) and (b) shifting some "unemployed" into "employed" and assuming that a part (all save 5 per cent of the total employed) of the

TABLE 1

AGE-SPECIFIC UNEMPLOYMENT RATES 1959/60 AND 1968
(Share of Labour Force)

Age-group	1959/60 (1)		1968 (2)					
	Male	Female	Male			Female		
	Total	Total	Total	Rural (3)	Urban	Total	Rural (3)	Urban
15-19	33	23	34.6	33.2	44.0	25.7	23.0	52.6
20-24	19	17	23.0	21.1	31.2	28.3	25.8	46.1
25-29	n.a.	n.a.	8.4	8.1	9.7	12.8	11.3	24.3
25-44	n.a.	n.a.	4.3	4.1	5.4	6.7	6.2	11.0
45-54	n.a.	n.a.	1.5	1.1	3.4	0.7	0.5	3.0
25-54	4	4	3.5	3.3	4.4	5.5	5.0	9.5
55+	3	3	0.7	0.5	1.8	1.4	0.8	5.3
All 12+	9.8	12.1	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
All 15+	n.a.	n.a.	10.1	9.5	12.9	14.1	12.6	25.9

Source: I.L.O., Report on Unemployment in Ceylon, 1959/60; and 1968 Labor Force Survey, Ministry of Planning, unpublished.

(1) One year reference period
(2) One week reference period
(3) Including estates

employed working zero hours were in fact unemployed 8/ ; and

(d) as (a) plus the transfer just mentioned from employed to unemployed.

The results are given in Table 2 for rural and urban areas.

TABLE 2

UNEMPLOYMENT RATES, 1959/60
(various assumptions all ages, both sexes)

	Main Activity only	Assumptions (i)	(ii)	(iii)	(iv)	(1968)
Rural	9.8	11.8	8.8	15.3	16.8	(10.4)
Urban	14.4	18.3	13.6	18.1	21.4	(14.8)

Source: see text

The upshot of this discussion is that it can scarcely be categorically stated that overall unemployment is increasing 9/ although there was probably an increase in female unemployment in the 15-24 age groups where, particularly in the urban areas, rates are now astronomical. Other features of the unemployment situation shown in table 1 are fairly common; urban rates above rural rates, rates generally decreasing with increasing age. As a rule the largest drop in rates comes when passing from age-group 20-24 to 25-29.

Not surprisingly female participation rates, except for the 20-24 age group, are low by regional standards as are male rates at both ends of the age scale 10/. Since 1953 female participation rates have shown a marked rise in the age group 20-24, a slight rise in the group 25-29 and gradual falls elsewhere. Male rates in the age-groups 15-19 and 20-24 have risen slightly, up to age 55 they have been fairly constant and after that falling. Thus, already

there may be a fairly radical difference between male and female behaviour; young females have joined the labour force, only to add to the unemployed, more young males have joined the labour force, but probably they have not increased the share unemployed.

II. THE UNEMPLOYED

What we know about the unemployed can be briefly summarised. From the 1968 survey we know that the majority are male (71 per cent), are aged between 15-24 (77 per cent of males, 70 per cent of females) and have never held any job (74 per cent males, 84 per cent females). Comparing the educational achievement of the 15-24 age group unemployed, with that of the relevant population age-group it is interesting that while the male unemployed are more educated than the average, the difference is not great. For females the difference is very large. The data are given in Table 3.

TABLE 3

AGE-GROUP 15-24, EDUCATIONAL ACHIEVEMENT, 1963

	Unemployed		All Population	
	Male	Female	Male	Female
No schooling	5.9	8.2	6.4	18.2
- 5th standard	23.3	10.3	26.2	25.6
5th-7th standard	30.0	14.7	29.5	22.8
8th standard	21.4	17.4	20.8	18.2
'O' level	17.9	46.0	12.6	11.9
HSC +	0.4	0.7	0.9	0.6
nes	2.1	1.6	2.6	2.7
Total	100	100	100	100

Source: Department of Census and Statistics, Ceylon Population Census, 1963.

It is noticeable,on observing unemployment rates within population age groups with a particular educational level (in the range of fifth standard 'O' level), that female unemployment rises with educational achievement. The same is not true for males, where unemployment was highest (in 1963) in the immediate pre-'O' level groups. It is also striking that for eighth standard and 'O' level rural rates were above urban rates; of the rural female population aged 20-24, with 'O' level, 26 per cent were unemployed.

Only a little is known about the job desires of the unemployed; the 1968 survey provided data showing that of the males aged 15-24 who were never previously employed, 46 per cent would take 'any employment' , 21 per cent unskilled employment and 18 per cent wanted clerical work. Of the females the shares were 30 per cent, 8 per cent, and 30 per cent,respectively, while 17 per cent wanted teaching jobs. Naturally most of those of both sexes educated to 'O' level wanted clerical or teaching jobs. However, the picture of the unemployed as being largely well educated and insisting on clerical work is, for men at least, wide off the mark 11/.

What is not known about the unemployed is (a) their family background (particularly family income), one can only assume that most are dependants; (b) where they are recently migrants, and (c) to what extent waiting improves their job prospects. These points will be picked up again later.

III. THE UNDEREMPLOYED

It must be asked to what extent there is a continuum between those not working at all, those working a little but wanting more work and those working full-time? Is 'unemployment' an arbitrary cut-off point? No definite answer can be given. In 1959-60 only 5 per cent in the rural and 4 per cent in the urban areas of those with main activity "unemployed" put in any hours at economic

activities in the reference week. Again in 1959-60, of the employed only 45 per cent in the rural and 29 per cent in the urban areas worked under 40 hours in the reference week; however, only 19 per cent and 11 per cent, respectively, of the employed were available for any more work 12/. In 1968 the only relevant data collected was on the numbers available for part-time and full-time work. As a proportion of the employed, in the urban areas 1.4 per cent were available for part-time and 1.3 per cent for full-time work, while in the rural areas it was 2.1 per cent and 2.5 per cent, respectively. Most of those employed do not at present want more hours of work. But any approach to "underemployment" by counting the number of hours worked runs into difficulties. For many workers hours worked are flexible, (much more so than for men entering or leaving the labour force); if the reward is high more hours will be worked. This is scarcely enough to write off underemployment. Many people want more work because they are poor, many others cannot increase their work effort though they are poor.

IV. SOME CHARACTERISTICS OF THE CEYLON ECONOMY

It is obviously the interplay of several factors on both the labour demand and supply sides which causes unemployment. The rate and pattern of economic growth, demographic change, the growth and range of personal earnings, the degree of development of the labour market, the level of education, all play their part. Since in Ceylon open unemployment rates are so high, I shall start by looking at those factors which seem more marked there than elsewhere.

(a) DEVELOPMENT OF GDP

Since comparable series of national accounts statistics begin only in 1959, it can only be estimated that during the 1950s, at current prices, GDP grew at around 3 per cent per annum, while population probably

grew at around 2.8 per cent, with net output in estate (export) agriculture and domestic agriculture growing slightly slower than the average in the former and slightly faster in the latter. Manufacturing (excluding export crop processing) probably grew at around 5 per cent (from a minute base) as did transport. Price inflation in the 1950s was negligible.

Growth rates since 1959 are shown in table 4; the overall rate of growth increased so that in the period 1959-1968 average real per capita income growth was probably over 1 per cent per annum. Much of this growth, however, has been concentrated in the more recent years, particularly since 1966 when there has been a marked acceleration of output in both domestic agriculture and manufacturing 13/. For most of the years since the early 1950s, therefore, the picture has been one of a very slow growth rate.

TABLE 4

GROSS DOMESTIC PRODUCT BY MAIN SECTORS, SELECTED YEARS

Sector	Percentages Current Prices				Growth rate (1) Prices	
	1959	1960	1967	1968	Current	Constant
Agriculture	38.8	37.8	35.8	37.0	3.6	3.2
Manufacturing(2)	11.5	11.2	10.8	11.7	4.9	5.6
Construction	4.8	4.5	4.2	5.1	5.2	3.9
Transport	9.1	9.3	10.5	9.1	6.1	5.2
Trade	13.5	14.8	14.6	13.6	5.8	4.7
Services	17.4	17.6	17.9	17.7	5.1	4.4
Other (3)	5.0	4.9	6.3	5.8	7.2	4.4
Total	100	100	100	100	4.8	4.2

Source: Central Bank of Ceylon, Annual Reports

(1) Average 1959-1961 to 1966-1968.

(2) Including export crop processing, responsible for some 5 per cent of GDP.

continued.

(3) Including banking, insurance, electricity, gas, water, ownership of dwellings, mining and quarrying.

The main factors affecting sectoral growth rates can be briefly mentioned. Estate agriculture's prosperity depends largely on export price shifts which have generally been downwards, although yield increases have eased the position. Domestic agriculture has benefited constantly from a high guaranteed price for rice, from investment in irrigation and since 1965/66, from a faster spread of improved varieties etc. A concentration of government expenditure on transport, public utilities, health and education explains the fast growth of some other sectors. Manufacturing, largely left to the private sector, has not attracted widespread, particularly foreign, support 14/. So far as the demand for labour is concerned, the relative prosperity of domestic agriculture and the small contribution of modern manufacturing to GDP imply a relatively labour intensive development path.

It must, of course, be borne in mind that fertile soils and export agriculture has made Ceylon, in per capita terms, relatively rich. In the middle 1950s Ceylon's per capita income, at official exchange rates, was twice that of India and Pakistan (although way below Malaya and the Philippines) 15/. Since, in the following 10 years real per capita income scarcely rose, the differential over India and Pakistan was lessened and that with Malaya widened. How important absolute per capita income is in relation to unemployment is debatable. It could be that the achievement of a certain minimum level (with not too unequal a distribution around the average), leads to a more philosophical acceptance of unemployment at the family level.

(b) DEMOGRAPHIC CHANGE

The main factor affecting the labour supply must be the evolution of the population, and for Ceylon this has become a text book study of the effects of high birth

rates, throughout the first half of this century at least, and declining death rates, since the second world war. The results have been a high population growth rate and a high proportion in the dependent age-groups; the latter probably reached a peak in the early 1960s and is now declining 16/. Falling death rates, however, affected all age-groups although there is a tendency now for death rate reductions to be concentrated in the lower age-groups 17/. Nevertheless, the median age-group of the gainfully employed male population rose from 30-34 in 1953 to 35-39 in 1963 18/.

By the mid-1950s a man aged 15 and a man aged 55 could expect to live to very nearly the same age (68 and 73 respectively), while as late as 1946 a 15 year old had only a 65 per cent change of even reaching the age of 55. Everyone was given a new lease of life; the labour force grew older, losses from the labour force through death fell. Retirements naturally rose, and will no doubt continue to do so as the share of the labour force in paid employment increases. Nevertheless, male workers over the age of 60 amounted to around 8 per cent of the 1968 male rural gainfully employed. Men who cannot afford to retire would have a working life of up to 60 years, compared to nearer 40 years in a developed country; hence, the labour force turnover is low.

The changing share of the major age-groups in the population is shown in Table 5. The 15-24 age-group has obviously been increasing faster than the main working age-group 25-54, although for females the rates have been fairly close in recent years. High growth rates for the 15-24 age-group scarcely make job finding easy. Nevertheless, it is significant that the years since 1963 have seen a considerable acceleration in the growth rates of the 25-54 age-group, without an apparent increase in male unemployment in that age-group.

The 1953 and 1963 censuses taken together would have it that the rise in the population aged 15-24 was totally

unmatched by an increase in employment for that group, and indeed that the absolute number of employed aged 15-24 remained stable. Population growth showed itself in unemployment. Although the number of employed females aged 25-54 was also unchanged, this did not result in unemployment since participation rates fell. How voluntary these changes were is impossible to say; the male 25-54 age-group expanded in employment if anything very slightly faster than in population. This may mean that the rate of economic growth allowed only so many jobs; it may also mean that this group had to have jobs.

TABLE 5

AGE GROUP GROWTH RATES, 1953, 1963, 1968

percentages

Age Group	1953-1963		1963-1968	
	Males	Females	Males	Females
15-24	2.7	3.1	3.6	3.4
25-54	1.1	2.2	2.3	3.2
All ages	2.5	2.9	2.3	2.7

Source: Census of Population 1953; Population Projections for Ceylon, 1958-1998, S. Selvaratnam, et . al., Ministry of Planning, 1970, adjusted figures used.

In general, the convergence of a slow rate of economic growth and a fast rate of population growth cannot present a full explanation of unemployment. There can be no doubt that labour supply can create its own demand although, except under very favourable circumstances only at low levels of productivity.

(c) THE DEVELOPMENT OF PAID EMPLOYMENT

The share of the gainfully employed who are paid employees is the nearest approximation generally possible to measuring the importance of family enterprises, and

hence the ease with which young persons can find work. In Ceylon 63 per cent of the gainfully employed were in paid employment in 1963 19/. Of those in paid employment 32 per cent were permanently, and some 12 per cent casually, employed in agriculture, 18 per cent in government, public corporations etc., while the rest cannot be so easily accounted for. Possibly some 60-70 per cent of those in paid employment were in 'permanent employment' 20/, the latter implying certain job rights and a complex dismissal procedure.

The relatively high share in paid employment owes much to two factors: the estate system and the general occupation structure in the rural areas. Estates 21/ employ some 17 per cent of the total labour force; these workers are mainly Indian tamils and voteless, their physical mobility is low and they still live largely in isolation from the rest of the islanders. The system on estates is for both men and women to work, thus the participation rate for females aged 15-24 was 80 per cent on estates, compared to 25 per cent in the other rural areas. (For males the rates were 86 per cent and 70 per cent.)

'Employment' on estates means being put on a checklist and having a claim to all work going; thus hours worked may fall and there is some evidence that in the 1960s they have. It is worth looking at the position of the tea estates in detail; against a background of rising yields, falling prices and constant real wages, the ratio of permanent labour per acre has risen slightly 22/. Higher yields have required more (female) plucking labour, lower profits have probably reduced the demand for (male) maintenance and capital work labour. Chemical weed killers are now reducing the need for male labour even further. As a result, female labour (which is also cheaper) is much more in demand than male labour, a trend contrary to the rest of the economy. 23/

There can be little doubt that were tea and rubber produced entirely on small-holdings, there would not be

anything like the present level of estate unemployment nor such high female participation rates, i.e. the idleness of the young would almost certainly be swopped for the leisure of their mothers.

In addition to the special phenomenon of the estates it is possible to question the 'ruralness' of many Ceylon rural areas, bearing in mind that only some 35 per cent of the labour force are mainly occupied in domestic agriculture anyway. Firstly, the area around Colombo has justly been regarded as over-populated in relation to the north, east and south-east, i.e., generally speaking, the 'dry zone'. In 1963 77 per cent of the population occupied 39 per cent of the land area (3 per cent of Colombo district - was occupied by some 20 per cent of the population) and there were 2,800 persons per square mile in Colombo district compared to 120 in the north and east 24/. In 1963 even the average density of the rural parts of Colombo district was 1,600 persons per square mile, three times that of most surrounding districts 25/. On this basis it can be doubted whether the official rural-urban distinction made on the basis of administrative units, i.e., municipal, urban and town councils, is economically very meaningful 26/.

The congestion in many of the rural areas, their subsequent inability to support an expanding agricultural population and their accessibility in relation to Colombo, have all worked to change the traditional pattern of employment. It is interesting that rural unemployment rates, excluding estates, are closer to, though still below, the urban rates and that there is considerable regional variation. While urban rates (in 1963) were either stable everywhere (for females) or fell in the more sparsely populated areas (for men), rural rates fell with distance from Colombo for both sexes (but more markedly for females). Indeed, male unemployment was higher in the Colombo rural areas than its urban areas.

(d) INTERNAL POPULATION MOVEMENT

Two elements need to be considered here: the first is urbanisation and the second is the movement between different geographical areas. The period 1953-1963 experienced, in fact, slower urban than rural growth 27/, as can be seen from table 6.

TABLE 6

PERCENTAGE INCREASE, URBAN AND RURAL POPULATION, 1953-1963

	All urban	All rural	Towns in 1953 of size:	
			5-20,000	20,000 +
Colombo	31.6	28.0	100.0	25.8
Low-country	24.4	26.1	24.0	18.5
Hill zone	40.0	28.9	41.0	19.0
Dry zone	32.2	56.0	28.0	25.0
Jaffna	20.6	26.0	17.5	23.0
Ceylon	30.5	31.5	33.0	24.1

Source: data supplied by the Ministry of Planning.

Of course, the base year structure of population in urban areas could be expected to cause slow growth rates. Since the Registrar-General estimates a natural rate of increase for 1953-1963 of 2.4 per cent in the urban areas and 2.9 per cent in the rural areas the shane of the urban areas would have fallen further without some net rural-urban movement. Even in 1963 the urban age-sex structure was still fairly distorted, as table 7 shows.

If age-groups resident in the urban areas in 1953 are compared with those age-groups 10 years their senior

in 1963 then it is seen that, although migration made a large contribution to the growth of males aged 15-24 in 1963, younger age groups have larger increases. For the male age group 25-54 (in 1963) migration made only a negligible contribution. However, migration contributed to the increase of the female population in all age groups. It can be estimated that the increase due to migration was composed of some 34 per cent of females, over 15 year, 35 per cent of children under 15 year, 26 per cent of males between 15-24 and 5 per cent of males over 24 years. Thus, movement of younger men is not the predominant form of migration although it is sufficient to create a considerable distortion in the age-sex structure.

TABLE 7

CEYLON, 1963 OVER 15 AGE STRUCTURE, SELECTED DISTRICTS

	females aged 20-45 = 100											
	Ceylon			Colombo			Low-country			Dry Zone		
	Total	Urban	Rural	T	U	R	T	U	R	T	U	R
Males 15-24	58	73	55	64	76	54	54	61	55	60	105	52
Females 15-19	30	33	30	30	31	29	30	33	30	28	30	27
Males 25-49	95	114	91	105	122	87	85	88	85	115	120	115
Share of total population	100	-	-	20	-	-	30	-	-	16	-	-

Source: Department of Census and Statistics, Census of Population, 1963.

While urbanisation has probably taken people from the country to small towns, increased the size of villages, and taken other people from small towns to big towns, there has been a separate movement from south-west Ceylon to the east. This is naturally inextricably linked to the policy of colonisation through extension of gravity irrigation in previously neglected areas. However, even without colonisation, support for rice production has benefited these areas more than the areas around Colombo, since there more land could easily be brought into use, even with very low yields and, in any case, peasant agriculture there is more dependent on rice (and not rice and coconuts as in the south-west) 28/. Thus, the last 15 years must have seen a massive redistribution of purchasing power towards the east and north 29/. Colonisation itself has been proceeding at a rate of settlement of some 4,000 families per annum, not really sufficient even to stop the demand for land in the south-west from rising; nevertheless, the schemes have promoted other migration and after nearly 20 years of movement it can generally be reckoned that for every colonist and family member one new migrant has arrived 30/. Colombo district has been the only other areas to have been a net beneficiary from population movement.

(e) INCOME DISTRIBUTION

It might be expected that a fairly constant per capita income and widespread unemployment would, between them, result in the increasingly unequal income distribution; did this happen? Since 1953 and 1963 were also the years of consumer finance surveys 31/ , an answer can be given for that period. In those 10 years there was a rise of 27 per cent in pre-tax income per income-receiver, per spending unit the rise was reduced to 13 per cent, per capita it falls to 4 per cent 32/. On average, each spending unit (which is the nearest we can get to the concept of the family) had 11 per cent more members in 1963 and 9 per cent fewer income receivers; each income receiver supported two other people in 1953 and 2.7 in 1963. This increase in dependency was most marked in the very lowest income groups, especially those receiving up

to Rs.50 per month (which accounted in 1963 for 9 per cent of the population). Nevertheless, in terms of concentration ratios income distribution per spending unit improved slightly 33/, and although in terms of per capita income there may have been no overall improvement, there can however, have been no more than a slight deterioration.

A fairly tricky point concerns the contribution of female income receivers to family income since, as noted, female employment stagnated in this period. Does the addition of female incomes improve or worsen the equality of distribution of family incomes? If the average and median incomes for spending units and male income receivers only are compared, in 1963 average spending unit income was 19 per cent higher than average male income, the median was 3 per cent higher in the rural areas: in the urban areas the increase was 11 per cent (average and median); and on estates 128 per cent and 107 per cent, respectively. It can be assumed that while in the urban areas and on estates (where income is more fairly - in a statistical sense - distributed anyway), there is no necessary tendency for female earners to contribute to low income families, in rural areas this tendency exists. It should also be noted that while the increase in dependency was highest for spending units in the very lowest income groups - which may well not consist of 'families' in the normal sense - dependency ratios were lower than the average for those groups in 1963 and were indeed remarkably constant, on an all island basis, for spending units receiving more than Rs.50 per month.

A brief word must be said on the effect of government income redistribution policies (i.e. excluding policies aimed at boosting a particular productive sector) and the extent to which they may have equalised income distribution in the face of unemployment. There is some direct public assistance both nationally and in Colombo town, possibly some 20 per cent of the over 65 years olds are receiving assistance. No able bodied man can receive

assistance, although in Colombo town an able bodied woman can receive relief (officially for her children) of up to Rs.50 per month 34/. Otherwise the widest, and best known, direct benefit is the rice subsidy, estimated in 1963 at 19 cts per lb. It is not generally realised that while the rice subsidy has been very important as an income supplement for low income groups, part of its benefit has been negated by a trading "tax" on sugar 35/ and that if consideration is given to the low income group expenditure on liquor and tobacco, the net indirect tax effect appeared fairly regressive even in 1963. Since 1963 the rice subsidy has been changed, raising the average price to the consumer, while the share of indirect taxes in government revenue has risen and that of direct taxes fallen 36/.

On balance, therefore, it seems fair to conclude that the unemployment position in the period 1953-1963 did not seriously affect income distribution. This means that the pattern by which income accrued to older men, leaving many younger men unemployed, presumably fitted well into the family structure.

(f) EARNINGS AND PROSPECTS

Since for some years Ceylon has been a labour surplus economy it is necessary to ask in what ways this surplus has affected earnings and hence the job desires of the unemployed? Here it is necessary to refer both to the unemployed who are willing to take up particular jobs and to those who, largely through work-sharing, count as employed. In this respect it is valuable to examine the change between 1953 and 1963 in the age distribution of the sectoral labour force; this is given in Table 8. Some interesting points emerge; the aging of the male agricultural labour force and the decline, for females, of the share of the 55 + age group. Young males increased their share only in manufacturing and commerce, and the same applies more forcefully to young females. Those two sectors had relatively low proportions of paid employees - as did agriculture (for men) where the absolute growth of

TABLE 8

AGE DISTRIBUTION OF SECTORAL LABOUR FORCE, 1953-1963

	Age-groups Percentages						% (share of paid employees 1963)	Share in total employment	Share of	
	1953			1963					Male	Female
	-24	25-54	55+	-24	25-54	55+				
Agriculture:										
Male	21.6	64.2	14.2	20.5	63.0	16.5	45	)52.9	75	25
Female	35.2	56.6	8.2	34.5	60.6	4.9	85	)		
Manufacturing:										
Male	25.0	64.1	10.9	28.6	61.2	10.2	73	) 9.8	80	20
Female	26.5	56.1	17.4	47.3	45.1	7.6	58	)		
Construction:										
Male	20.7	67.1	12.2	17.8	70.9	11.3	90	2.5	98	2
Electricity etc:										
Male	20.7	73.1	6.2	14.6	81.6	3.8	88	0.3	98	2
Commerce, banking, finance:										
Male	21.3	70.1	8.6	22.0	68.5	9.5	52	) 8.7	91	9
Female	15.8	59.5	24.7	17.9	65.8	16.3	39	)		
Transport etc:										
Male	17.5	75.7	6.8	13.5	78.2	8.3	89	4.1	98	2
Services:										
Male	28.6	63.4	8.0	24.7	79.7	8.6	84	)15.7	75	25
Female	37.8	56.1	6.1	31.9	62.1	6.0	92	)		
nes	-	-	-	-	-	-	-	6.0	87	13
Total	-	-	-	-	-	-	-	100.0	79	21

Source: Census of Population, 1953, 1963

of total labour force owed something to a movement into agriculture of men in their 30s and 40s. Probably it is in those sectors which experienced a decline in the proportion of younger workers, i.e. construction, electricity, transport, that earnings rose most.

The data available are too sketchy to prove or disprove this thesis. Only a few features can be noted; earnings on estates would appear to have risen no faster than the cost of living 37/, i.e., the labour surplus on estates has negated the pressure for an increase which slightly higher man-land ratios might otherwise have brought about, while in many dry zone rural areas casual daily wages certainly rose faster than the cost of living. Hourly earnings in such trades as dock labour and engineering have risen relatively fast 38/, government clerical starting rates, and much more so labour rates, have also risen more quickly than the cost of living 39/.

Excluding estates and the government sector, wage-fixing for about 20 per cent of the paid employees comes under the Wages Boards. Supply and demand can operate through these boards to varying degrees although they have a built in tendency at least to preserve real wage levels. This leaves some 30 per cent of the paid employees in the unregulated sector - shops, small offices, casual labour around estates - where a labour surplus might be most likely at least to prevent earnings from rising.

No data are available on the effect of the labour surplus on earnings from self-employment. The main variable to be studied, however, would be the effect of population pressure on agricultural holding size. It is often asserted that the concentration of owned holdings is increasing, but no solid evidence on holdings owned is available for recent years. However, 57 per cent of the areas of all under-50 acre holdings was owner-operated in 1962 40/. So far as operational holdings are concerned it is difficult to separate out the effects of colonisation schemes in bringing new land into use. A comparison of

1952 and 1962 data shows, for holdings under 10 acres, a fall in the average size only in certain districts 41/. On balance the fall in holding size is probably very slow, perhaps much more so than calculations of inheritance would lead one to think. The result, therefore, must be an increasing number of agricultural labourers and non-agricultural rural workers, although it might be expected that cultivators' earnings would have remained bouyant.

It is useful to consider briefly the position of the young labour force entrant. Firstly, his skill or educational level may rule out many occupations. Table 3 showed that of all males aged 15-24 (in 1963) 32 per cent had not reached standard 5, while at that time the majority of clerical workers, sales workers and transport workers of all ages had done so. However, 50 per cent of that unemployed group fell between standards 5-8, as did 47 per cent of the clerical workers, 60 per cent of the sales, 63 per cent of the transport workers - but only 30 per cent of the agricultural workers. Secondly, the range of jobs in the rural areas is naturally less attractive than in the urban areas 42/. By all accounts, average earnings are not necessarily much higher for the same job in the urban areas. The 1963 consumer Finance Survey found, in fact, the following data:

TABLE 9

URBAN AND RURAL MAIN OCCUPATION EARNINGS, 1963

	Urban		Rural	
	Average	Median	Average	Median
Clerical and Allied	480	542	332	305
Craftsmen	241	209	170	168
Unskilled Labour	166	132	122	114
Agricultural Cultivator	-	-	234	170

Source: Central Bank, Survey of Ceylon's Consumer Finances, 1963.

Thirdly, some jobs naturally promise much higher earnings than others; permanent jobs offer benefits no casual worker can ever achieve. A government unskilled worker can now start at Rs.175 per month, while many casual workers would be lucky to earn Rs 100, and would earn more than unskilled workers in engineering for a shorter working week 43/. In addition, of course, the government, public corporations and better employers offer security, incremental scales (a clerk can generally expect to see his salary more than double) and can generally be expected to increase real rates of pay through time 44/.

In the light of these remarks certain features seem rational e.g., rural-urban movement among labour force entrants. Whether migrants stand a better or worse chance of finding the job they want is unknown. The only data available show the educational level of migrants being on average higher than that of the same population age group 45/. It has already been noted that, on an all-island basis, there is no tendency for income receivers in better-off families to have more dependants - i.e. the 'successful' man is not (on this level) submerged by opportunist relatives. Finally, the slight differential of urban over rural earnings for labouring jobs - and the probable difficulty of either subsidiary earnings or of finding work for wives - make it likely that migrants are those who can profit by the greater range of urban jobs.

Similarly, it is rational for labour force entrants to attempt to get the best job going. That in the meanwhile, (and over 50 per cent of those never previously employed had, in 1968, been unemployed for more than 12 months), they take no casual work presumably indicates their family situation 46/. This may, of course, mean that an increased demand for casual labour in certain parts of the country might not reduce unemployment at all. (Indeed there is still some scope for even male participation rates to rise). Increased demand could be satisfied by increased hours, by taking up seasonal slacks or by abandoning entirely certain lower productivity occupations.

In this I have very much in mind the present accelerated improvement in rice cultivation methods and increase in yields, predominantly in the dry zone. These changes are increasing the demand for labour at seasonal peaks - mainly land preparation and harvesting. The dry zone does not provide the range of activities for a casual labourer to find off-peak employment. Hence, peak demand raises daily rates considerably. Probably land preparation will be mechanised very soon - and harvesting could follow later. At that stage regular off-farm jobs for manufacturing and repairing mechanical equipment may be created which could help the unemployed. But if the increase in the demand for labour has the effect of transferring small-holding cultivator/labourers from the wet to dry zone - which could happen if the increased demand were not entirely seasonal 47/ - the unemployed may not directly benefit but the whole agricultural community would 48/.

V CONCLUSIONS

The stability of unemployment rates in the older male age-groups and the role of the family structure in distributing income lead to the assumption that Ceylon's high unemployment rates cannot be explained just by the contrast between economic and demographic growth. On the labour supply side at least Ceylon has several marked economic features which could contribute to high unemployment rates; chief among these must be importance of paid employment and the non-agricultural nature of much of the rural sector.

The latter is also, no doubt responsible for the low rural-urban earnings differential and thus the absence of any striking rural-urban movement. Again the extent of internal migration has been influential here in relieving congestion, although to a very limited extent, and this possibly reducing the relative attraction of the urban areas.

Although the range of earnings prospects before a young labour force entrant is probably no greater in Ceylon than elsewhere, educational levels - and hence the number considering themselves eligible for better jobs - are high, particularly in the congested rural areas. Together with this is the increasing readiness of many young women to join the labour force if the right job can be found.

Can anything be said about policy? Before the last (Ceylon) election the view was sometimes heard that the rice subsidy should be exchanged for a wholesale employment creation programme; in the short run, at least, this could only worsen the income distribution since, while unemployment does not appear to make income distribution more unequal, the rice ration certainly makes it more equal. Should not the major aim of policy be to raise output at all levels, to aid the man working long hours for little gain, rather than to concentrate on the totally unemployed. The totally unemployed are totally unproductive; they are even, it is claimed, 'counter-productive', contributing negatively by constituting a discontended, destabilising, politically aware grouping. But this last claim may be a myth; in Ceylon the unemployed are in their homes, not on the streets, and other group can be equally discontended 49/.

The problem, therefore, is to exploit the productive potential of the young unemployed at the least cost, or even with immediate profit and, the same time, possibly to reduce the premium on waiting for a 'good' job. It is surely not unreasonable to claim that were the range of earnings (and other conditions of work) open to the labour force entrants with similar educational and skill levels not so great, unemployment might well be lower.

Recent schemes to make use of the unemployed have only scratched the surface of the problem (although the National Youth Organisation, which has only just begun,

may be more successful 50/. Basically, present schemes aim at providing non-permanent manual work together with some form of training, and there is probably no alternative to the local work-site approach to unemployment absorption. At present wages are paid, Rs.3 per a 5 hour day. Whether so much is necessary as an inducement, or indeed how many youths really are prepared to come forward even at that rate, only experience can tell. In Ceylon there is also a very widespread voluntary labour movement, operated on a village level with food aid, but it largely works at weekends and is not aimed specifically at the young unemployed.

Ideally there should perhaps be two lines of attack, one to make full use of the employed, the other to find a more labour-intensive path to economic development while hoping that the latter will gradually mop up the former. How the latter is to come about I am not competent to say; I should only like to draw attention to the constancy of the land-use pattern in the wet zone of Ceylon over the last 30 years, despite population growth, price and yield shifts, and I wonder, with others 51/, whether more (labour) intensive use, particularly of the over one million acres of coconut area, is not possible 52/.

Finally, it is clear that not only is more research necessary but that much more raw data are necessary. Essentially, more needs to be known about the unemployed, their background, job desires, and their absorption in the recent past into gainful employment, and about prospective and historical earnings by skill levels and employment status especially in the 'un-regulated' sectors. To what extent does retail trade act as a sponge for the proprietors' unemployed relatives? What are the likely earnings of a clerk's son compared to those of a manual worker's son? With this kind of information it will be possible to build up a much more coherent picture of unemployment in the economy than is at present possible.

FOOTNOTES

1/ This paper is a preliminary version of a longer study currently being undertaken at the OECD Development Centre.

2/ Conducted by the Ministry of Planning many data from that survey are preliminary.

3/ For comparison the following rates were reported in surveys in 1966 and 1967 for the Philippines and West Malaysia, respectively: urban areas 11.7 per cent and 11.6 per cent, rural areas 5.3 per cent and 7.4 per cent, see Journal of Philippine Statistics, January-March 1967 and survey data quoted in Handbook of Labour Statistics, West Malaysia, 1967. All as reported in D.Turnham, The Employment Problem in Developing Countries - A Review of Evidence, OECD Development Centre, 1970.

4/ At the time of writing I have not seen the paper presented by the Ceylon Ministry of Planning on employment data. However, I have had the privilege of working closely with that Ministry and expect I am in agreement with them on main issues of data interpretation.

5/ Three hours per day in the 1968 survey.

6/ In 1968 the reference period made practically no difference to participation rates except to those reported "unemployed, previously employed" on a one week basis; some 30 per cent, on a one year basis, vanish into other labour force categories, thus reducing overall unemployment rates by some 8 per cent (to 9.3 per cent all males, 12.9 per cent all females)

7/ These assumptions have the effect of amending main activity (self-declared) in the light of secondary

activity (recorded in a reference week) with very generous definitions being used for employment and unemployment . As can be seen they generally add more to the latter category. Eventually, it should be possible to complete a very similar exercise on the 1968 data.

8/ The justification for this is the contrast of reference year activity with reference week hours - this leaves a large share of the "employed" working zero hours. Five per cent working zero hours is a figure recorded in 1968.

9/ There could be a problem of seasonality, but seasonality (in rural areas) as measured by the share of "household enterprise workers" working over 40 hours varies only from 49 to 39 per cent, and of the same group working zero hours varies (inversely, same quarters) from 21 to 13 per cent. The 1968 survey should have coincided with neither peak nor trough.

10/ Comparison with rates for Middle South Asia given in J.N. Ypsilantis, World and Regional Estimates and Projections of Labour Force, I.L.O.,1966.

11/ Similar data on the unemployed who had been previously employed show much lower average education levels and a higher share willing to take any employment or unskilled work.

12/ In detail the figures, averaged over four quarters, were as follows:-

hours	Rural		Urban	
	Percentage employed			
	Working	available	working	available
0	12.5	81.2	8.3	88.8
1-14	5.1	4.3	2.5	2.5
15-39	27.8	10.7	17.7	6.3
40+	54.6	3.8	71.0	2.4
	100.0	100.0	100.0	100.0

13/ The average rate of real per capita income growth, 1960-1965, is given as - 0.4 per cent in OECD, National Accounts of Less-Developed Countries, Paris, 1967.

14/ The sectoral distribution of GDP lends an air of unjustified tidiness to the economy. Particularly, but not only, in the rural areas people draw income from more than one industrial sector; in certain regions over 60 per cent of the cultivators in the 0-1 acre size group receive their main income from non-agriculture. (In other regions about 40 per cent do.) In the 1-5 acre size group the share still reaches to over 30 per cent in some areas.

15/ Figures quoted in Myrdal, Asian Drama, table 11-1. Myrdal's own estimates for 1954-56 reduce the differential with India and Pakistan, reverse that with the Philippines but preserve that with Malaya. Hagen and Hawrylyshyn in Economic Development and Cultural Change, October 1969 give the following ratios of per capita income, Ceylon = 100:

	1960	1965
Pakistan	54	67
India	55	70
Malaysia	192	216

16/ The share of the population under 15 and over 60 was 45.1 per cent in 1953, 47.2 per cent in 1963 and is estimated by the Planning Ministry at 46.0 per cent in 1968.

17/ By 1963 age-specific death rates were at 20-30 per cent of their 1944 level for all ages up to 44, at 33 per cent for the age-group 45-54 and 60 per cent for the 55+.

18/ It remained 30-34 for urban areas.

19/ Of course a large number were no doubt employed by relatives although not unpaid family workers.

20/ Probably the same share were Trade Union members.

21/ Taking as estates tea and rubber plantations of over 50 acres. The estate population, which now has a normal age-sex pattern, accounts for some 10 per cent of the total.

22/ From 1959/60 tea acreage rose 3 per cent, output 15 per cent, yields 14 per cent, Colombo prices fell 17 per cent, export value fell 2 per cent, male hours worked fell 5 per cent. Permanent labour per acre rose from 1.13 to 1.16 persons.

23/ The 1968 survey found, for those over 14, unemployment rates of 8.8 per cent for males and 3.1 per cent for females. The rates for the age-group 15-24 were 25.4 per cent and 6.7 per cent, respectively.

24/ 640 per square mile in Jaffna district, 760 in five "low country" districts around Colombo and 600 in five hill country estate districts.

25/ Higher, in fact, than that of one town council area.

26/ All of rural Ceylon had 66 per cent of the labour force in agriculture, 9 per cent in manufacturing and 12 per cent in services; rural Colombo had 29 per cent, 18 per cent and 23 per cent respectively; dry zone urban areas had 14 per cent, 12 per cent and 37 per cent.

27/ Assuming that towns 'created' between 1953-1963 grew at the same rate as nearby towns, and adding their estimated 1953 population to the then urban figure. In 1963 urban areas accounted for slightly under 20 per cent of the population.

28/ From 1952/54 to 1965/67 acreage prepared for rice rose by 75 per cent, 80 per cent of this increase was in these eastern and northern districts.

29/ And probably away from the hill zone estate areas. The 'excess' of males aged 25-49 in the dry zone shown in table 7 can be noted.

30/ Based on a comparison of certain districts and revenue divisions almost totally unoccupied before colonisation.

31/ Central Bank of Ceylon, Survey of Ceylon's Consumer Finances, 1953 and 1963.

32/ Unless the share of measured income in GDP fell this rise in average incomes of some 2.5 per cent per annum is compatible with a recorded employment increase of around 0.6 per cent and a GDP increase of slightly over 3 per cent.

33/ The improvement largely consisted of a fall in the shares of the highest and the two lowest deciles, and an increase in the shares of the second to the fifth highest deciles.

34/ Five years residence in Colombo is requested for eligibility.

35/ For the four lowest income groups the 1963 figures are:-

Income group Rs 2 months	0-50	51-100	101-200	201-400
Average income	33.3	75.6	153.0	292.0
Rice subsidy	8.1	10.9	13.3	15.6
Sugar "tax"	5.5	5.6	8.3	11.3
Tobacco and liquor taxes	6.0	4.8	6.1	12.1
Percentage of population in income group	2.0	7.0	21.0	36.0

continued...

Source: calculated from Consumer Finance Survey 1963, and Report of the Taxation Inquiry Commission, 1968.

36/ Of course government expenditure financed by these taxes benefits everyone although the Taxation Inquiry Commission, page 64, considered that the "middle income group" (Rs 400-1,000 for two months) benefited most from the social services.

37/ Since dependency ratios rose, real per capita incomes fell.

38/ Hourly earnings rose from 27 per cent to 45 per cent for this group, 1959-1966 the cost-of-living index, Colombo town, rose by under 10 per cent.

39/ 1958-1968, labourer starting rates + 25 per cent, cost-of-living + 16 per cent.

40/ 20 per cent was held under crown lease, 8 per cent rent free, 15 per cent under various forms of tenancy. The share of the last was highest in the estate areas, it was lowest in Colombo.

41/ Comparing 1952 and 1962 Agricultural Censuses, the general impression is of a slight upward movement in each size group - i.e. compatible with a very slight breaking-up of large holdings.

42/ Hence, in 1968 the average educational level of the male 'unemployed, never previously employed' was higher in rural areas, excluding estates (52 per cent with 8th standard or 'O' level), than in urban areas (39 per cent with those education levels).

43/ A skilled engineering worker, who would have the same level of education as may clerks, could with

the 'best employer' not leave the scale Rs.160-320 p.m. A government clerk could expect the scale Rs 250-550 p.m.

44/ But by no means to preserve differentials, all government higher grades have seen differentials compressed - as have clerks vis a vis labourers.

45/ Some data on migration were collected in 1968, although in general they are ambiguous the above statement seems justified.

46/ Except on estates where no casual work could exist.

47/ Dry zone cropping patterns could be changed to provide much more non-seasonal employment.

48/ Including fellow-villagers in the wet zone. Of course, this is to ignore the derived effect of increased incomes creating the sort of jobs the unemployed would want.

49/ The educated unemployed may, however, be important in spreading discontent.

50/ The National Youth Organisation provides work for a few thousand as do the Agricultural Development Corps. and Youth Settlement Schemes. The spread of handlooms in rural areas has probably done much more to take productive use of idle hours than have these schemes.

51/ See S.T.Seneviratne - Presidential Address to the National Agricultural Society of Ceylon, 1964.

52/ Value-added per acre of coconuts can be estimated at only Rs.200-250, that of rice at around Rs. 450, tea around Rs.800.

THE LEVEL AND COMPOSITION OF LABOUR FORCE AND UNEMPLOYMENT IN INDIA*

Pravin M. Visaria

I. The Level of Labour Force Participation
II. Composition of the Labour Force
III. The Conceptual Background of the Estimates of Unemployment
IV. The Characteristics of the Unemployed
V. Limitations of the Review
VI. Footnotes

This study is intended to discuss some aspects of the size and characteristics or the composition of the Indian labour force, with somewhat greater attention to the characteristics of those classified as unemployed.

I. THE LEVEL OF LABOUR FORCE PARTICIPATION

Table 1 shows the participation rates for India, estimated on the basis of the special 1961 Census tables for Maharashtra. To permit comparison with the National Sample Survey data on labour force participation rates, based on the 16th Round, the rates for ages above 30 are shown in ten-year age groups.

It is interesting that for males the participation rates based on the 1961 Census are not significantly different from those estimated from the NSS. The estimates of participation rates for females show a fair degree of divergence; and the NSS seems to underestimate the female participation rates in all age groups except 5-9. The divergence

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* Because the paper presented at the conference is 140 pages long, it could not be duplicated in full in this volume. Instead an excerpted version is presented here. The original which includes a discussion of major sources of data, an evaluation of employment exchange statistics and information on employment in the organized sector, is available in Planning Commission, Government of India, Report of the Committee of Experts on Unemployment Estimates New Delhi, 1970.

arises in respect of female participation rates in rural areas; for urban females, the NSS estimates of the level of labour force participation are consistently higher than those based on the census.

The NSS rates are subject to sampling error; and in addition, the reference period in the 16th Round (one week) was shorter than that in the census (a fortnight for regular workers in trade, profession or service, and the current or last working season for workers in seasonal activities such as cultivation, dairying, etc.). 1/ The close similarity of the census and the NSS participation rates for males is, therefore, gratifying. One might infer that since males have a generally stable attachment to economic activities, alternative approaches to measure the extent of their labour force participation would give more or less similar results. The wide reference period for the enumeration of seasonal workers, adopted by the 1961 Census, had its effect particularly in the case of females in rural areas (where seasonal activities predominate). The marked difference between the NSS and the census estimates of the participation rates for urban males in the age group 15-24 might, in part, be due to the fact that the urban labour force survey during the 16th Round was undertaken during July-December 1960 while the reference period for most of the urban workers enumerated by the 1961 census was a fortnight during February 1961.

Substantial differences in crude participation rates occur between States. In part, these differences seem to be related to the composition of the population in terms of the proportion of the scheduled castes and tribes in the population, as indicated in Tables 2 and 3.

The factors responsible for the observed difference in the inter-State and the caste/tribe differences in worker rates are unlikely to be entirely economic. The demand for labour in rural India is influenced by several factors, including the pattern of land use, the frequency of cropping, the seasonal fluctuations in the labour requirements, etc; in addition the extent (and pattern) of the supply of labour

1/ See footnotes at end of article.

TABLE 1

THE SEX-AGE-SPECIFIC LABOUR FORCE PARTICIPATION RATES FOR RURAL, URBAN AND ALL AREAS OF INDIA

According to the 16th Round of the NSS and Those Based on the 1961 Census Data for Maharashtra

(per cent)

Age Group	India		Rural India		Urban India	
	1961 Census	NSS 1960-61	1961 Census	NSS 1960-61	1961 Census	NSS 1960-61
			MALES			
5 - 9	2.51	2.81	2.91	3.28	0.54	0.52
10 - 14	29.92	28.88	34.14	32.73	11.11	11.69
15 - 19	69.43	70.33	77.07	76.30	40.70	47.87
20 - 24	90.95	91.31	94.41	93.09	79.60	85.44
25 - 29	96.27	95.90	96.86	95.52	94.03	97.33
30 - 39	97.72	96.49	97.73	96.05	97.68	98.18
40 - 49	97.76	95.35	97.92	94.84	96.33	97.47
50 - 59	95.70	90.74	97.25	90.64	88.39	91.22
60 +	57.46	61.97	80.06	63.79	59.25	51.90
All Ages	57.12	55.06	58.22	55.67	52.40	52.30
			FEMALES			
5 - 9	1.69	2.12	1.98	2.40	0.24	0.73
10 - 14	22.78	20.01	26.71	22.97	5.22	6.79
15 - 19	40.56	33.52	47.17	37.81	11.43	14.60
20 - 24	43.07	37.07	49.26	41.03	15.55	19.52
25 - 29	44.76	41.29	50.76	45.67	17.03	21.10
30 - 39	45.59	47.56	53.34	52.01	21.19	25.96
40 - 49	50.11	47.18	54.56	50.90	24.75	27.46
50 - 59	42.91	38.37	46.94	40.60	20.71	26.31
60 +	22.42	16.89	24.35	17.64	11.48	12.63
All Ages	27.96	25.17	31.42	27.72	11.09	13.55

Note: The NSS rates for all areas of India have been obtained by weighting the rates for rural and urban areas according to the rural-urban distribution of the population of each sex-age group, as reported by the 1961 Census have been taken from Reports 103 (p.23); 114 (pp.22,24)

Source: (1) The National Sample Survey, Reports 103 (p.23);114 (pp.22,24)

(2) Pravin Visaria, "Estimates for Participation Rates and Labour Force, Including and Excluding Unpaid Family Workers, for India, 1961-1981", in Planning Commission, Government of India, Report of the Committee of Experts on Unemployment Estimates, New Delhi, 1970, Appendix V.

probably depends on the extent of owner-cultivation, the assets/income position of the particular groups of population, the extent and duration of school enrolment, the extent and pattern of out-migration and the flow of remittances, and the sex-age composition of the resident population. The available information is insufficient to indicate the extent to which each of these factors is influential but it seems that the participation rates for States conceal rather large inter-district variations which deserve careful study and analysis. Also, micro-studies are required to evaluate the validity of the levels of labour force participation, particularly for females, reported in a large undertaking such as the decennial.

Such studies would be helpful also for projecting the labour force where one needs to consider the possible changes in the level of participation rates. In the present state of the Indian economy, it is extremely difficult to infer the likely changes in the female participation rates.

Table 4 provides a picture of overall participation rates over time, by sex and rural and urban residence, reported by the successive Rounds of the NSS. Tables 5 and 6 shows separately the proportion of those classified as gainfully employed and unemployed. In examining the data in these tables it should be borne in mind that the reference period has been stabilised at "one week" only after the 13th Round. Also, the 13th as well as the 10th and earlier Rounds did not cover a full-year. As a result, while the 14th and subsequent Rounds present an average picture for a year, the estimates from earlier Rounds are likely to be affected by the prevailing seasonal situation, particularly in rural India. Yet, some broad features of the three tables are noteworthy.

If attention is restricted to the Rounds beginning with the 9th, when the proper labour force surveys were initiated, one gathers an impression of some decline in the participation rates among both males and females in urban areas. While the estimates are subject to sampling error, the participation rates for urban females show a high degree of stability. However, Table 5 suggests that

TABLE 2

CRUDE WORKER RATES*, BY SEX, FOR SCHEDULED CASTES, SCHEDULED TRIBES AND THE NON-SCHEDULED POPULATION IN DIFFERENT STATES OF RURAL INDIA, 1961 CENSUS

State/Union Territory	MALES				FEMALES			
	All	Scheduled Castes	Scheduled Tribes	Non-Scheduled Population	All	Scheduled Castes	Scheduled Tribes	Non-Scheduled Population
India	58.22	59.98	61.43	57.51	31.42	35.86	52.47	28.20
Andhra Pradesh	64.33	67.86	65.98	63.58	46.00	59.13	57.38	42.99
Assam	53.98	55.70	54.21	53.78	32.41	26.88	49.43	28.58
Bihar	55.99	58.22	62.25	54.78	28.49	41.16	56.65	22.44
Gujarat	55.29	53.18	58.44	54.77	34.15	38.07	50.12	30.16
Jammu & Kashmir	59.28	56.42	-	59.55	29.51	25.24	-	29.92
Kerala	47.42	53.05	54.00	46.73	20.88	43.91	40.61	18.22
Madhya Pradesh	61.58	62.87	63.59	60.55	48.60	53.04	58.18	43.86
Madras	62.19	63.32	64.56	61.80	37.11	47.23	49.91	34.27
Maharashtra	58.07	59.08	61.74	57.64	46.74	50.16	56.63	45.56
Mysore	60.40	63.42	60.23	59.89	36.79	45.03	47.27	35.28
Orissa	61.02	61.41	63.75	59.74	27.38	32.18	44.29	18.81
Punjab	53.45	53.79	61.85	53.33	16.50	14.55	69.42	17.00
Rajasthan	60.13	60.33	62.28	59.65	40.82	42.12	51.28	38.39
Uttar Pradesh	59.20	60.45	-	58.84	19.90	28.67	-	17.34
West Bengal	53.47	55.23	58.59	52.30	10.62	10.91	41.86	7.00
Nagaland	61.04	84.62	58.85	88.46	60.33	-	60.97	23.85
Delhi	47.83	56.88	-	46.91	21.93	23.48	-	21.52
Himachal Pradesh	63.48	65.86	65.38	62.20	57.74	58.80	60.95	56.83
Manipur	47.92	59.71	48.60	47.21	44.86	39.17	52.68	40.76
Pondicherry	57.13	62.83	-	55.77	22.96	46.41	-	17.55
Tripura	55.25	59.72	54.98	54.52	22.40	9.22	48.68	8.30
N.E.F.A.	80.99	-	59.86	83.74	17.21	-	31.95	13.40
Andaman & Nicobar	68.28	-	55.49	72.34	22.42	-	51.60	6.30
Laccadive Islands	51.60	-	50.33	82.51	51.68	-	51.62	54.43
Dadra & Nagar Haveli	62.04	47.77	62.71	58.33	57.94	54.39	61.02	28.83

* Workers per 100 population.

Source: Census of India, 1961, India, Part II-A (ii), Central Population Tables; Part V-A (i) Special Tables for Scheduled Castes; Part V-A (ii) Special Tables for Scheduled Tribes.

TABLE 3

CRUDE WORKER RATES*, BY SEX, FOR SCHEDULED CASTES, SCHEDULED TRIBES AND THE NON-SCHEDULED POPULATION IN DIFFERENT STATES OF URBAN INDIA, 1961 CENSUS

	MALES				FEMALES			
	All	Scheduled Castes	Scheduled Tribes	Non-Scheduled Population	All	Scheduled Castes	Scheduled Tribes	Non-Scheduled Population.
India	52.40	53.24	54.69	48.53	11.09	21.07	31.58	9.87
Andhra Pradesh	52.40	55.93	60.22	51.97	18.74	35.33	40.90	16.87
Assam	55.36	56.81	47.28	55.84	9.87	15.09	25.27	7.75
Bihar	51.73	54.50	50.46	51.50	10.40	24.08	29.14	8.28
Gujarat	48.37	45.56	54.66	48.38	9.24	19.24	27.94	8.01
Jammu & Kashmir	50.78	54.60	-	50.64	5.78	7.07	-	5.73
Kerala	45.98	49.46	48.76	45.79	13.00	32.82	31.82	11.92
Madhya Pradesh	52.44	54.03	61.82	52.09	14.50	28.24	40.40	12.42
Madras	53.16	54.53	57.45	52.99	14.95	28.43	33.94	13.35
Maharashtra	54.84	49.48	56.49	55.05	13.45	22.94	34.71	12.78
Mysore	51.57	52.78	56.67	51.43	14.87	25.17	29.37	13.71
Orissa	57.21	57.97	59.25	56.93	13.12	29.46	36.08	8.10
Punjab	50.92	50.65	-	50.96	4.70	10.89	-	3.86
Rajasthan	48.04	50.14	53.11	47.65	10.05	19.81	28.98	8.28
Uttar Pradesh	51.74	54.60	-	51.38	5.34	11.90	-	4.49
West Bengal	55.38	56.08	54.17	55.32	5.12	10.06	26.27	4.54
Nagaland	52.13	70.37	35.54	65.42	9.67	-	14.07	2.38
Delhi	52.80	52.05	-	52.89	4.46	9.99	-	3.73
Himachal Pradesh	56.43	58.07	54.72	56.08	11.93	21.42	27.08	9.43
Manipur	40.99	76.24	35.08	41.32	40.43	17.54	11.80	42.03
Pondicherry	48.71	62.79	-	48.07	11.20	37.27	-	10.11
Tripura	46.84	57.83	34.70	46.53	5.46	8.47	5.38	5.23
N. E.F.A.	-	-	-	-	-	-	-	-
Andaman &Nicobar	66.17	-	-	66.17	5.07	-	-	5.07
Laccadive Islands	-	-	-	-	-	-	-	-
Dadra & Nagar Haveli	-	-	-	-	-	-	-	-

* Workers per 100 Population.

Source: Census of India, 1961, India, Part II-A (ii), General Population Tables; Part V-A (i) Special Tables for Scheduled Castes; Part V-A (ii) Special Tables for Scheduled Tribes.

the decline in urban participation rates has been due mainly to lower estimates of the level of unemployment after the 15th Round. 2/

The separate tabulation of the data for agricultural labour households and others for the 11th and 12th Rounds, conducted during 1956-57, suggests that the participation rates for the former exceed those for the non-agricultural labour' households, particularly for females.

In rural India, the highest male participation rate was reported in the 9th Round when the usual status approach was adopted. The more recent estimates based on a short reference period have been lower but no clear trend is evident. The female participation rate recorded for the 9th Round was lower than that reported by the 4th, 6th and 7th Rounds. Unlike in the case of males, some of the subsequent estimates of female participation rates have been higher.

Table 6 suggests that the estimates of the level of unemployment in rural India increased significantly after the specific short reference period of one day or a week was adopted in the 10th Round. (This is not surprising and we shall discuss this issue again in Section III below). However, the fluctuations in rural participation rates from Round to Round, observed in Table 4, cannot be attributed mainly to the changes in the reported level of unemployment. 2/ They are due primarily to fluctuations in the recorded proportions of the gainfully employed.

As in urban India, the data from the 11th and 12th Rounds provide an interesting glimpse of the different level of labour force participation by females in the agricultural labour households (31.25 per cent) and others (21.11 per cent). The level of unemployment recorded for the former was also much higher than that for the non-'agricultural labour' households.

While age-specific and age-standardised participation rates are not presented in this brief review, it is worth nothing that in urban India, the participation rates for both males and females in the age groups 10-24 have been

TABLE 4

PERSONS IN THE LABOUR FORCE AS PER CENT OF THE TOTAL POPULATION, BY SEX, IN URBAN AND RURAL AREAS OF INDIA

According to the Various Rounds of the National Sample Survey.

Round	Duration	Reference Period	Urban India			Rural India		
			Males	Females	Persons	Males	Females	Persons
4th	April-Sept. '52	Gainful Occupation Concept	52.42	15.28	34.52	59.39	33.83	46.79
6th	May-August 1953	One Month	57.00	15.19	37.15	59.03	33.05	46.22
7th	Oct.-'53 March 1954	One Month	53.96	14.86	35.33	59.08	31.54	45.48
9th	May-Nov.1955	Usual Status/ One year	54.48	11.94	34.26	59.69	26.62	43.50
10th	Dec.-'55- May 1956	One day	55.03	12.09	34.66	58.20	21.72	40.19
11th & 12th	Aug.-56 - Aug-'57	One day	52.59	12.83	33.75	55.07	23.33	39.38
-do-	-do-	One day	56.46@	34.52@	45.22@	55.28@	31.25	43.28@
-do-	-do-	One day*	52.47*	12.04*	33.37*	55.02*	21.11*	38.30*
-do-	-do-	One week*	N.A.	N.A.	33.16*	N.A.	N.A.	38.77*
13th	September '57- March 1958	One day	52.61	12.96	33.87	-	-	-
-do-	-do-	One week	52.78	13.23	34.09	-	-	-
14th	July '58 - June '59	One week	52.03	11.73	32.95	56.88	26.66	41.85
15th	July'59-June '60	One week	52.30	12.39	33.36	58.74	23.58	41.45
16th	July '60 - June 1961	One week	52.30	13.55	34.01	55.67	27.72	41.88
17th	Sept.'61 - July 1962	One week	50.95	10.85	32.14	52.20	22.16	37.50
18th	Feb.-1963- January 1964	One week	50.28	10.45	31.68	N.A.	N.A.	N.A.
19th	July 1964 - June 1965	One week	50.17	10.35	31.57	N.A.	N.A.	N.A.
19th¢	July 1964 - June 1965	One week	51.28	13.40	33.58	53.01	26.76	40.15
20th	July 1965 - June 1966	One week	49.02	10.35	31.01	N.A.	N.A.	N.A.
21st¢	July 1966 - June 1967	One week	50.56	10.85	31.93	53.96¢	28.53¢	41.41¢

@ Figures relate to the agricultural labour households only.
* Figures relate to the other than those classified as agricultural labour households
¢ Data are based on the Integrated Household Schedule.

continued....

Note: N.A. refers to the non-availability of the data in the published or draft reports or to the non-publication, so far, of the relevant data. A dash(-) is entered to indicate that the data were probably not collected.

Sources: The National Sample Survey Reports: (a) for Urban Data: (b) For Rural data:

(a)
1) No.14, pp.49,50
2) No.62, Ninth Round, p.187
3) No.34, Tenth Round, p.96
4) No.52, Eleventh and Twelfth Round, pp.111,112,144.
5) No.63, Thirteenth Round, Urban, pp.50,76
6) No.85, Fourteenth Round, Urban, p.8
7) No.169 (Draft), Fifteenth Round, p.22
8) No.103, Sixteenth Round Urban, p.24
9) No.127, Seventeenth Round, Urban, p.19
10) No.164 (Draft), Eighteenth Round, Urban, p.12
11) No.181 (Draft), Nineteenth Round, Urban, p.12
12) No.201 (Draft), Nineteenth Round, p.89
13) No.189 (Draft), Tewntieth Round, Urban, p.15
14) No.209 (Draft), Twenty-first round, urban, p.32.

(b)
1) No.14, pp.49,50
2) No.62, Ninth Round, p.154
3) No.34, Tenth Round, p.41
4) No.52, Eleventh and Twelfth Round, pp.54,55,83
5) No.100, Fourteenth Round, Rural, p.37
6) No.148 (Draft), Fifteenth Round, Rural, p.28
7) No.114, Sixteenth Round, Rural, p.20
8) No.197 (Draft), Seventeenth Round, Rural, pp.20-22
9) No.201 (Draft), Nineteenth Round, p.42
10) Twenty-first Round, Preliminary, Cyclostyled sheets, pp. 4-6.

TABLE 5

THE GAINFULLY EMPLOYED AND THE UNEMPLOYED
AS PER CENT OF THE TOTAL POPULATION

By Sex, in URBAN Areas of India, According
to the Various Rounds of the
National Sample Survey

Round	Duration	Reference Period	Per Cent Gainfully Employed			Per Cent Employed		
			Males	Females	Persons	Males	Females	Persons
4th	April - Sept.'52	Gainful Occupation Concept	51.93	15.16	34.21	0.49	0.12	0.31
6th	May - August'53	One Month	53.91	14.96	35.42	3.09	0.23	1.53
7th	October-'53-March 1954	One month	51.76	14.54	34.02	2.20	0.32	1.31
9th	May-Nov.1955	Usual Status/ One year	51.35	11.58	32.44	3.13	0.36	1.82
10th	Dec-'55-May 1956	One day	51.72	11.58	32.68	3.31	0.51	1.98
11th & 12th	August '56-August '57	One day	48.62	12.00	31.27	3.97	0.83	2.48
-do-	-do-	One day@	53.21	30.09	41.36	3.25	4.43	3.86
-do-	-do-	One day*	48.48	11.35	30.94	3.99	0.69	2.43
-do-	-do-	One week*	-	-	31.33	-	-	1.83
13th	Sept. '57 - March '58	One day	48.99	11.73	31.38	3.62	1.23	2.49
-do-	-do-	One week	49.98	12.32	32.18	2.80	0.91	1.91
14th	July '58 - June '59	One week	50.17	11.30	31.77	1.86	0.43	1.18
15th	July '59 - June '60	One week	49.70	11.56	31.60	2.60	0.83	1.76
16th	July 1960-June 1961	One week	51.01	13.25	33.19	1.29	0.30	0.82
17th	Sept.1961-July-1962	One week	49.41	10.49	31.16	1.54	0.36	0.98
18th	Feb.1963-Jan-'64	One week	49.32	10.20	31.05	0.96	0.25	0.63
19th	July-'64-June 1965	One week	49.22	10.11	30.96	0.95	0.24	0.61
19th#	July 1964-June 1965	One week	49.93	12.42	32.40	1.35	0.98	1.18
20th	July 1965-June 1966	One week	48.10	10.09	30.40	0.92	0.26	0.61
21st	July 1966-June 1967	One week	49.79	10.65	31.42	0.77	0.20	0.51

@ Figures relate to the agricultural labour households only.

* Figures relate to the households other than those classified as agricultural labour households

¢ Data are based on the Integrated Household Schedule

Sources: The National Sample Survey Reports:-

1) No.14, pp.49, 50

2) No.62, Ninth Round, p.187

3) No.34, Tenth Round, p.96

4) No.52, Eleventh and Twelfth Round, pp.111,112,144.

5) No.63, Thirteenth Round, Urban, pp.50,76

6) No.85, Fourteenth Round, Urban, p.8

7) No.169 (Draft), Fifteenth Round, p.22.

8) No.103, Sixteenth Round, Urban, p.24.

9) No.127, Seventeenth Round, Urban, p.19

10) No.164 (Draft), Eighteenth Round, Urban, p.12

11) No.181 (Draft), Nineteenth Round, Urban, p.19

12) No.201 (Draft), Nineteenth Round, p.89.

13) No.189 (Draft), Twentieth Round, Urban, p.15

14) No.209 (Draft), Twenty-first Round, Urban, p.32.

TABLE 6

THE GAINFULLY EMPLOYED AND THE UNEMPLOYED
AS PER CENT OF THE TOTAL POPULATION

By Sex, in RURAL Areas of India, According
to the Various Rounds of the
National Sample Survey

Round	Duration	Reference Period	Per Cent Gainfully Employed			Per Cent Unemployed		
			Males	Females	Persons	Males	Females	Persons
4th	April - Sept.'52	Gainful Occupation concept	59.34	33.79	46.74	0.05	0.04	0.05
6th	May-August '53	One Month	58.05	33.03	45.72	0.98	0.02	0.50
7th	October-53 - March-'54	One Month	58.76	31.46	45.27	0.32	0.08	0.21
9th	May -Nov.1955	Usual Status/ One year	59.18	26.56	43.21	0.51	0.06	0.29
10th	Dec.-55-May-56	One day	57.03	21.15	39.32	1.17	0.57	0.87
11th & 12th	August -56- August 1957	One day	52.59	21.12	37.03	2.48	2.21	2.35
-do-	-do-	One day*	49.22	24.38	36.82	6.06	6.87	6.46
-do-	-do-	One day*	53.52	20.20	37.09	1.50	0.91	1.21
-do-	-do-	One week	-	-	37.98	-	-	0.79
14th	July '58-June 59	One week	54.81	24.04	39.51	2.07	2.62	2.34
15th	July 1959- June 1960	One week	56.89	21.61	39.53	1.85	1.97	1.92
16th	July 1960- June 1961	One week	54.23	25.92	40.26	1.44	1.80	1.62
17th	September 1961- July 1962	One week	50.25	20.27	35.58	1.95	1.89	1.92
19th#	July 1964- June 1965	One week	51.59	24.66	38.40	1.42	2.10	1.75
21st	July 1966- June 1967	One week	52.98	27.29	40.31	0.98	1.24	1.10

@ Figures relate to the agricultural labour households only
* Figures relate to the non-agricultural labour households only
# Data are based on the Integrated Household Schedule.

Sources: The National Sample Survey Reports:

1) No.14, pp.49, 50.
2) No.62, Ninth Round, p.154.
3) No.34, Tenth Round, p.41 .
4) No.52, Eleventh and Twelfth Round, pp.54. 55, 83.
5) No.100, Fourteenth Round, Rural, p.37
6) No.148 (Draft), Fifteenth Round, Rural, p.28.
7) No.114, Sixteenth Round, Rural, p.20.
8) No.197 (Draft) Seventeenth Round, Rural pp.20-22.
9) No.201 (Draft) Nineteenth Round, p.42.
10) Twenty First Round, Preliminary, cyclostyled sheets, pp.4-6.

gradually on the decline during the period 1960-61 to 1966-67. In rural India, a similar trend is evident in the case of males in the age group 10-19, but for females in the same ages the tendency appears to be mild. These changes are plausible and probably reflect the delay in entry into the labour force, resulting from rising school-enrolment ratios. It is likely that the data from more recent Rounds and the 1971 Census will confirm this hypothesis. Such changes in participation rates for the young are likely to contribute also to a downward change in the overall or crude participation rates, particularly because the post-Independence decline in mortality rates, unaccompanied by a corresponding fall in fertility, is likely to raise somewhat the proportion of the population in the younger age groups.

The NSS do not suggest any decline in the participation rates for higher age groups. Among urban males aged 50-59, however, some downard tendency perhaps exists. One might expect such a change because of the application of retirement rules to the employees in the organized sector of the economy, whose importance in the urban labour force has gradually tended to increase.

Standardised age-specific participation rates indicate the crude or overall participation rates that would have been reported if the age-specific rates had been the same as actually recorded but the age composition of the sample population were that of the standard population. A special study based on the age distribution reported by the 1961 Census indicates that the standardised rates for rural males are all (except that for the 9th Round) higher than the reported, while those for urban males are all lower than the reported rates. This observation results from the selective migration of young males from rural to urban areas of the country, which lowers the proportion of population of working age (say, 15-59) in the rural areas and raises it in the urban areas.

In the case of female participation rates, standardisation seems to be unimportant. The range of inter-Round

variations is slightly wider for standardised rates than for the reported crude rates. Apparently, the differences in crude participation rates of females, reported by different Rounds, were the result of variations in age-specific rates.

It is pertinent to note here the results of another exercise. The worker rates reported by the 1961 Census were weighted by the age composition of the population enumerated by the Censuses of 1901, 1911, 1912, and 1931.4/ It was observed that the changes in the age composition would have lowered the crude worker rate for males from a high of 58.83 per cent in 1911 to 57.16 per cent in 1961; the corresponding decline in the female worker rate would have been from 29.26 per cent in 1901 (29.20 per cent in 1911) to 27.96 per cent in 1961. Thus, the differences in crude participation rates reported by successive censuses are significantly larger than can be accounted for by the changes in age composition.

II. COMPOSITION OF THE LABOUR FORCE

Industrial Distribution of Workers: 1961 Census

Table 7 shows the industrial distribution of workers in India as reported by the 1961 Census. The industrial distribution of the gainfully employed in rural India, reported by the 16th Round of the NSS, undertaken during 1960-61, is also shown for comparison. The 16th Round data for urban India have not been shown because they do not distinguish between male and female workers.

The 1961 Census classification of industrial workers is based on their reported "major activity" i.e. the activity to which they devote a major portion of their work-time. The data suggest a sharp contrast between rural and urban India. More than four-fifths of the rural workers were active in the primary sector. Almost one-sixth of the male workers and nearly one-fourth of the female workers in the rural areas reported agricultural labour as their major activity. If the information on the secondary activity reported by cultivators and workers engaged in household

TABLE 7

THE INDUSTRIAL DISTRIBUTION OF WORKERS OF EACH SEX IN RURAL, URBAN AND ALL AREAS OF INDIA ACCORDING TO THE 1961 CENSUS AND THE 16TH ROUND (1960-61) OF THE NATIONAL SAMPLE SURVEY IN RURAL INDIA

Industry Group	Rural India				Urban India		All India	
	Males		Females		1961 Census		1961 Census	
	1961 Census	16th Round	1961 Census	16th Round	Males	Females	Males	Females
A. Primary Sector	80.92	80.32	86.42	86.25	9.76	25.38	68.56	82.31
Cultivators'	61.09)		58.87)		5.56	12.09	51.45	55.72
Agricultural Labour	15.77)	80.32	24.82)	86.25	2.21	10.57	13.41	23.86
Other Agriculture	4.06)		2.73)		1.99	2.72	3.70	2.73
B. Secondary Sector	7.68	8.82	7.17	7.29	33.05	32.23	12.09	8.86
Mining & Quarying	0.53	0.65	0.25	0.35	0.79	0.84	0.58	0.29
Manufacturing	6.26	6.50	6.66	6.19	28.41	28.89	10.10	8.16
(Household Industry)	(4.35)	(N.A.)	(5.95)	(N.A.)	(5.46)	(19.01	(4.54)	(6.83)
(Non-Household Industry)	(1.91)	(N.A.)	(0.71)	(N.A.)	(22.94)	(9.88)	(5.56)	(1.33)
Construction	0.89	1.67	0.26	0.75	3.85	2:50	1.41	0.41
C. Tertiary Sector	10.30	10.39	5.40	6.02	55.40	38.62	18.13	7.64
Trade & Commerce	2.62	3.87	0.98	1.66	18.00	6.82	5.29	1.38
Transport & Communication	0.82	1.38	0.03	0.46	9.26	1.21	2.29	0.11
Services	6.86	5.14	4.39	3.90	28.14	30.57	10.55	6.15
(Electricity etc.)	(0.15)	(0.11)	(0.15)	(0.16)	(0.33)	(1.83)	(0.37)	(0.26)
Activities not Adequately Described	1.10	0.47	1.01	0.44	1.79	3.78	1.22	1.19
All Industries	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Note: The industrial distribution of workers, according to the 1961 Census, takes account of the industrial classification of workers engaged in activities other than cultivation (Table B-IV). More specifically workers classified under Industrial Category IV (Household Industry) and working in Industrial Division 0 have been placed in the industry group "Other Agriculture"

Sources: (1) Census of India, 1961, Vol. I, India, Part II-B (i), General Economic Tables, Tables B-I and B-IV (c)

(2)The National Sample Survey, Report 114 (p.9).

industry is taken into account, the number of persons who worked as agricultural labourers for some time during the working season preceding or current at the time of the 1961 Census was 11.5 million greater than that reported on the basis of primary activity (31.5 million). 5/ In urban India, less than on-tenth of the male workers but about one-fourth of the female workers were reported to be working in the primary sector.

Not only is the secondary sector less important in rural India than in urban, but the majority of the rural workers engaged in manufacturing activity work in household industries. The concentration of factories in towns and cities accounts for about 23 per cent of the urban male workers engaged in non-household manufacturing. However, even in urban areas, household industries are by no means uncommon. They engage over 5 per cent of the male workers and 10 per cent of the female workers.

The tertiary sector is seen to be a much more important employer of workers in the urban areas than in rural India. This observation is partly the result of the absence of specialization in the rural areas where cultivators generally sell and transport their own produce. Yet, the concentration of administrative offices, medical and eductional institutions and the public utilities in urban centres accounts for the fact that more than 28 per cent of both male and female workers in urban India were reported to be in the services at the time of the 1961 Census.

Change in the Proportion of Agricultural Workers during 1951-1961:

As is well-known, the 1961 census data are not comparable with those of 1951 particularly for the three Southern States of Andhra Pradesh, Madras and Mysore, where the workers were apparently underenumerated to a considerable extent in 1951. 6/ If, however, these three states are excluded from consideration, the work force participation rates for the rest of India appear to be broadly comparable. More interestingly, the proportion of male workers engaged in cultivation in the rest of India appears to have declined by

about 2.8 per cent during the decade. On the other hand, the proportion of female workers reported to be cultivators or agricultural labourers increased by about 4.8 per cent. It is because of this divergence in the distribution of male and female workers that a comparison of the proportion of total workers engaged in cultivation shows only a negligible decline. 7/ Since the completeness of enumeration of female workers and their classification generally tends to be uncertain, the trend in the distribution of male workers needs more attention. It appears that, while India is certainly far away from the stage where the absolute number of male workers in agriculture would decline, the pace of industrialization during the 1950's was adequate to lower the percentage of male workers engaged in cultivation. 8/ As noted below, the NSS Rounds after 1960-61 also suggest some decline in the proportion of gainfully employed rural males engaged in agriculture (including animal husbandry, forestry, fishing and hunting). One expects, therefore, that the 1971 Census would show a continuation of this trend during the 1960's; however, some uncertainly remains because of the slowdown of the rate of industrial growth after the end of the Third Five Year Plan. However, when the necessary data become available, it would be very useful to study the industrial distribution of male and female workers separately.

Industrial and Occupational Distributions of the Gainfully Employed:

Table 8 and 9 present 1966/67 data on industrial and occupational distributions of the gainfully employed. While space prohibits presentation of the available time series on these distributions, the following generalizations are in order. Between 1953/54 and 1966/67, in urban areas, there appears to have been a steady decline in the proportion of workers engaged in agricultural activities and in the manufacture of food products and textiles. On the other hand, the proportion of workers in mining, "other" manufacturing, construction and services appears to have increased. The gain by the services is noteworthy. The trend in the proportion of workers in public utilities, transport and communications, and trade and commerce seems to be uncertain. The data for male and female workers both

show similar trends.

The available data from some of the NSS Rounds on the industrial distribution of rural workers are less detailed than those for the urban workers. However, by and large, there is little indication of any change. The percentage of male workers in agricultural activities has perhaps declined; but only the construction sector appears to have gained in importance. There is some suggestion of an increase in the proportion of male workers engaged in services; but it seems to be accompanied by a fall in the proportion of female workers engaged in the services.

While many changes have taken place over time in the occupational classification, it seems safe to say that in urban India the proportion of administrative, executive and managerial workers among the gainfully employed males shows an almost steady rise from between 2.3 to 3.00 per cent during 1956-60 to about 4.3 per cent during 1967-68. There are signs also of an increase in the proportion of clerical and related workers. Correspondingly, the proportion of workers in agricultural activities shows a decline. However, in other occupations, no clear trend is evident.

The occupational distribution of urban female workers shows a remarkable increase in the proportion of white-collar categories of professional, technical, administrative, executive and managerial jobs. Presumably, this reflects the growth of employment opportunities for females in the public sector and in the organized private sector during the last two decades. The increasing number of educated females working as teachers has also contributed to this tendency.

The data for rural India give little evidence of any change on the occupational distribution of the working force. While the estimates based on the 21st Round are preliminary and perhaps a little erratic, there is an indication of a decline in the proportion of male workers engaged in transport and communication occupations. Presumably, this is due to some displacement of the traditional mode of transport - the bullock cart - by the motor trucks

TABLE 8

THE PERCENTAGE DISTRIBUTION OF GAINFULLY EMPLOYED BY INDUSTRY

According to the National Sample Survey, 21st Round (1966/67)

Industry Group	Urban			Rural*		
	Persons	Males	Females	Persons	Males	Females
1. Agriculture Livestock, Forestry, Fishing & Hunting	13.48	10.84	27.24	80.29	77.87	85.06
2. Mining and Quarrying	0.88	0.88	0.92	0.65	0.67	0.41
3. Total Manufacturing	29.88	30.00	29.26	7.39	7.54	7.08
(a) Manufacturing of Food Products	5.06	4.39	8.61	N.A.	N.A.	N.A.
(b) Manufacturing of Textiles	9.53	8.85	13.13	N.A.	N.A.	N.A.
(c) Other Manufacturing	15.29	16.76	7.52	N.A.	N.A.	N.A.
4. Construction	4.01	4.23	2.82	2.64	2.86	2.19
5. Electricity, Gas, Water & Sanitary Services	0.94	1.06	0.32	0.11	0.15	0.04
6. Trade and Commerce	16.00	17.64	7.46	2.55	3.16	1.33
7. Transport and Communications Occupations	8.09	9.46	0.92	0.93	1.37	0.07
8. Services	26.12	25.33	30.30	4.59	5.39	3.02
9. Industries Not Recorded or Not Described	0.60	0.56	0.76	0.87	0.90	0.80
10. Total	100	100	100	100	100	100
11. Number of Sample Persons	43669	37137	6532	16213	10889	5324

*The data for the 21st Round are based on the Integrated Household Schedule.

Source: The National Sample Survey, Report No.209(Draft), pp.55-60.

TABLE 9

THE PERCENTAGE OF GAINFULLY EMPLOYED BY OCCUPATION

According to the National Sample Survey,
21st Round, (1966/67)

Occupation Group	Urban			Rural*		
	Persons	Males	Females	Persons	Males	Females
Professional, Technical, etc.	6.19	5.77	8.36	1.30	0.44	1.75
Administrative, Executive, etc.	3.90	4.31	1.71	1.34	0.32	1.86
Clerical and Related	9.97	11.46	2.21	**	**	**
Distributive and Financial Operations	14.54	15.93	7.27	2.59	1.40	3.19
Agriculture Forestry, etc.	13.40	10.80	27.05	80.11	84.84	77.73
Mining and Quarrying	0.50	0.52	0.40	0.52	0.27	0.65
Transport and Communication	5.22	6.16	0.30	0.77	0.09	1.12
Crafts and Production Process Workers	34.03	34.38	32.25	10.31	9.14	10.91
Services	11.69	10.13	19.85	2.30	2.54	2.19
Unskilled Workers	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Other Occupations and Not Recorded	0.56	0.54	0.60	0.74	0.97	0.63
Total	100.00	100.00	100.00	100.00	100.00	100.00
Number of Sample Persons	43669	37137	6532	16213	10889	5324

*The data for the 21st Round are based on the Integrated Household Schedule.

**The Clerical and related workers have been grouped with the Administrative, Executive, etc.

Source: The National Sample Survey, Report No.209(Draft), pp.70-75, and Preliminary Tables on the 21st Round (p.12).

operated by essentially urban firms.

Distribution of the Labour Force According to Status:

While the industrial and occupational distributions of the labour force have normally received a fair degree of attention, the distribution of workers according to status or 'class of worker' is often ignored. In fact, however, it is an important variable relevant to the measurement and study of the size of the labour force as well as the level of unemployment. In particular, it is necessary to distinguish the unpaid family workers from others because differentials in the completeness of their enumeration often cause variations in the estimates of participation rates. Also, the unpaid family workers tend to be predominantly females and young children and because of their dual roles (as housewives or students, besides the rold of occasional workers) they are not always available for work outside their family enterprises. The same is probably true of the self-employed, although, perhaps, to a lesser extent, because prima facie, a self-employed person might be able to change his vocation and status more easily than a family worker who has other obligations.

While the developed countries of the West have a very small proportion of either male or female workers in the category of the self-employed (own-account workers) or the unpaid family workers, in countries like India, U.A.R., Thailand and Turkey, these categories are important. In India in 1961 own-account workers accounted for 42 per cent of the economically active males. The very high proportion of unpaid family workers among the economically active females in Thailand and Turkey is attributed to the definitions adopted for the enumeration of the labour force. More important is the persistence of unpaid family workers in Japan despite her well-developed economy. The estimated proportion of unpaid family workers among male and female workers in India in 1961, 15 and 46 per cent respectively, was not much different from the corresponding proportions reported for Japan by her 1960 and 1955 Censuses, respectively.

III. THE CONCEPTUAL BACKGROUND OF THE ESTIMATES OF UNEMPLOYMENT

Statistics on the volume of unemployment in India are obtained from the three sources: the 1961 Census, the NSS and the Employment Exchanges. Because of the differences in the concepts, definitions and procedures, the alternative estimates are not comparable. However, an examination of the characteristics of persons classified as unemployed is useful for understanding the nature or anatomy of unemployment in India. As a prelude to a detailed discussion of these data, it is necessary to outline the procedures through which different agencies obtain their statistics and their conceptual framework.

The 1961 Census:

The 1961 Census attempted to classify the population first into workers and non-workers. The workers were asked about their industry, occupation, status, etc., and the non-workers were asked about their activity. Eight categories were provided to record the activity of non-workers. Two of these were: (a) "a person who has not been employed before but is seeking employment for the first time" and (b) "a person employed before but now out of employment and seeking employment". The number of persons who were recorded to be in these two categories together formed the unemployed enumerated by the 1961 Census.

As noted earlier, the census had adopted a very wide reference period of a working season, with a rather lenient criterion of the quantum of work, for the enumeration of seasonal workers. Moreover, the term "seeking work" was not defined. Unlike in labour force surveys, the non-workers were not asked a specific question about whether they were "seeking work" or were available for it. Since the census enumeration is done by essentially honorary part-time workers, it is hardly possible to train them intensively for measuring the complex phenomenon of unemployment, particularly in rural India. Under the circumstances, it is not unlikely that the number of unemployed enumerated by the 1961 Census - 1.41 million (1.29 million males and 0.12 million females) of

whom 0.60 million (0.54 million males and 0.06 million females) were in rural areas - was an underestimate. However it is also true that in rural India few persons remain unemployed during the main agricultural season. On cannot, therefore, reject the 1961 census count of the unemployed (who were employed before) as absurdly low. The figure might perhaps reflect the number of chronically unemployed. Moreover, the census has tabulated the data on the unemployed enumerated in each district by (i) sex, broad age groups, rural-urban residence and (ii) by educational attainment. The statistics are, therefore, available with a regional disaggregation or coverage not possible for the NSS or the employment Exchanges.

The NSS Estimates of the Level of Unemployment:

Unlike the Census, the NSS conducts an intensive inquiry into the economic activity status of the sample respondents, through experienced full-time investigators. After its tenth Round undertaken during 1955-56, the NSS has normally followed a labour force approach with a short specific reference period of one day and/or one week. Under this approach, persons having some gainful work, however nominal, on the reference day (11th, 12th and 13th Rounds) or on at least one day during the reference week (14th and subsequent Rounds) have been classified as employed. Persons without gainful work throughout the reference period and seeking work, or not seeking but available for work, during the reference day (11th, 12th and 13th Rounds) or on any one of the seven days of the reference week (14th and subsequent Rounds) have been reported as unemployed. 10/ The reference period of one day or one week is adopted primarily to mitigate the difficulties of recall.

After the 13th Round, the NSS surveys have normally been spread over a year. Therefore, the resulting estimates of the level of unemployment reflect the average situation over the duration of each Round. However, in rural areas, seasonal variations in the level of unemployment as well as the size of the labour force seem to be very important. Consequently, the average figure of the level of unemployment over the year does not realistically describe the

situation prevailing during any period of the year. Separate estimates for the six sub-Rounds would be better; but with the present sample, they might be subject to a relatively high sampling error.

In some of the NSS Reports on the initial surveys of employment and unemployment, the estimated percentage of unemployed persons was used to calculate the number of unemployed persons in the country. On the basis of the 9th Round data collected from sub-samples 1 and 2, surveyed during May-August 1955, Professor P.C. Mahalanobis stated in his Foreword to the Report that "the estimated number of unemployed came to about 1.3 million in urban areas and 0.9 million in rural areas". 11/ Since the 9th Round data on the economic activity of respondents were collected on the basis of a'usual status' approach or with a long reference period of a year, those who reported "seeking work" as their "major activity" were classified as unemployed and were presumed to be "out of employment for a long period" who "has been in search of work during the same period". 12/ This presumption perhaps overlooked the likelihood that some of the unemployed might be new entrants into the labour force. However, the resulting estimate of the level of unemployment was believed to indicate chronic unemployment.

Some users of the NSS, including the Planning Commission, followed the same approach to estimate the number of unemployed persons even subsequently when the NSS recorded the data on the economic activity of the population on the basis of a short reference period of one day and later one week. The resulting NSS estimates indicated the average percentage of persons (in the labour force or population) who were unemployed for (at least) the duration of the reference period (one day or one week), during the period of the survey. In other words, the estimate referred to the manweeks (or mandays) of unemployment in relation to meanweeks (or mandays) of labour force of population. Yet, when this figure was multiplied with the estimated (rural or urban) population in the country, it was erroneously assumed that even in rural India, the resulting figure indicated the number of persons who were unemployed throughout the year (or at least chronically).

The fallacy can be illustrated by an example. Assume that all persons in the labour force in a given population were employed for 48 weeks and unemployed for 4 weeks in a year. A survey uniformly spread over 52 weeks, with a reference period of one week to record the economic activity of the population, would estimate 7.7 per cent, or one-thirteenth, of the persons in the labour force to be unemployed. The estimate really indicates man-years of unemployment or the extent of underutilization of the labour force. It would be incorrect to interpret it as the proportion of chronically unemployed persons.

Admittedly, the situation in rural India does not correspond to the conditions assumed in the above sample. Yet, at least during the peak agricultural seasons, almost everyone seeking work can find it. The number and timing of the peak seasons probably varies from region to region depending on the crop-pattern and the frequency of cropping. Those who remain unemployed even during the peak season must be very special cases. We need to identify the extent of such unemployment and the related situation. Of course, for many persons in rural India, particularly agricultural labourers, employment even during the busy season tends to be intermittent, and slack season unemployment is a serious problem. For the cultivators, if a wider reference period co-terminous with the typical production period (such as the normal agricultural season) were used in a survey, many of those found to be unemployed during a short reference period would be considered underemployed (working for less than the desired duration of time).

Some interesting information pertinent to this subject is available from the NSS Rounds undertaken during 1956-60, in which those classified as unemployed were asked whether they had "a job or enterprise at a future date". The data, summarized in Table 10 show that between 40 and 65 per cent of the unemployed had some job or enterprise at a future date. Apparently, no question was asked about the nature of the job or enterprise the respondent expected to take up in the future. As a result, one does not know how many of them were seasonally unemployed agricultural workers. Also one might have some reservations about the validity

of answers to a question about the intrinsically uncertain future. But as might be expected, the percentage of new entrants tends to be smaller among those reporting a job or enterprise at a future date. 13/ Thus the data are not implausible and quite probably they suggest an interesting facet of the prevailing situation. With some supplementary questions on the duration of unemployment and the nature of future job or enterprise which the respondents expected to take up, the data, such as those presented in Table 10, can be quite meaningful.

The effect of the reference period on the estimate of the level of unemployment, already noted above, needs some discussion. If even nominal work during the reference period entitle a person to be classified as 'employed' a wide reference period naturally lowers the chance of a person being found unemployed. This is evident from the estimates of the level of unemployment from the 11th, 12th and 13th Rounds presented earlier in Table 5 and 6. In these Rounds, the NSS had collected data on economic activity with a simultaneous use of a dual reference period of a day and a week. The wider reference period naturally gave a lower estimate of unemployment.

Interestingly, however, the 1961 Census data are not wholly consistent with the above hypothesis regarding the effect of the reference period on the estimate of unemployment. In Table 4, the estimate of unemployment based on the 1961 Census has been compared with that reported by the 16th and 17th Rounds of the NSS. It was argued earlier that because of the wide reference period adopted to enumerate seasonal workers, the 1961 Census reported a low level of rural unemployment. However, despite the fact that the reference period used by the Census to enumerate the non-seasonal workers was a fortnight, compared to a week in the NSS Rounds, the incidence of unemployment among males in urban India, reported by the 1961 Census, was a little higher than that reported by the 16th and 17th Rounds of the NSS in urban areas. In the case of urban females, however, the difference was in the expected direction and, relatively, much larger. The 16th Round data really pertain to the period July-December 1960 because the planned

TABLE 10

SOME CHARACTERISTICS OF THE UNEMPLOYED IN RURAL AND URBAN INDIA

According to Whether They Had a Job or an Enterprise at a Future Date, as Reported by the Specified Rounds of the National Sample Survey

Round/ Period	Unemployed with job or Enterprise at a Future Date			Unemployed Not with Job or Enterprise at a Future Date			Sample Persons (All Unemployed)
	As % of Population	As % of All Unemployed	% of New Entrants	As % of Population	As % of All Unemployed	% of New Entrants	
			RURAL MALES				
11th & 12th (1856-57)	1.25	50.40	7.20	1.23	49.60	11.38	3,439
14th (1958-59)	1.22	58.94	8.20	0.85	41.06	15.29	352
15th (1959-60)	0.94	50.81	13.83	0.91	49.19	17.58	1,993
			RURAL FEMALES				
11th & 12th (1956-57)	1.12	50.68	1.79	1.09	49.32	2.75	3,113
14th (1958-59)	1.41	53.82	1.42	1.21	46.18	3.31	437
15th (1959-60)	0.91	46.19	4.40	1.06	53.81	4.72	1,434
			URBAN MALES				
11th & 12th (1956-57)	1.73	43.58	29.48	2.24	56.42	33.48	613
13th (1957-58)	1.69	46.69	22.49	1.93	53.31	29.53	1,066
14th (1958-59)	1.22	65.43	36.88	0.64	34.57	42.19	367
15th (1959-60)	1.34	51.54	41.79	1.26	48.46	42.86	508
			URBAN FEMALES				
11th & 12th (1956-57)	0.33	39.76	18.18	0.50	60.24	36.00	211
13th (1957-58)	0.50	40.65	12.00	0.73	59.35	13.70	280
14th (1958-59)	0.23	54.13	13.04	0.20	45.87	40.00	70
15th (1959-60)	0.39	46.99	25.64	0.44	53.[illegible]1	20.45	127

Sources: The National Sample Survey, Reports No.52(pp.57,59); 100(p.37):148(Draft) (p.28);52(pp.114,116);63(pp.51,53);85 (pp.48,52); 169 (Draft)(pp.24,26)

TABLE 11

DATA ON UNEMPLOYMENT IN URBAN AND RURAL INDIA

According to the 1961 Census and the 16th and 17th Rounds of the National Sample Survey

	Urban India			Rural India		
	1961 Census	NSS Rounds 16th (1960-61)	NSS Rounds 17th (1961-62)	1961 Census	NSS Rounds 16th (1960-61)	NSS Rounds 17th (1961-62)
Labour Force as % of Population						
Males	54.15	52.30	50.96	58.51	55.67	52.20
Females	11.25	13.55	10.85	31.45	27.72	22.16
Unemployed as % of Population						
Males	1.75	1.29	1.54	0.29	1.44	1.95
Females	0.16	0.30	0.36	0.03	1.80	1.89
Unemployed as % of Labour Force						
Males	3.23	2.47	3.02	0.50	2.59	3.74
Females	1.42	2.21	2.32	0.10	6.49	8.53

Source: 1) Census of India, 1961, Vol.I, India, Parts II-B -(i) and II-B (iii), General Economic Tables, Tables B-I and B-IX

2) The National Sample Survey Reports:

1) No.103, Sixteenth Round, Urban, p.24.
2) No.127, Seventeenth Round, Urban, p.19.
3) No.114, Sixteenth Round, Rural, p. 20.
4) No.197 (Draft), Seventeeth Round, Rural, pp.20-22.

second visit to the sample households could not be undertaken. Besides, any seasonal influx into the urban areas of the unemployed from the rural areas would probably occur during the slack agricultural season, usually after December. Therefore, the 16th Round estimates of the incidence of unemployment are somewhat unduly low compared to the 17th Round, but the relative position of the NSS and the 1961 Census data on urban unemployment is the same for both the Rounds. Thus, it is difficult to explain the higher incidence of unemployment among urban males reported by the 1961 Census.

It is argued that the NSS surveys understate the level of unemployment by classifying persons who work only nominally as employed. However, at least in urban areas, even if persons working for 28 hours or less during the reference week and available for additional work (i.e. persons working part-time involuntarily) are included in the category of unemployed, the percentage of the latter in the population, according to the 17th Round, would increase from 0.98 to 1.96 only. 14/ The resulting estimate of urban unemployment would still remain significiantly below the number of work-seekers registered with employment exchanges. One might speculate that the difference between the NSS and the 1961 Census estimates of the level of unemployment among urban males is due to the NSS procedure of classifying persons with nominal work during the reference week as employed. However, in the 1961 Census, also, there was no criterion about the quantum of work performed by persons with "regular employment in any trade, profession, service, business or commerce" who were "employed during any of the fifteen days" preceding the date of enumeration. Besides, since the census estimate of the level of unemployment among urban females was lower than that reported by the NSS, the contrary observation regarding the estimate of unemployment among urban males cannot be attributed to the absence of any specific criterion about the quantum of work performed by those classified as employed in the NSS. 15/

Finally, it was suggested in Section II that the unpaid family workers might not seek work outside their family

enterprises and, therefore, might be classified as outside the labour force when without work. The empirical validity of this hypothesis could be tested if the unemployed who have worked before are asked about their last occupation, industry and status and the data are tabulated properly. Unfortunately, no information is available on this subject.

Employment Exchange Data:

As noted earlier, the Employment Exchange data on the number of jobseekers on the Live Register pertain to urban areas and are often interpreted as indicating the level of urban unemployment. If one accepts this interpretation, the volume of urban unemployment suggested by the Employment Exchanges substantially exceeds the figure indicated by the NSS and the 1961 Census. Since the Exchanges do not cover the whole of urban India, the observed discrepancy would appear to be an underestimate.

The major point of explanations offered for this discrepancy is that not all persons on the Live Register of Employment Exchanges at any time are unemployed. Many of them tend to be (i) employed persons seeking better or more stable jobs or (ii) students; some of them belong to rural areas; an unknown percentage of them perhaps register at more than one Employment Exchange. The effect of these factors is to inflate the level of unemployment suggested by the Employment Exchange data and, quite probably, it is not fully offset by the fact that the registration is voluntary and not all the urban unemployed register with the employment exchanges.

An attempt is made to collect information on the proportion of urban unemployed registered with Employment Exchanges through the NSS. Persons classified as unemployed are asked whether they are on the Live Register of any Employment Exchange. In the 9th, 10th and the 15th Rounds, information was collected on the attitude to registration with Exchanges. The responses are tabulated according to the educational level of the unemployed persons. The available information from different Rounds has been summarized in Table 12.

TABLE 12

PERCENTAGE OF UNEMPLOYED PERSONS IN URBAN INDIA, WITH THE SPECIFIED EDUCATIONAL LEVEL, REPORTING REGISTRATION WITH AN EMPLOYMENT EXCHANGE

According to the Various Rounds of the National Sample Survey

Rounds	All	Illiterate	Literate but Below Matric	Matric but Below Graduate	Undergraduate with Technical Education	Graduate And Above	Not Recorded
			PERSONS				
9th	15.86 (7611)	3.92 (1239)	12.90 (4289)	33.42* (1416)	-	31.48@ (662)	-
10th	14.46 (5287)	3.46 (84)	12.76 (3038)	33.85+ (1255)	-	-	-
15th	11.30 (635)	2.86 (185)	8.85 (346)	38.04 (82)	33.33# (10)	41.38 (12)	-
16th	33.47 (1356)	5.39 (N.A.)	28.60 (N.A.)	64.32 (N.A.)	-	59.70 (N.A.)	-
17th	30.33 (4680)	4.04 (188)	28.10 (2043)	61.11 1821)	49.09 (300)	57.59 (326)	2.14 (2)
18th	40.89 (757)	3.60 (N.A.)	36.85 (N.A.)	71.36 (N.A.)	72.21 (N.A.)	69.82 (N.A.)	-
19th	38.34 (973)	7.08 (151)	35.49 (504)	59.22 (220)	69.71 (45)	53.44 (52)	-
20th	38.36 (857)	5.30 (123)	34.02 (447)	65.76 (204)	65.52 (38)	54.21 (44)	100.00 (1)
21st	43.58 (2235)	11.19 (363)	36.21 (1082)	68.31 (525)	70.95 (130)	69.47 (131)	4.67 (5)
			MALES				
15th	12.65 (508)	4.88 (113)	8.79 (312)	37.45* (65)	29.41# (7)	50.00 (11)	-
17th	32.07 (4095)	5.34 (N.A.)	28.84 (N.A.)	61.56 (N.A.)	44.88 (N.A.)	56.95 (N.A.)	3.49 (N.A.)
18th	42.88 (612)	5.98 (N.A.)	38.21 (N.A.)	73.14 (N.A.)	52.65 (N.A.)	65.26 (N.A.)	-
19th	39.54 (789)	11.03 (89)	35.97 (458)	58.35 (175)	71.66 (29)	51.18 (37)	-
20th	40.55 (696)	9.95 (73)	33.22 (409)	66.39 (160)	76.17 (21)	62.53 (32)	100.00 (1)
21st	44.04 (1807)	14.18 (230)	35.02 (975)	69.86 (403)	68.50 (92)	75.48 (102)	4.67 (5)

continued....

Table 12 Continued....

Round	All	Illiterate	Literate but below Matric	Matric but Below Graduate	Undergraduate with Technical Education	Graduate And Above	Not Recorded
			FEMALES				
15th	6.62 (127)	0.52 (72)	9.33 (34)	40.74* (17)	-	100.00 (1)	-
17th	21.83 (585)	1.31 (N.A.)	20.08 (N.A.)	58.55 (N.A.)	61.02 (N.A.)	59.89 (N.A.)	-
18th	31.98 (145)	-	22.63 (N.A.)	63.52 (N.A.)	100.00 (N.A.)	89.07 (N.A.)	-
19th	32.86 (184)	1.79 (62)	27.99 (46)	62.30 (45)	66.82 (16)	61.15 (15)	-
20th	29.60 (161)	-	43.15 (44)	63.07 (44)	51.84 (11)	36.25 (12)	-
21st	41.56 (428)	5.89 (135)	47.93 (103)	63.00 (123)	77.09 (38)	47.45 (29)	-

" Data for the 9th Round are based on Sub-Samples 1 and 2 only
* Matric Only
@ Above matric
+ Matric and above
¢ Persons with education upto Intermediate

Note: Figures in parentheses indicate the number of unemployed persons with the particular educational qualification, in the sample.

Source: National Sample Survey, Reports No.62(p.15); 34(p.148); 103(p.50); 127(p.64); 164(Draft)(p.36); 169(Draft)(pp.98-100); 181(Draft) (p.58); 189(Draft) (pp. 64-66); 209(Draft)(p. 112).

It should be noted that these proportions are based on the rather small number of unemployed caught in the net of NSS surveys, and given the wide fluctuations from Round to Round the validity of these estimates for adjusting the Employment Exchange figures is subject to reservations. The 15th Round estimate is also quite out of line with the corresponding estimates for the earlier and the subsequent Rounds. The sudden rise, after the 15th Round, in the proportion of unemployed registered with an Exchange appears very surprising. Between the 16th and the 21st Rounds, the percentage of unemployed reported to be registered has fluctuated between 30.33 (17th Round) and 43.58 (21st Round). As would be expected, the proportion of registrants tends to be much higher among the matriculate and higher educated unemployed persons than among non-matriculate literates or the illiterates.Except in the 15th Round, the percentage of gistrants was higher among unemployed males than among females. According to the latest (21st) Round, almost 70 per cent of the unemployed matriculates and 75 per cent of the graduates among males were registered with an Employment Exchange.

As for other factors, a recent survey of 18,000 job-seekers on the Live Register on March 1, 1968 has provided the first estimates of the proportion of registrants already employed or from rural areas. 16/ This information is shown below in Table 13.

It should be noted that the percentage from rural areas was lower among graduate job-seekers than among the non-graduates; yet about on-fifth of them were from the rural areas. Quite probably, these persons return to their rural native places because of the lack of urban jobs, the high cost of living in the towns and the availability of material and moral support from their families in the villages. The rural-urban dichotomy is, therefore, not altogether satisfactory in this respect. While it is necessary to recognize the rural-urban location of the registrants for comparing the NSS estimates of urban unemployment with the number of persons on the Live Register, even the registrants from rural areas are probably in search of urban or urban-type jobs.

TABLE 13

PERCENTAGE OF RURAL RESIDENTS AMONG JOB SEEKERS REGISTERED WITH EMPLOYMENT EXCHANGES AND THE ACTIVITY STATUS OF THE URBAN JOB-SEEKERS ACCORDING TO THEIR EDUCATIONAL LEVEL

Educational Level of Job-Seekers	From Rural Areas	Activity Status of Urban Job-Seekers			
		Employed	Un-employed	Students	Total
1. Graduates and above:	21.2	36.5	50.4	13.1	100.0
a) Technical/professional	13.3	41.7	53.9	4.4	100.0
b) Arts, Science, Commerce.	23.3	35.0	49.4	15.6	100.0
2. Matriculates but below Graduates:	35.4	33.9	52.3	13.8	100.0
a) With technical/professional degree/diploma	39.5	38.6	55.2	6.2	100.0
b) Others	37.9	31.6	50.9	17.5	100.0
3. Literates below matriculation	36.7	51.2	46.7	2.1	100.0
4. Illiterates	26.0	46.2	53.8	-	100.0
All categories	34.4	43.5	49.6	6.9	100.0

Source: D.G.E.T., Report on Survey to Ascertain the Proportion of Employed Persons on the Live Register of Employment Exchanges New Delhi, cyclostyled, 1969, p. 10; and a communication to the Committee of Experts on Unemployment Estimates.

Moreover, as in the NSS, a person having some work, however nominal, during the week preceding the date of interview was classified as employed in the D.G.E.T. Survey. It is only to be expected that persons registered with the Employment Exchanges would indeed try to obtain some means of support pending their placement by the Exchange. Until they obtain a satisfactory job, they may not ordinarily report the fact of their having found such work to the Employment Exchange in the hope of obtaining a better opportunity. Among the registrants classified as employed in the D.G.E.T. Survey, about 58 per cent had work for the normal working hours relevant to the particular occupation and were classified as having regular employment. Of those classified as non-regularly employed, 75 per cent had worked for 25 hours or more during the reference week. 17/ According to the information on the monthly earnings,85 per cent of the employed registrants had an income of less than Rs.200. 18/ Persons with such low incomes naturally seek the assistance of Employment Exchanges for better jobs.

One might note here the possibility that the proportion of employed registrants reported by the D.G.E.T.survey might be an underestimate because of the likely effort by the respondents to ensure consistency between their answers and the fact of their registration with an Employment Exchange. The monthly income reported might also be understand. However, it is also true that under the prevailing inflationary conditions, an urban resident needs a much higher income than was reported by the employed registrants in the D.G.E.T. survey even if he aims at a very modest level of living. In the ultimate analysis, one cannot separate the question of level of income from that of a job or work.

As for the student registrants, it is difficult to judge whether they continue studying because of the non-availability of jobs. Some of them, perhaps, seek part-time or vacation jobs and other would prefer to study in the morning or evening colleges if they can combine earning with learning. (At least in Greater Bombay, many of the students or liberal Arts colleges tend to be full-time employees who study outside the office hours). It is also possible that since the Employment Exchanges refer the names of registrants

to potential employers according to seniority in registration, students register in anticipation of completion of their academic studies.

The preceding observations lead to the conclusion that the factors that tend to inflate the number of persons on the Live Register of Exchanges are complex. The "live" registrations reflect demand for income and/or better jobs even if they do not reflect chronic unemployment. From the point of view of mitigating social discontent, demands of both types need attention. However, the basic purpose of Employment Exchanges is to bring about an expeditious matching between the job requirements of the registrants and the labour requirements of the established employers i.e. to minimise the extent of frictional employment. A study of the extent to which the Employment Exchanges fulfil this role and assist job-seekers with different characteristics will naturally be of intrinsic interest. It might also indicate the broad trends in the job market. But to interpret the figures of the number of persons on the Live Register of Exchanges as indicating the volume of urban unemployment will be a dubious exercise. As noted above, some of the necessary correction factors are available only from the recent D.G.E.T. survey of persons on the Live Register. The applicability of the other correction factor based on the NSS estimate of the proportion of unemployed registered at an Exchange is also subject to reservations. Therefore, the present study will not attempt to compare the absolute figures of persons on the Live Register of Exchanges with the 1961 Census and the NSS estimates.

IV. THE CHARACTERISTICS OF THE UNEMPLOYED

In order to design effective programmes to promote a fuller utilization of studied carefully. These characteristics include sex, age, educational attainment and/or skill, rural-urban residence, prior work experience (if any), job preferences and regional location. An analysis of the prevailing situation must also focus attention on these variables to permit proper understanding of the underlying factors.

For this purpose, it is useful to define the incidence

of unemployment in terms of the unemployed as a percentage the total labour force. In India, it has often been the practice to show the unemployed as a percentage of population of the relevant sex. In the latter case, the denominator includes persons who are neither seeking nor available for work. It is perhaps more meaningful to exclude such persons from consideration while examining the level of unemployment. In defence of the present procedure, it can be said that, in view of the seasonal fluctuations in the size and composition of the rural labour force, population is a more stable base for measuring the level of unemployment. Perhaps, it is useful to adopt both the indices. However, the following discussion will generally be in terms of the percentage of unemployed in the labour force.

Incidence of Unemployment by Sex:

Some data on unemployment were presented earlier in Tables 5, 6, 10 and 11. The unemployed were shown as a percentage of the population in some of the tables and as percentage of the labour force in others.

According to the NSS estimates for urban India, shown in Table 5, the percentage of unemployment was generally lower among females than among males. The only exception was the estimate for agricultural labour households surveyed during the 11th and the 12th Rounds. In rural India the percentage of unemployment was reported to be higher among females than among males, beginning with the 14th Round.

The figures in Table 6 suggest an interesting steady decline in the percentage of rural unemployed males, after the 10th Round, from 2.48 per cent during the 11th & 12th Rounds (1956-57) to 0.98 per cent during the 21st Round (1966-67). (The only exception is the estimate based on the 17th Round). The decline is attributable partly to the widening of the reference period from one day to one week; but a continued downward trend in all subsequent Rounds, except the 17th, is somewhat puzzling. The data for rural females do not show a clear trend. The estimates from the

19th and 21st Rounds are based on a relatively small number of households for whom the Integrated Household Schedule was canvassed. One hopes that the data from the 18th and the 20th Rounds will also be tabulated to assess whether the trend was continuous. However, whether the trend reflects a real decline in the extent of rural male unemployment is difficult to judge. Undoubtedly, there was a substantial increase in the area under cultivation and irrigation as well as in the production of food grains during the decade preceding 1966-67. There was a simultaneous substantial increase in the labour input in agriculture. Of course, the rural male population and the labour force have also increased between 1956-57 and 1966-67. But it is possible that the increase in labour input has exceeded the growth of the labour force.

Even if the incidence of unemployment is higher among females, their lower labour force participation rates imply a smaller absolute number of females classified as unemployed than of males. It is likely, however, that many of the unemployed females happen to be widows, and divorced or separated women without alternative means of support. As such, they are likely to form a specially disadvantaged group. According to some impressionistic information regarding persons taking advantage of Khadi centres in the country, many of the persons spinning yarn by hand tend to be elderly widows or indigent women. If a welfare programme is to be formulated for the unemployed, the characteristics of unemployed persons will have to be studied more intensively to take into account the possible availability of other means of support.

Regional Variations:

Table 14 shows the incidence of unemployment in the urban areas of different states and Union territories, reported by the NSS Rounds between 1963-64 (18th Round) and 1967-68 (22nd Round). The estimates of female unemployment based on the quick tabulation of the 22nd Round data are substantially below those from earlier Rounds and may not reflect a real change in the situation.

According to each of the five Rounds, Kerala and Tripura occupied the first and/or the second rank in the

incidence of male unemployment. Madras had the third rank in four out of five Rounds (the fourth rank during the one other Round) and West Bengal had the fourth or the fifth rank in three out of five Rounds. In Manipur also, urban male unemployment has apparently been quite high. The consistency of these observations leads one to conclude that, relative to other parts of the country, urban male unemployment has indeed been very high in Kerala, Tripura, Madras, West Bengal and Manipur. Female unemployment rates appear to be highly correlated with male rates.

Incidence of Unemployment by Sex and Age:

Table 15 and 16 show the incidence of unemployment by sex and age in rural and urban India according to the various Rounds of the NSS. Table 17 shows similar estimates based on the 1961 Census count of the unemployed, adjusted by the present author to obtain their distribution by five-year age groups. 19/

It is striking that among urban young men aged 15-19, between 10 to 15 per cent of those available for work were found unemployed. Even in the next age group of 20-24, the reported incidence of unemployment among males often exceeded 5 per cent. The corresponding data for females show wider fluctuations but even among them the incidence of unemployment was much higher in the age group 16-26 or 15-24 than the level reported for women of all ages. Data for rural India is similar, though the absolute levels of unemployment are lower.

Alternative breakdowns of the data indicating the age composition of the unemployed support this picture. According to all sources of data, a majority of those reported as unemployed or work-seekers in urban areas tend to be in the age group 15-24 (or 16-26). In rural areas a smaller proportion of the unemployed are in this age group, a fact that can be explained by the greater availability of opportunities.

The New Entrants and Other Unemployed:

Some evidence on this subject is available from the

TABLE 14

INCIDENCE OF UNEMPLOYMENT* IN URBAN AREAS

Of Different States and Union Territories According to NSS Rounds between 1963-64 and 1967-68

State/Union Territories	ROUND									
	18th		19th		20th		21st		22nd	
	M	F	M	F	M	F	M	F	M	F
India	1.91	2.39	1.89	2.32	1.88	2.51	1.52	1.84	1.57	0.43
Andhra Pradesh	1.50	2.23	1.75	2.14	1.27	0.49	1.47	1.48	1.24	0.32
Assam	1.33	13.25	0.85	4.20	1.10	7.33	1.47	6.52	1.51	0.62
Bihar	2.11	2.27	1.83	2.05	1.09	0.90	1.33	1.85	1.28	0.23
Gujarat	1.39	0.42	0.69	1.05	1.39	1.61	1.30	1.08	0.94	0.59
Haryana	-	-	-	-	0.67	1.68	1.25	1.59	0.69	0.29
Jammu & Kashmir	1.03	4.97	0.42	2.42	0.87	-	0.43	2 14	0.72	0.04
Kerala	5.65	8.02	4.93	7.20	4.96	6.57	4.84	7.11	4.03	1.86
Madhya Pradesh	1.89	3.46	1.29	0.86	1.70	1.36	1.15	1.60	1.68	0.32
Madras	3.80	3.54	3.05	2.48	3.60	3.92	2.71	2.19	2.55	0.61
Maharashtra	1.71	1.45	2.19	1.83	2.19	1.82	1.54	1.44	1.43	0.39
Bombay City	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	1.61	2.11	N.A.	N.A.
Mysore	1.41	1.17	2.09	2.06	1.67	3.69	1.53	1.71	2.12	0.69
Orissa	1.71	2.62	0.96	2.52	1.01	2.07	1.15	2.52	1.06	0.06
Punjab	0.58	-	0.72	0.86	1.64	2.56	0.82	0.39	1.45	0.31
Rajasthan	1.09	2.10	1.69	1.15	1.57	0.14	1.32	0.36	0.64	0.12
Uttar Pradesh	1.14	0.60	1.42	2.05	1.23	0.97	0.67	0.55	0.68	0.07
West Bengal	2.51	4.81	2.20	2.69	1.55	7.57	1.43	2.04	2.28	0.56
Chandigarh	-	-	-	-	-	-	0.59	-	N.A.	N.A.
Delhi	1.72	2.43	0.55	4.50	1.67	5.68	0.91	3.74	0.58	0.28
Himachal Pradesh	-	-	0.79	-	2.52	-	-	-	1.86	1.38
Manipur	3.08	1.03	2.45	-	2.02	0.55	3.32	0.20	1.50	0.21
Tripura	3.87	8.74	3.48	17.79	4.13	11.58	4.17	16.64	4.62	4.41
Goa, Daman & Diu	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	0.45	-	1.59	1.11
Pondicherry	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	2.95	2.40	2.74	1.35

* Unemployed as per cent of the labour force

Source: The National Sample Survey, Report Nos:164(Draft) (pp.11-12); 181(Draft) (pp.18-19); 189(Draft)(pp.14-15); 209(Draft)(pp.31-32); and typescript tables based on quick tabulation for the 22nd Round.

Different Rounds of the NSS were conducted during the following periods.

18th Round: February 1963-January 1964;
19th Round: July 1964-June 1965;
20th Round: July 1965-June 1966;
21st Round: July 1966-June 1967;
22nd Round: July 1967-June 1968;

TABLE 15

THE INCIDENCE OF UNEMPLOYMENT* IN RURAL INDIA

By Sex and Age, According to the National Sample Survey Data for Specified Rounds

Age	Males			Females		
	9th Round	10th Round	11th & 12th Rounds	9th Round	10th Round	11th & 12th Rounds
7-15	0.92	2.33	3.76	0.06	3.16	7.54
16-17	2.92	5.05	6.01	0.59	2.19	10.17
18-21	2.78	5.05	6.69	0.56	2.79	10.24
22-26	1.26	1.87	5.24	0.24	3.24	9.64
27-36	0.23	1.29	3.97	0.18	3.00	9.36
37-46	0.12	1.12	3.91	0.25	1.93	10.26
47-56	0.16	1.62	3.65	0.08	2.40	9.45
57-61	0.33	1.04	3.99	-	-	8.94
62+	0.71	0.03	4.55	-	0.88	9.33
All Ages	0.85	2.01	4.50	0.23	2.62	9.48

Age	Males		Females		Age	Males		Females	
	14th Round	15th Round	14th Round	15th Round		16th Round	17th Round	16th Round	17th Round
5-11	2.88	1.44**	7.00	10.34**					
12-14	3.78	3.54	10.35	7.20	5-9	3.05	5.45	1.67	4.31
15	5.71	4.13	12.01	5.46	10.14	2.69	2.74	6.44	7.75
16-17	5.41	3.82	10.29	12.71	15-19	3.42	6.39	8.60	10.13
18-21	5.69	5.07	12.27	9.73	20-24	2.99	4.72	8.77	9.30
22-26	3.72	3.47	10.34	7.84	25-29	2.55	3.74	6.63	8.96
27-36	3.05	2.67	9.40	7.83	30-39	2.00	3.45	5.88	8.19
37-46	2.78	3.02	8.91	7.19	40-49	2.55	3.04	5.11	8.15
47-61	3.20	2.99	10.03	9.42	50-59	2.44	2.76	6.11	7.69
62+	4.14	2.21	8.18	5.81	60+	2.34	2.52	4.76	7.21
All Ages	3.64	3.17	9.83	8.35	All Ages	2.59	3.74	6.49	8.53

* Unemployed as per cent of the labour force.

continued....

** Figures refer to the age group 0-11.

The various N.S.S. rounds were undertaken during the time specified below:

Round	Survey Period	Reference period	N.S.S. Report No.	Pages
9	May-Nov. 1955	Usual status/a year	62	88-90
10	Dec. 1955-May 1956	One Day	34	42-44
11&12	Aug. 1956-Aug. 1957	One Day	52	57-59
14	July 1958-June 1959	One Week	100	47
15	July 1959-June 1960	One Week	148(Draft)	32
16	July 1960-June 1961	One Week	114	22-24
17	Sept.1961-July 1962	One Week	197(Draft)	20-21

Table 15 continued.....

Age	Males 19th Round	Males 21st Round	Females 19th Round	Females 21st Round
5- 9	1.76	10.65	0.50	16.97
10-14	4.23	4.52	4.95	5.03
15-19	4.34	3.65	8.75	6.89
20-24	3.73	2.49	10.28	4.73
25-29	2.34	1.27	6.85	2.95
30-39	1.71	1.14	7.84	3.25
40-49	2.47	1.05	8.31	3.68
50-59	2.39	1.21	8.83	4.62
60 +	1.62	0.85	5.57	3.96
All Ages	2.68	1.82	7.85	4.35

The various NSS rounds were undertaken during the time specified below:

Round	Survey Period	Reference Period	NSS Report No.	Pages
19	July 1964-June 1965	One Week	201 (Draft)	42-49
21	July 1966-June 1967	One Week	Preliminary	cyclostyled tables.

TABLE 16

THE INCIDENCE OF UNEMPLOYMENT** IN URBAN INDIA

By Sex and Age, According to the National Sample Survey Data for Specified Rounds

Age	Males 9th Round	Males 10th Round	Males 11th & 12th Round	Males 13th Round	Females 9th Round	Females 10th Round	Females 11th & 12th Round	Females 13th Round
7-15	6.33	4.77	8.46	15.16	2.59	3.83	6.35	7.93
16-17	14.90	13.61	16.43	13.26	8.93	10.32	19.56	10.45
18-21	17.72	17.37	18.44	14.90	9.05	9.02	12.43	18.56
22-26	8.25	7.51	8.48	7.92	4.40	5.97	7.30	12.45
27-36	2.92	3.72	4.90	4.49	2.39	4.26	5.35	6.43
37-46	2.36	3.21	4.97	4.05	1.19	2.72	4.05	8.15
47-56	1.99	2.98	4.86	4.90	0.53	1.58	3.64	8.50
57-61	1.99	2.65	7.52	6.36	0.79	0.55	3.63	9.01
62+	2.49	2.39	2.48	4.80	0.15	1.25	4.70	6.03
All Ages	5.75	6.01	7.55	6.88	3.02	4.22	6.47	9.49

Age	Males 14th Round	Males 15th Round	Females 14th Round	Females 15th Round	Age	Males 19th* Round	Males 21st Round	Females 19th* Round	Females 21st Round
0-11	0.72	6.32	-	-					
12-14	6.02	14.70	-	3.69	5- 9	1.48		-	-
15	7.23	9.79	-	9.73	10-14	3.79	1.26@	2.96	1.11@
16-17	15.86	17.58	2.61	16.62	15-19	10.01	5.61	14.18	5.71
18-21	9.59	11.91	8.96	11.76	20-24	3.99	4.06	12.57	4.42
22-26	4.93	5.78	4.97	7.57	25-29	2.81	1.40	12.25	1.97
27-36	1.84	2.46	3.05	4.83	30-39	0.53	0.53	6.10	1.15
37-46	1.43	1.96	2.00	5.07	40-49	1.16	0.47	3.53	0.68
47-61	1.98	3.32	5.14	4.70	50-59	2.92	0.52	5.82	0.52
62 +	1.86	1.72	1.82	6.83	60 +	1.21	0.17	1.88	-
All Ages	3.57	4.97	3.67	6.70	All Ages	2.63	1.52	7.31	1.84

* The data are based on the integrated household schedule.

continued...

** Unemployed as per cent of the labour force

@ These figures refer to persons aged 14 years only.

The various NSS Rounds were undertaken during the time specified below:

Round	Survey Period	Reference Period	NSS Report No.	Pages
9	May-November 1965	Usual status/a year	62	189-191
10	December 1955-May 1966	One day	34	97- 99
11&12	August 1956-August 1957	One day	52	114-116
13	September 1957-May 1958	One day	63	51- 53
14	July 1958-June 1959	One week	85	48- 53
15	July 1959-June 1960	One week	169 (Draft)	24- 26
19	July 1964-June 1965	One week	201 (Draft)	89
21	July 1966-June 1967	One week	209 (Draft)	35

continued.....

Table 16 continued....

Age	Males 16th Round	Males 17th Round	Females 16th Round	Females 17th Round
10-14	0.92	2.40	1.61	0.79
15-19	8.10	10.93	5.22	9.92
20-24	6.00	6.63	4.40	6.90
25-29	2.22	2.33	2.32	2.55
30-39	0.91	1.12	1.46	2.22
40-49	0.91	1.24	1.11	1.26
50-59	0.96	1.88	1.86	1.11
60 & above	0.49	-	0.07	-
Total	2.47	2.93	2.21	3.10

The estimates for the 17th Round refer to the data collected during the first visit only because the percentage age distribution of population in labour force is not available for the second visit. According to the combined data for the two visits, the incidence of unemployed for all ages was 3.02 and 3.32 per cent for males and females,respectively.

The various NSS Rounds were undertaken during the time specified below:

Round	Survey Period	Reference Period	NSS Report No.	Pages
16	July 1960-June 1961	One Week	103	16,24,31.
17	September 1961-July 1962	One Week	127	15,19,46.

TABLE 17

THE INCIDENCE OF UNEMPLOYMENT BY SEX, AGE AND RURAL-URBAN RESIDENCE IN INDIA

1961 Census Estimates

(per cent)

Age	Urban Females		Rural India	
	Males	Females	Males	Females
10-14	3.42	0.26	0.38	0.11
15-19	10.90	4.28	1.51	0.20
20-24	6.37	3.38	1.09	0.23
25-29	2.91	1.39	0.53	0.12
30-34	1.74	0.86	0.33	0.09
35-39	1.57	0.62	0.21	0.04
40-44	1.30	0.48	0.17	0.04
45-49	1.38	0.48	0.16	0.04
50-54	1.38	0.40	0.15	0.05
55-59	1.38	0.32	0.13	0.06
60-64	1.72	0.64	0.13	0.07
65-69	1.23	0.45	0.12	0.10
70-74	0.80	0.35	0.11	0.12
75 +	0.32	0.34	0.10	0.14
Age not stated	1.88	0.27	0.64	0.77
10 and over	3.25	1.41	0.51	0.11

Note: The incidence of unemployment shows the unemployed as per cent of the labour force or the economically active population (employed plus unemployed)

All unemployed in the age group 0-14 assumed to be aged 10-14.

NSS and the 1961 Census data on the unemployed which classify persons seeking work into those doing so "for the first time" (new entrants) and "not for the first time" (others).

(1) Urban India:

The data for urban India indicate that the unemployed "not seeking but available for work" were a very small proportion of all unemployed males but somewhat significant among females. The exclusion of this group from the category of unemployed after the 16th Round introduces an element of non-comparability in time series data. During the 19th Round in urban India, the definition of unemployed adopted for rural areas (which includes persons 'not seeking but available for work' among the unemployed) was used while canvassing the Integrated Household Schedule (Schedule 16). The resulting proportion of "inactive unemployed" in the urban population and among all urban unemployed far exceeded the corresponding estimates obtained during the period 1956-60. The reasons for this fact are difficult to understand. 20/

Beginning with the 16th Round, the percentage of new entrants among the urban unemployed males as well as females seems to rise to a level much higher than that reported for earlier Rounds. This is partly due to the fact that after the 15th Round, persons "not seeking but available for work" were not classified as unemployed in the urban labour force surveys by the NSS.

As expected, between 70 and 86 per cent of the new entrant unemployed males in the urban areas are reported to be in the age group 16-26 or 15-24. The corresponding proportion for females varies between 65 and 85 per cent. Among unemployed "seeking work not for the first time", the proportion of persons aged 15-24 or 16-26 (between 38 and 47 per cent among males and between 28 to 38 per cent among females) is relatively less than among the new entrant unemployed; it is nevertheless much higher than in the urban population (about 18 to 19 per cent). This is not surprising because the young persons are generally more likely to seek a change in job if they find their initial job incompatible

with their aptitudes or skills or educational qualifications or if job mobility can lead to an improvement in salary and/or status. Even if an attempt to change the job implied a temporary period of unemployment, other members of the family can support them. As persons grow older, they acquire a stake in their existing jobs and their job mobility inevitably declines.

(2) Rural India

In rural areas, the inactive unemployed (not seeking but available for work) are a more important category than in urban India, both among males and females. The unemployed seeking work for the first time form a small proportion of the unemployed males and are virtually insignificant among females. A concentration of the new entrant unemployed in the age groups 16-26 (or 15-24) is observed in the case of males but not among females.

It thus appears that, at least in urban areas, the problem of unemployment is most acute among persons who enter the labour market each year. Of course, it would be incorrect to suggest that persons who once find some job do not encounter the problem of unemployment. However, absorption into gainful employment of the new entrants into the labour force, whose numbers are likely to swell during the 1970's because of the accleration of population growth during the 1950's, becomes difficult partly because the decline in mortality tends to reduce the number of vacancies arising from deaths of people already employed. It is also true that ordinarily the new entrants are not equipped for the positions vacated by persons who withdraw from the labour force due to retirement or death. Moreover, our bureaucratic procedures of recruitment accentuate the problem of frictional employment for this group which has to spend quite a few months as a kind of waiting period before getting a job.

The importance of the observed preponderance of new entrants among the urban unemployed for policy formulation is obvious. For this purpose, it will be useful to make separate estimates of entries into and withdrawals from the labour force, with due account of the related characteristics

such as educational attainment, job preferences, etc. Analytical work in this field is likely to yield rich dividends.

Incidence of Unemployment by Marital Status:

The NSS data from some of the Rounds provide estimates of the labour force characteristics of the sample population by marital status. Table 18 shows the incidence of unemployment among persons in the labour force according to their marital status. The relative level of unemployment for each marital status category shows the relevant figure of incidence as a percentage of the incidence for all persons.

(1) Rural India:

The data for males as well females in rural areas show the relative level of unemployment to be the lowest for the currently-married and the highest for the divorced and separated (when the group is shown distinct). When the widowed, divorced and separated are grouped into one category, the incidence of unemployment appears to be the highest among the never-married. (except among never-married females surveyed during the 11th & the 12th Rounds). Also, the relative level of unemployment among never-married men in rural India seems to rise because during the 11th to the 16th Rounds the decline in the incidence of unemployment among the never-married males was less than among all males. Before attempting to interpret these data, let us first examine the situation reported for urban India.

(2) Urban India:

The data for urban India are available from five Rounds. For males, the lowest incidence of unemployment is reported sometimes for the widowed, separated and divorced and sometimes for the currently-married. For females, the lowest incidence is reported for the widowed divorced and separated. Except in the 13th Round, the level of unemployment among the currently-married females is intermediate between that of the never-married and the widowed, etc. Unemployment among the never-married appears to be relatively much higher, both among males and females.

TABLE 18

THE INCIDENCE OF UNEMPLOYMENT AND ITS RELATIVE LEVEL IN RURAL/URBAN INDIA, BY SEX AND MARITAL STATUS

According to the Specified Rounds of the National Sample Survey

(a) Rural India

Marital Status	ROUND 11th & 12th Incidence	11th & 12th Relative Level	14th Incidence	14th Relative Level	15th Incidence	15th Relative level	16th Incidence	16th Relative Level
				MALES				
Never Married	5.61	125	4.98	137	4.10	130	3.80	147
Married	4.13	92	3.17	87	2.78	88	2.15	83
Widowed	4.63	103	3.58	99	2.98	94)	3.37	130
Divorced & Separated	6.73	149	5.05	139	5.73	181)		
All	4.50	100	3.64	100	3.17	100	2.59	100
				FEMALES				
Never Married	8.71	92	10.02	102	9.61	115	7.55	116
Married	9.16	97	9.57	97	8.11	97	6.37	98
Widowed	10.65	112	10.07	102	8.31	100)	6.46	100
Divorced & Separated	15.81	166	16.02	163	10.26	123)		
All	9.47	100	9.83	100	8.35	100	6.49	100
				PERSONS				
Never Married	6.09	103	5.89	105	4.94	107	4.45	115
Married	5.61	94	5.19	93	4.32	94	3.54	91
Widowed	7.91	132	7.47	133	5.77	125)	5.10	132
Divorced & Separated	10.84	182	10.66	191	7.46	162)		
All	5.97	100	5.59	100	4.61	100	3.87	100

(b) Urban India

Marital Status	ROUND 13th Incidence	13th Relative Level	14th Incidence	14th Relative Level	15th Incidence	15th Relative Level	16th Incidence	16th Relative Level	17th● Incidence	17th● Relative Level
					MALES					
Never Married	14.30	208	10.09	283	13.16	265	6.72	274	8.89	303
Currently Married	4.58	67	1.75	49	2.65	53	1.20	49	1.34	46
Widowed, Divorced and Separated	6.07	82	3.21	59	2.68	52	1.00	41	1.37	47
All	6.88	100	3.57	100	4.97	100	2.47	100	2.93	100
					FEMALES					
Never Married	12.60	133	5.33	145	14.66	219	6.27	283	10.98	354
Currently Married	9.01	95	3.74	102	5.77	86	1.67	76	2.20	71
Widowed, Divorced and Separated	10.18	107	2.88	79	4.90	67	1.52	69	1.54	50
All	9.47	100	3.67	100	7.00	100	2.21	100	3.10	100
					PERSONS					
Never Married	14.13	92	9.70	271	8.67	164	6.69	278	9.59	307
Currently Married	5.27	72	2.04	57	3.11	59	1.28	53	1.54	49
Widowed, Divorced and Separated	8.24	112	3.57	100	3.58	68	1.45	54	1.53	49
All	7.35	100	3.58	100	5.28	100	2.97	100	3.12	100

● The data the 17th Round are based on the first visit to the selected households.

Sources: (a) Rural India; The National Sample Survey, Reports 52(pp.63,65,67); 100 (pp.86-87); 148 (Draft) (p.48); 114 (p.27, 29, 31).

(b) Urban India; The National Sample Survey, Report Nos.63 (pp.58,60 & 62), 85 (pp. 77-79); 169 (p.30,32 & 36); 103 (pp.17,32,56); 127(pp.19,21,43).

The factors likely to account for the relatively greater unemployment among the never-married are complex. In part, it is a correlate of the age of the unemployed, a majority of whom in urban areas tend to be in the age group 15-24 or 16-26. (See Table 16). The unemployed young men probably postpone their marriage until they can support a family. The relatively greater unemployment among never-married females, on the other hand, probably arises from their greater willingness to search for jobs pending marriage (After marriage not many women would actively look for jobs). Also, the never-married can perhaps be selective about the type of job or the level of salary if their parents can support them during their unemployment. Unlike the never-married, the married or the widowed tend to be older in age, with a stake in their jobs and perhaps unwilling to risk even a temporary duration of unemployment. The relatively high incidence of unemployment among the rural divorcees reflects the greater compulsion to earn their livelihood in the absence of their spouses.

Incidence of Unemployment by Educational Level:

Let us now examine the NSS data on the incidence of unemployment according to the educational attainment of the respondents. In view of the widespread concern in the country about the unemployment of the "educated", i.e., those who have studied upto Matriculation or beyond, it would be interesting to see whether the incidence of unemployment among such persons exceeds that among the less educated.

(1) Urban India:

The data in Table 19 suggest that the incidence of unemployment in urban areas among persons who have studied up to Matriculation or more was higher than among the non-matric literates and the illiterates. 21/ The incidence was the lowest for the illiterates perhaps because of the willingness of such persons to take up manual or menial work. 22/

When the data for the "educated" are tabulated separately for the matriculates, the graduates and the

TABLE 19

THE INCIDENCE OF UNEMPLOYMENT IN URBAN INDIA, BY SEX AND EDUCATIONAL ATTAINMENT, AND ITS RELATIVE LEVEL

According to the Specified Rounds of the National Sample Survey

	ROUNDS																	
	10th		11th & 12th		13th		14th		15th		16th		17th		18th		21st	
	Incidence	Relative Level	Incidence	Relative Level	Incidence	Relative Level	Incidence	Relative Level	Incidence	Relative Level	Incidence	Relative Level	Incidence	Relative Level	Incidence	Relative Level	Incidence	Relative Level
								PERSONS										
1. Illiterate	3.30	58	5.52	75	7.04	96	2.03	57	3.80	72	1.20	50	1.21	40	0.84	42	0.70	43
2. Literate but Below Matric	6.90	121	8.34	113	7.68	104	4.49	125	6.27	119	2.66	110	4.26	140	2.26	114	1.70	105
3. Matric and above	10.57	185	10.55	144	7.15	97	5.61	157	6.81	129	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
(a) Matric	11.27	197	11.71	159	8.31	113	N.A.	N.A.	N.A.	N.A.	6.98*	289*	5.07*	166*	4.74*	238	3.07	192
(b) Intermediate	13.48	236	14.19	193	4.78	65	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
(c) Graduate and Above	5.92	104	5.04	69	5.32	72	N.A.	N.A.	N.A.	N.A.	2.78	116	4.18	137	2.31	116	2.18	136
4. All	5.71	100	7.35	100	7.35	100	3.58	100	5.28	100	2.41	100	3.05	100	1.99	100	1.60	100
								MALES										
1. Illiterate	3.58	59	5.84	77	6.21	90	1.66	46	3.09	62)					0.73	38	0.64	43
2. Literate but Below Matric	6.81	113	9.20	108	7.45	108	4.41	124	5.94	120)					2.16	113	1.59	105
3. Matric and Above	9.81	163	9.55	126	6.34	92	5.11	143	6.10	123)	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
(a) Matric	10.56	176	10.40	138	7.33	107	N.A.	N.A.	N.A.	N.A.)					3.88*	203*	2.51*	165
(b) Intermediate	12.03	200	13.46	178	4.95	72	N.A.	N.A.	N.A.	N.A.)					N.A.	N.A.	N.A.	N.A.
(c) Graduate and Above	5.17	86	4.45	59	4.44	65	N.A.	N.A.	N.A.	N.A.)					2.19	115	1.82	120
4. All	6.01	100	7.55	100	6.88	100	3.57	100	4.97	100)					1.91	100	1.52	100
								FEMALES										
1. Illiterate	2.62	62	4.88	75	8.67	91	2.77	76	5.44	81)					1.10	46	0.77	42
2. Literate but Below Matric	9.00	213	10.96	169	11.87	125	6.45	176	10.75	160)					4.41	185	1.97	142
3. Matric and Above	20.07	476	25.22	390	19.34	204	13.95	381	15.00	224)	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
(a) Matric	20.13	477	31.29	484	23.74	250	N.A.	N.A.	N.A.	N.A.)					15.91*	666*	6.95	500
(b) Intermediate	58.66	1391	33.77	522	-	-	N.A.	N.A.	N.A.	N.A.)					N.A.	N.A.	N.A.	N.A.
(c) Graduate and above	12.03	285	10.77	166	15.02	158	N.A.	N.A.	N.A.	N.A.)					5.79	242	4.44	319
4. All	4.22	100	6.47	100	9.49	100	3.67	100	6.70	100)					2.39	100	1.34	100

* The data pertain to persons classified as "Matric but Below Graduate"

Source: The National Sample Survey Report 34 (pp.106, 108, 110); 52(pp.127, 129, 131); 63(p.67); 85(pp.60, 62, 64); 169(Draft) (pp.35-37); 103(pp.22, 36); 127(pp.24, 59-60); 164(Draft)(pp.16, 33-35); 209 (Draft) (pp.44, 113).

Note: The distribution of unemployed according to educational level in the 17th and 18th Rounds has been estimated by the author on the basis of the reported number of persons in the sample with given characteristics.

intermediates, one observes the interesting fact that the incidence of unemployment among graduates has been significantly lower than among the matriculates and the intermediates. Until the 17th Round (1961-62), unemployment among the graduates was reported to be less than among even the non-matric literates. Thereafter, the situation seems to have changed slightly, and the non-matric literates report lower unemployment than graduates.

The lower incidence of unemployment among the graduates than among the matriculates suggests the importance of a degree for finding a job. Apparently the excess-supply of graduates is less than that of matriculates or else, the graduates are employed in positions which do not require a formal degree. This observation indicates the rational consideration behind the widespread preference for college education. However, except during the 13th Round, those who went to college for two years but failed to get a degree seemed to be worse off than even the Matriculates in terms of their job prospects. Apparently, one's inability to complete a degree after going to college becomes a greater handicap in finding a job than inability to go to college altogether.

The data by sex give the impression that the incidence of unemployment among "educated" females tends to be substantially higher than among males. It should be noted here that the number of sample respondents in the category of "educated" females in the labour force has been rather small and, therefore, the estimates are likely to be subject to a sampling error.

The reasons for the above differences in the incidence of unemployment according to educational attainment lie in the complex interactions between the number and type (as also the salary level) of jobs that become available in the economy and the supply of school and college-educated persons, and their job preferences and reservation prices (i.e. the expected salaries below which they prefer to remain unemployed). A recent study of unemployment among the graduates in India suggests that "it is not that some people are permanently employed and others are permanently unemployed,

but rather that large number are made to wait a year or two before finding a first job". 23/ Further, in view of the close link between one's starting salary and the eventual salary and low job mobility, the search for employment until a 'satisfactory' job is found seems to be quite rational.

(2) Rural India:

The data shown in Table 20 suggest that as in urban India unemployment in the rural areas was higher among the "educated" than among the non-matriculates. Within the latter category, while the non-matriculate literate males reported higher unemployment than the illiterates, the converse was the case among females. When the data were tabulated for sub-groups of the non-matriculate literates, men with more education reported a higher incidence of unemployment. Among females, while the 16th and the 17th Round data (which distinguish between the primary and middle school education) did not show a clear relationship between the level of education and the incidence of unemployment, the earlier Rounds suggested a tendency similar to that observed among males. The data for sub-groups of the "educated" are based on small numbers and are subject to a relatively large sampling error. Therefore, one cannot infer whether the 16th Round data suggesting lower unemployment among graduate males than among non-graduate matriculates represent the siguation more faithfully than the 17th Round data which suggest little difference between the two groups in the rates of unemployment.

It must be reiterated that the very high incidence of unemployment recorded for educated females in rural areas is subject to the problem of sample size. Yet, educated women in rural areas probably do encounter problems in finding 'satisfactory' jobs (i.e. jobs that would meet their preferences). The rural job market for the educated is certainly more limited than the urban. Presumably, many of the unemployed matriculates in rural areas, particularly men, look for an urban job.

It is pertinent to note here the 16th Round data for rural India shown in Table 21, which suggest that the proportion of new entrants increased among the unemployed

TABLE 20

THE INCIDENCE OF UNEMPLOYMENT IN RURAL INDIA BY SEX AND EDUCATIONAL ATTAINMENT, AND ITS RELATIVE LEVEL

According to the Specified Rounds of the National Sample Survey

Educational Level	ROUNDS											
	10th		11th & 12th		14th		15th		16th		17th	
	Incidence	Relative Level	Incidence	Relative Level	Incidence	Relative Level	Incidence	Relative Level	Incidence	Relative Level	Incidence Level	Relative Level
					PERSONS							
1. Illiterate	1.84	87	5.86	104	5.66	107	3.71	105	3.72	96	5.13	100
2. Literate but below Matric	2.52	199	4.62	82	3.76	71	2.75	78	N.A.	N.A.	N.A.	N.A.
2(a) Literate but below Primary	N.A.	N.A.	N.A.	N.A.	3.44	65	2.40	68	3.51	91	4.37	85
(b) Primary & above but below Matric	N.A.	N.A.	N.A.	N.A.	4.18	79	3.25	92	4.03@	104@	5.25@	103@
(c) Middle School	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	6.17	159	5.77	113
3. Matric and above	17.24	813	12.78	227	12.59	238	7.98	226	N.A.	N.A.	N.A.	N.A.
(a) Matric	19.38	914	14.13	251	N.A.	N.A.	N.A.	N.A.	10.99	284	10.29*	201*
(b) Intermediate	16.64	785	4.99	88	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
(c) Graduate & above	-	-	15.24	271	N.A.	N.A.	N.A.	N.A.	3.46	89	11.14	218
4. All	2.12	100	5.63	100	5.29	100	5.53	100	3.87	100	5.12	100
					MALES							
1. Illiterate	1.49	74	4.23	94	3.42	94	3.01	94	2.12	82	3.41	91
2. Literate but below Matric	2.65	132	4.81	107	3.77	104	3.37	106	N.A.	N.A.	N.A.	N.A.
(a) Literate but below Primary	N.A.	N.A.	N.A.	N.A.	3.41	94	2.90	91	2.83	109	3.51	94
(b) Primary & Above but below Matric	N.A.	N.A.	N.A.	N.A.	4.27	117	4.05	127	3.10@	120@	5.01@	134@
(c) Middle School	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	6.04	233	5.47	146
3. Matric & above	17.65	878	12.38	275	12.68	348	9.68	303	N.A.	N.A.	N.A.	N.A.
(a) Matric	19.95	993	13.77	306	N.A.	N.A.	N.A.	N.A.	9.52+	368+	9.05*	243*
(b) Intermediate	16.64	828	4.98	111	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
(c) Graduate & above	0.00	-	13.67	304	N.A.	N.A.	N.A.	N.A.	3.47	134	9.27	248
4. All	2.01	100	4.50	100	3.64	100	3.19	100	2.59	100	3.74	100

continued.....

Table 20 continued...

Educational Level	ROUNDS											
	10th		11th & 12th		14th		15th		16th		17th	
	Incidence	Relative Level	Incidence	Relative Level	Incidence	Relative Level	Incidence	Relative Level	Incidence	Relative Level	Incidence	Relative Level
					FEMALES							
1. Illiterate	2.67	102	9.56	101	9.95	101	6.24	100	6.12	94	8.22	96
2. Literate but below Matric	0.81	31	6.72	71	6.72	68	6.05	97	N.A.	N.A.	N.A.	N.A.
(a) Literate but below Primary	N.A.	N.A.	N.A.	N.A.	6.59	67	5.59	89	12.46	192	14.83	174
(b) Primary and above but below Matric	N.A.	N.A.	N.A.	N.A.	7.01	71	7.03	113	19.40●	299●	9.49●	111●
(c) Middle School	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	10.39	160	14.85	174
3. Matric and above	-	-	37.92	400	29.49	300	22.60	362	N.A.	N.A.	N.A.	N.A.
(a) Matric	-	-	38.97	411	N.A.	N.A.	N.A.	N.A.	40.34	622	25.91*	304*
(b) Intermediate	-	-	-	-	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
(c) Graduate & Above	-	-	37.59	397	N.A.	N.A.	N.A.	N.A.	-	-	42.65	500
4. All	2.62	100	9.48	100	9.83	100	6.25	100	6.49	100	8.53	100

● The data pertain to persons with primary education only

+ The data pertain to Matriculates and intermediates together

* In the 17th Round, non-graduates with more than middle school education are classified as having "secondary" education. This category is presumed to include matriculates as well as intermediates.

Source: The National Sample Survey, Report 34 (p. 51, 53, 55) 52 (p.70); 100 (pp. 68-69); 148 (Draft) (p. 41); 114 (pp. 46, 48, 50); 197 (Draft) (pp. 28-31, 38-41, 48-51).

reporting higher educational attainment. 24/ The proportion of active work-seekers among the unemployed males also increased with a rise in the educational attainment. The distribution of unemployed females with primary or more education is based on a very small number of cases. However, this table, though based on only one Round, illustrates the possibility that the rural unemployed with different levels of educational attainment might have fairly dissimilar characteristics. The family backgrounds (in terms of the occupations of the other earners in the family, land holding, etc.) of the unemployed with different educational attainments might also differ; but unfortunately no information is available on the subject.

The Duration of Unemployment:

Those classified as unemployed during the NSS Rounds have often been asked a further question on the duration of their unemployment. The data collected in urban surveys have been tabulated according to the educational attainment of the unemployed, and often by sex. These data have been summarized below in Tables 22 and 23. The inter-Round non-comparability of duration classification has been avoided by appropriate adjustment but the differences in the classification of educational level could not be avoided.

In interpreting these data, one needs to note the differences in the proportion of unemployed for whom the data on duration of unemployment were not recorded altogether. The proportion of such persons was particularly high during the 13th Round in urban India. Also, in the 11th, 12th, and 13th Rounds (urban), the proportion in the 'not recorded' category was higher for the illiterate unemployed than for the literates, a fact that would affect the comparisons among persons with different educational attainments. However, the data for the 16th and subsequent Rounds seem to be generally comparable.

Admittedly, a question on the duration of unemployment is not easy to answer. Quite probably, nominal work in the past, such as would lead to a persons classification as employed during the reference week, would be overlooked,

by the respondents. Also, persons more willing to take up casual work would report shorter durations of unemployment than others seeking regular jobs. This last factor probably explains the fact that both in urban and rural India, the proportion of the unemployed reporting short-duration unemployment (up to 3 or 6 months) has generally been higher among the illiterates than among persons with higher educational attainments.

Except in the 19th Round, the proportion of urban unemployed without work for more than 6 to 12 months was higher among the "educated" (who had completed secondary education, i.e. were matriculates) than among other literates. When the graduates are distinguished from matriculates, the latter seem to be worse off than those who complete a degree. Thus, not only is the incidence of unemployment relatively lower among the graduates than among the matriculates (as seen in Table 19), the waiting period or the duration of unemployment also appears to be lower for the former than for those who do not acquire a college degree.

The available data for males and females are also shown in Table 22. In view of the small number of unemployed females in each educational category, inferences based on comparisons by sex are likely to be tentative. Yet, on the whole, one does not notice any sharp difference in the broad characteristics of the distribution of male and female unemployed according to the duration of their unemployment.

The data on the duration of unemployment of the rural unemployed are available from the 10th, 11th and 12th Rounds. (Table 23). The number of literate or educated females in the samples was too small to permit any inference. For unemployed males, however, the association between literacy or education and the duration of unemployment was similar to that observed for the urban unemployed. The proportion reporting unemployment of short duration (upto 3 months) was higher among the illiterates than among the non-matriculate literates or matriculates. Also, the proportion reporting unemployment for more than 6 months was higher among the matriculates than among others. However, the observation based on the 10th Round that nearly

one-fourth of the illiterate unemployed males were without work for more than one year seems to be difficult to believe. The decline in this proportion during the 11th & 12th Rounds was accompanied by a rise in the proportion of those for whom the data on duration of unemployment were not ordered. Presumably, the question on the duration of unemployment is more difficult to understand and answer in the rural setting than in the urban. It must be a matter for grave concern that between 20 and 40 per cent of the urban persons classified as unemployed in the various NSS Rounds reported unemployment for more than 1 year. It is a long "waiting period" and policy programmes must endeavor to shorten it. Despite the non-comparability between the economic situation and the employment market prevailing in the United States, it might be useful to note here some data pertaining to U.S.A. The highest category in the classification of duration of unemployment in the U.S. is 27 weeks and over. The highest percentage of unemployed; reporting such "long-term unemployment" (without work for 27 weeks and over) was 17.1 in 1961 and it has steadily come down to 5.5 in 1968. While the figures are not strictly comparable, a major part of the decline is believed to represent an actual decline in long-term unemployment. Further, only 10.8 per cent of such persons reporting long-term unemployment in 1968 had no previous work experience. 25/

The small proportion of unemployed persons with no prior work experience might be because of the American tradition of short-term vacation employment for the high school and college students. However, the availability of such jobs itself reflects the prevailing general shortage of labour. The Indian situation is entirely different. Yet an attempt needs to be made to provide some work experience at least as a part of the academic education in India.

Training and Job Preferences of the Unemployed:

It is pertinent to note that almost 80 per cent of the urban unemployed surveyed by the 16th Round of the NSS had not received any formal training that would equip them for specific vocations. 26/ Moreover, according to the

TABLE 21

PERCENTAGE DISTRIBUTION OF THE RURAL UNEMPLOYED OF EACH SEX AND EDUCATIONAL ATTAINMENT

As Reported by the 16th Round of the National Sample Survey

Educational Attainment	New Entrants	Other Work Seekers	Persons not seeking but Available for Full-time work	Part Time work	All Unemployed
		MALES			
Illiterate	6.03	45.70	43.10	5.17	100.00
Below Primary	2.00	41.33	50.00	6.67	100.00
Primary	10.19	47.10	37.86	4.85	100.00
Middle School	25.48	42.74	20.55	11.23	100.00
Matriculates and Intermediates	78.97	10.81	10.22	-	100.00
Graduates and Above	-	-	100.00	-	100.00
All	11.11	43.75	39.58	5.56	100.00
		FEMALES			
Illiterates	0.56	30.00	53.33	16.11	100.00
Below Primary	10.53	27.07	51.87	10.53	100.00
Primary	15.41	8.24	63.81	12.54	100.00
Middle School	28.00	18.40	53.60	-	100.00
Matriculates and Intermediates	69.42	-	22.81	7.77	100.00
All	2.22	28.89	53.33	15.56	100.00

Source: The National Sample Survey Report 114, pp.46, 48.

TABLE 22

PERCENTAGE DISTRIBUTION OF UNEMPLOYED PERSONS WITH THE SPECIFIED EDUCATIONAL LEVEL, BY THE DURATION OF THEIR UNEMPLOYMENT

According to the Specified Rounds of the NSS in URBAN India

Educational Level	Duration of Unemployment					Total	Sample Persons
	Upto 3 months	3 to 6 months	6 months to 1 year	1 Year & Over	Not Recorded		
			10th Round				
1. Illiterate	38.72	5.50	22.87	27.58	5.36	100.00	984
2. Literate but below Matric	16.51	7.62	21.15	48.72	6.00	100.00	3038
3. Matric & above	10.34	7.43	29.77	44.06	8.40	100.00	1264
4. Not Recorded	-	-	-	100.00	-	100.00	1
5. Total	20.86	7.05	23.21	42.58	6.30	100.00	5287
			11th & 12th Rounds				
1. Illiterate	51.35	5.98	11.32	11.89	19.46	100.00	331
2. Literate but below Matric	30.16	11.89	17.14	28.39	12.42	100.00	626
3. Matric & above	15.14	9.05	31.46	32.75	11.60	100.00	186
4. Not Recorded	20.25	-	79.75	-	-	100.00	2
5. Total	34.44	9.61	17.64	23.87	14.44	100.00	1145
			13th Round				
1. Illiterate	55.46	5.42	5.45	9.60	24.07	100.00	373
2. Literate but below Matric	31.71	9.14	13.66	28.49	17.00	100.00	554
3. Matric & above	6.20	15.06	33.22	35.22	10.30	100.00	135
4. Total	38.33	8.31	12.49	21.81	19.06	100.00	1062
			16th Round				
1. Illiterate	48.14	9.21	14.38	20.83	7.44	100.00	601
2. Literate but below Matric	22.98	13.59	20.83	41.55	1.05	100.00	2020
3. Matric but below Graduate	16.62	12.21	19.08	49.88	2.21	100.00	1008
4. Graduate & above	24.94	18.30	18.24	38.52	-	100.00	176
5. Not Recorded	41.49	-	41.49	17.02	-	100.00	5
6. Total	26.84	12.47	18.97	39.07	2.65	100.00	3810
			17th Round				
1. Illiterate	65.33	11.60	11.29	10.49	1.29	100.00	1973
2. Literate but below Secondary	29.52	17.22	23.98	28.06	1.22	100.00	6287
3. Secondary	22.56	21.48	28.52	27.21	0.23	100.00	2710
4. Graduates excluding those in technical line	24.77	25.32	24.08	25.76	0.07	100.00	442
5. Rest	26.49	20.97	19.81	32.73	-	100.00	59
6. Total	36.91	16.96	21.72	23.47	0.94	100.00	1212*

continued....

Table 22 continued....

Educational Level	Duration of Unemployment: Upto 3 months	3 to 6 months	6 months to 1 Year	1 Year & Over	Not Recorded	Total	Sample Persons
			18th Round				
1. Illiterate	53.00	17.83	11.06	8.41	9.70	100.00	129
2. Literate but below Secondary	28.63	20.41	24.08	25.12	1.76	100.00	397
3. Secondary	18.57	22.10	30.06	28.50	0.77	100.00	161
4. Rest	-	-	-	-	100.00	100.00	1
5. Total	30.38	20.54	22.42	23.36	3.30	100.00	757*
			19th Round				
1. Illiterate	49.57		49.01		1.42	100.00	52
2. Literate but below Primary	47.84		52.16		-	100.00	45
3. Primary to below secondary	42.84		56.00		1.16	100.00	220
4. Secondary	47.87		50.08		2.05	100.00	405
5. Graduate and above	67.90		23.01		9.09	100.00	151
6. Not Recorded	-		-		100.00	100.00	1
7. Total	50.17		46.93		2.90	100.00	973
			21st Round				
1. Illiterate	62.19	12.05	11.33	11.18	3.25	100.00	314
2. Literate but below secondary	28.33	22.28	26.38	21.24	1.77	100.00	1068
3. Secondary	20.91	22.98	33.49	21.77	0.85	100.00	578
4. Graduates	26.99	29.20	22.02	19.01	2.78	100.00	143
5. Other than Graduates Having Technical Education	30.78	17.44	29.94	21.34	0.50	100.00	128
6. Not Recorded	75.07	24.93	-	-	-	100.00	4
7. Total	32.25	20.91	25.50	19.56	1.78	100.00	2235

* The data for 641 unemployed Persons recorded in the 17th Round and 69 unemployed persons recorded in the 18th Round with various technical qualifications could not be aggregated for presentation in the table.

Source: The National Sample Survey, Reports No.34 (p.139); 52 (p.143); 63 (p.131); 103 (p.49); 127 (p.63); 164 (Draft) (p. 35); 181 (Draft) (p.57); 209 (Draft) (p.117).

Table 22 continued..

UNEMPLOYED MALES

Educational level	Duration of Unemployment: Upto 3 months	3 to 6 months	6 months to 1 Year	1 Year & above	Not Recorded	Total	Sample Persons
			10th Round				
1. Illiterate	34.02	6.10	22.05	27.12	14.71	100.00	803
2. Literate but below Matric	16.41	7.80	21.48	48.25	6.06	100.00	2894
3. Matric and above	10.55	8.16	28.31	44.12	12.86	100.00	1196
4. Not Recorded	-	-	100.00	-	-	100.00	1
5. Total	19.03	7.51	24.32	43.09	6.36	100.00	2874
			11th & 12th Rounds				
1. Illiterate	51.41	5.55	14.85	14.67	13.52	100.00	229
2. Literate but below Matric	31.08	11.75	17.10	27.75	12.82	100.00	583
3. Matric & above	16.14	19.96	27.89	33.98	12.03	100.00	160
4. Not Recorded	-	-	100.00	-	-	100.00	851
5. Total	33.98	9.85	18.35	25.26	12.56	100.00	975
			13th Round				
1. Illiterate	33.38	10.24	9.79	14.95	31.64	100.00	224
2. Literate but below Matric	23.01	9.40	13.84	28.89	24.86	100.00	508
3. Matric & above	4.66	13.97	30.73	32.36	18.28	100.00	119
4. Total	23.07	10.23	15.15	25.92	25.63	100.00	851
			18th Round				
1. Illiterate	50.72	18.81	9.79	11.62	9.06	100.00	76
2. Literate but below Secondary	29.12	25.32	24.09	25.21	1.26	100.00	359
3. Secondary	19.60	21.57	28.02	29.87	0.94	100.00	128
4. Total	29.86	21.05	22.33	24.44	2.32	100.00	612*
			19th Round				
1. Illiterate	- 47.34 -		- 50.82 -		1.84	100.00	37
2. Literate but below Primary	- 54.64 -		- 45.36 -		-	100.00	29
3. Below Secondary	- 43.98 -		- 55.08 -		0.94	100.00	175
4. Secondary	- 49.47 -		- 48.53 -		2.00	100.00	458
5. Graduate & above	- 68.83 -		- 23.19 -		7.98	100.00	89
6. Not Recorded	- - -		-100.00 -		-	100.00	1
7. Total	- 50.65 -		- 46.95 -		2.40	100.00	789

*The data for 49 unemployed males with various technical qualifications recorded in the 18th Round, could not be aggregated for presentation in the table.

Source: The National Sample Survey, Reports No. 34 (p.139); 52 (p.143); 63(p.131); 164 (Draft) (p.33); 181 (Draft) (p.57).

Table 22 continued...

UNEMPLOYED FEMALES

Educational Level	Duration of Unemployment: Upto 3 months	3 to 6 months	6 months to 1 year	1 Year & above	Not Recorded	Total	Sample Persons
			10th Round				
1. Illiterate	52.35	3.76	7.86	28.79	7.24	100.00	181
2. Literate but below Matric	18.20	4.52	15.56	56.76	4.96	100.00	144
3. Matric & above	9.02	3.00	38.63	43.75	5.60	100.00	128
4. Total	33.95	3.79	16.62	39.35	6.29	100.00	453
			11th & 12th Rounds				
1. Illiterate	51.21	7.04	2.51	4.96	34.28	100.00	102
2. Literate but below Matric	17.13	13.96	17.64	34.47	13.80	100.00	41
3. Matric & above	8.65	3.11	54.64	24.75	8.85	100.00	26
4. Not Recorded	100.00	-	-	-	-	100.00	1
5. Total	37.20	8.16	13.40	15.59	25.65	100.00	170
			13th Round				
1. Illiterate	40.73	1.82	2.43	5.78	49.24	100.00	149
2. Literate but below Matric	12.35	4.50	8.99	16.86	57.30	100.00	46
3. Matric & above	4.76	9.52	23.81	19.05	42.86	100.00	16
4. Total	31.96	3.04	5.65	9.13	50.22	100.00	211
			18th Round				
1. Illiterate	56.38	16.39	12.94	3.65	10.64	100.00	53
2. Literate but below Secondary	23.33	21.36	23.87	24.25	7.19	100.00	38
3. Secondary	13.85	24.51	39.47	22.17	-	100.00	33
4. Rest	-	-	-	-	100.00	100.00	1
5. Total	32.71	18.31	22.81	18.50	7.67	100.00	145*
			19th Round				
1. Illiterate	- 57.19 -		- 42.81 -		-	100.00	15
2. Literate but below primary	- 37.80 -		- 62.20 -		-	100.00	16
3. Primary but below secondary	- 38.79 -		- 59.28 -		1.92	100.00	45
4. Secondary	- 22.69 -		- 74.41 -		2.90	100.00	46
5. Graduate & above	- 66.65 -		- 22.77 -		10.58	100.00	62
6. Total	- 47.95 -		- 46.86 -		5.19	100.00	184

* The data for 20 unemployed females with various technical qualifications, recorded in the 18th Round, could not be aggregated for presentation in the table.

Source: The National Sample Survey, Reports No.34 (p.139); 52 (p. 143); 63 (p.131); 164 (Draft) (p. 34); 181 (Draft) (p. 57).

TABLE 23

PERCENTAGE DISTRIBUTION OF UNEMPLOYED PERSONS OF EACH SEX AND SPECIFIED EDUCATIONAL LEVEL, BY THE DURATION OF THEIR UNEMPLOYMENT.

According to the 10th and the 11th and 12th Rounds of the NSS in RURAL India

Educational Level	Duration of Unemployment					Total	Sample Persons
	Upto 3 months	3 to 6 months	6 months to 1 year	1 year & above	Not Recorded		
			PERSONS				
			10th Round				
1. Illiterate	54.23	6.59	2.89	24.62	11.67	100.00	254
2. Literate but Below Matric	15.56	3.83	20.63	41.76	18.22	100.00	125
3. Matric & Above	8.95	2.84	42.62	37.22	8.36	100.00	25
4. Total	40.88	5.60	10.25	30.05	13.22	100.00	404
			11th & 12th Rounds				
1. Illiterate	69.80	1.13	1.36	3.04	24.67	100.00	3522
2. Literate but Below Matric	55.72	6.23	7.15	14.18	16.72	100.00	621
3. Matric & Above	17.41	12.07	12.20	34.16	24.16	100.00	53
4. Not Recorded	45.30	20.44	-	-	34.26	100.00	16
5. Total	65.31	2.55	2.90	6.28	22.96	100.00	4212
			MALES				
			10th Round				
1. Illiterate	57.07	6.69	3.75	24.06	8.43	100.00	147
2. Literate but Below Matric	15.75	3.88	20.89	41.03	18.45	100.00	123
3. Matric & Above	8.96	2.84	42.62	37.22	8.36	100.00	25
4. Total	36.30	5.22	14.18	31.96	12.34	100.00	295
			11th & 12th Rounds				
1. Illiterate	67.20	0.98	1.61	5.29	24.92	100.00	1697
2. Literate but Below Matric	54.82	6.15	7.45	14.42	17.16	100.00	579
3. Matric & Above	16.50	7.13	13.31	36.69	26.37	100.00	48
4. Not Recorded	48.27	12.93	-	-	38.80	100.00	8
5. Total	60.82	3.03	4.09	9.73	22.33	100.00	2332
			FEMALES				
			10th Round				
1. Illiterate	51.11	6.47	1.96	25.23	15.23	100.00	107
2. Literate but Below Matric	-	-	-	100.00	-	100.00	2
3. Matric & Above	-	-	-	-	-	-	-
4. Total	50.57	6.40	1.94	26.02	15.07	100.00	109
			11th & 12th Rounds.				
1. Illiterate	72.21	1.26	1.14	0.96	24.43	100.00	1825
2. Literate but Below Matric	73.60	7.88	1.38	9.24	7.90	100.00	42
3. Matric & Above	27.36	66.18	-	6.46	-	100.00	5
4. Not Recorded	41.99	28.80	-	-	29.21	100.00	8
5. Total	71.93	1.85	1.14	1.20	23.88	100.00	1880

Source: The National Sample Survey, Reports 34 (p.90); 52 (p. 82).

17th Round of the NSS, nearly 31 per cent of the urban unemployed who were new entrants were looking for "miscellaneous clerical" work, another 12 per cent sought "unskilled office work" and 8 per cent wanted to work as teachers. 27/ One might presume that those looking for teaching were only temporarily unemployed, i.e. faced "frictional" unemployment. The others could have partly been diverted to other vocations. The acute shortage of skilled craftsmen such as carpenters, masons, plumbers, machnics, and of stenographers in our urban centres is well-known. These vocations command a premium in terms of wage rates also. The co-existence of a shortage of such personnel with surplus of persons educated upto Matriculation or more arises partly because of the widespread preference for white-collar work. Therefore, the problem of manpower planning in India encompasses the task of modifying the outlook of the young students (and to some extent, or their parents) about the preferred vocations. Yet, if a significant proportion of students passing matriculation each year is diverted for training in the crafts, it will almost certainly lead to a glut of craftsmen, unless proper programmes are devised simultaneously to increase the demand for their skills in activities such as public works and housing.

The preceding discussion of mainly the NSS data has drawn attention to some of the variables such as sex, age, educational attainment, region, and duration of the unemployment. Some of the points have a direct relevance to policy programmes that need to be undertaken. On other issues more information is required. For example, a more intensive analysis of the characteristics of persons reporting long-duration unemployment and perhaps some supplementary questions to ascertain the underlying circumstances would help to understand the situation and devise appropriate policy measures. The scope for necessary cross-tabulations is restricted by the usually small number of unemployed in the sample. However, the largest number of unemployed observed in the 17th Round in urban areas (12,112) was large enough to permit quite elaborate tabulation. With a more imaginative tabulation programme, the NSS data can bring to light a number of additional facts with direct policy implications. On some issues, a revision of the schedules in use might also be advisable. One hopes that the widespread concern in the country about the problem of unemploy-

ment will stimulate a thorough review of the past procedures and tabulation programmes and enhance their usefulness.

V. LIMITATIONS OF THE REVIEW

In concluding this review of selected statistics on Employment and Unemployment in India, the author must record his awareness of its limitations. Despite the length of the review, several gaps remain, the most important of which is the absence of any discussion of the statistics on (a) the "intensity of work" or hours of work reported by persons classified as employed and (b) on their availability for additional work, i.e. visible underemployment. 28/ Despite the limitations of the data available on these subjects, they can provide a useful supplement to the information on unemployment reviewed above. While it is extremely important to distinguish between open unemployment and underemployment, the two phenomena are closely linked and should not be viewed in isolation.

Equally important is the question of the earnings of those classified as employed. For some segments of the employed (particularly the employees), the NSS has collected and tabulated information on this subject, particularly during the recent Rounds undertaken after 1961. Once again, the data may not be very accurate but they need to be examined carefully. Employment planning is important not only for the purpose of giving every member of the labour force the satisfaction of contributing to the output of goods and services in the community but also for ensuring for him and his dependents a certain minimum income level in real terms. The acceptable minimum will change with the growth of the economy and the supply of community services. However, it must form the basic objective of policies regarding distribution of income and employment.

FOOTNOTES

1/ In seasonal activities, a person who worked for "at least one hour a day throughout the greater part of the working season" was considered a worker. For a discussion of the difficulties of applying such a definition in actual enumeration, see: Pravin M. Visaria, "Priorities for the 1971 Census, " Economic and Political Weekly, Vol.II, No.42, October 21, 1967, p.1913.

2/ One must note, however, that the urban frame of the NSS was revised after the 18th Round to conform to the 1961 Census list of towns. The towns that were excluded probably had a significant degree of agricultural activities and, therefore, relatively higher levels of labour force participation.

3/ Unemployed have been shown as per cent of labour force in : Pravin Visaria "Unemployment in India in Perspective," Economic and Political Weekly, July 1970, Special Number.

4/ The age distributions were taken from: Census of India, Paper No.2 of 1963, 1961 Census: Age Tables, p.39. For a similar comparison of the 1951 and the 1961 worker rates, see: Pravin Visaria, "Comparability of 1961 and 1951 Census Economic Data: A Comment," Artha Vijnana, Vol.7, No.3, September 1965, pp.265-268.

5/ Census of India, 1961, Vol.I, India, Part II-B-(iii), General Economic Tables, Table B-VII. Note that the data on secondary activity were collected only for cultivators, agricultural labourers and workers engaged in household industry.

6/ See J.N.Sinha, "Comparability of 1961 and 1951 Census Economic Data," Artha Vijnana, Vol.6, No.4, December 1964; also the present author's comment and Sinha's rejoinder in Artha Vijnana, Vol.7, Nos. 3 and 4, September and December, 1965 respectively.

7/ See also, P.M.Visaria, "Agricultural Employment in a Developing Economy: A Postscript," in: A.M.Khusro (Ed.), Readings in Agricultural Development, Allied Publishers, Bombay, 1968, pp. 544-46.

8/ For an analysis of the trends in the industrial distribution of workers in individual states, see J. Krishnamurthy, "Long Term Changes in the Industrial Distribution of the Working Force in the Indian Union and the States: 1901-1961," in: Planning Commission, Government of India, Report of the Committee of Experts on Unemployment Estimates, New Delhi, 1970, Appendix VII.

9/ Some reservation on this point arises from the possibility that persons whose "industry" was not recorded or was not adequately described in the earlier Rounds, might be predominantly in service activities.

10/ Beginning with the 16th Round, the urban labour force surveys of the NSS do not identify, persons 'not seeking but available for work' as unemployed. Also, the unemployed must be seeking full-time work and specific criteria have been laid down to ascertain active search for jobs.

11/ See the NSS, No.16, Report on Employment and Unemployment, Ninth Round: Preliminary, May-November 1955, Delhi, 1959, p. iv.

12/ Ibid, see also pp. 3-4 .

13/ The data on the proportion of new entrants among all unemployed are discussed below in Section IV.

14/ A similar adjustment of the 18th Round data for urban India would raise the reported percentage of unemployment from 0.65 to 1.28. Note that due to the classification groups of hours of work adopted for the 18th Round, the adjustment includes among the unemployed those working less than 28 hours and available for additional work.

15/ It is recognized, however, that the estimate of the level of unemployment in the economy would become more realistic if each day of unemployment reported by the respondents is taken into account for the purpose. Under this approach, recommended in the Report of the Committee of Experts on unemployment Estimates (Planning Commission Government of India, New Delhi, 1970) the incidence of unemployment would be estimated by relating the reported man-days of unemployment to the total number of man-days on which the sample population is classified as 'in the labour force'. Some surveys undertaken in the (former) Bombay state during the early 1950's suggest, however, that such a change in the definition would not significantly effect the estimate of unemployment in rural areas.

16/ D.G.E.T., Report on Survey to Ascertain the Proportion of Employed Persons on the Live Register of Employment Exchanges, New Delhi, cyclostyled, 1969

17/ Ibid. pp.19-20

18/ Ibid,p.38, The percentage distribution of the employed job-seekers by monthly income was as follows:

a) Less than Rs.50	:12.3	d) Rs.200 - Rs.299	:5.4
b) Rs.50 - Rs.99	:38.8	e) Rs.300 - Rs.399	:1.3
c) Rs.100 - Rs.199	:34.1	f) Rs.400 or more	:0.3

For the remaining 7.8 per cent, information was not available on the subject.

19/ Pravin Visaria, "Estimates of Participation Rates and the Labour Force for India, 1961-1981,"Appendix V.

20/ One must note, however, the small number of sample persons interviewed in the 19th Round, for the Integrated Household Schedule. The total number of persons interviewed for the schedule was only 23,720. The sampling error of the estimates is, therefore, likely to be relatively high.

21/ One of the 6.95 million men educated upto Matriculation or more, enumerated by the 1961 Census,

only 2.29 million or 32.87 per cent were in rural areas. Of the 1.28 million females with similar educational qualifications, only 0.22 million or 17.36 per cent were in rural areas. See: Census of India, 1961, Vol.I, India, Part II C(i), Social and Cultural Tables, Table C-III.

22/ Those from rural areas perhaps return to their native villages in the event of prolonged unemployment.

23/ Mark Blaug et al., The Census of Graduate Unemployment in India, Allen Lane The Penguin Press, London, 1969, p. 238.

24/ Unfortunately, such classification is not available for the other Rounds of the NSS.

25/ U.S. Department of Labour, Manpower Report of the President, 1969, (pp.42-43); Statistics on Manpower : A Supplement to the Manpower Report of the President, (pp.18-22); both published by the Government Printing Office, Washington (D.C.), 1969

26/ The NSS, Report No.103, Tables with Notes on Urban Labour Force, Sixteenth Round: July 1960-June 1961, Delhi, 1966, pp. 37-39

27/ The 17th Round Report of the NSS is the last to give such classification. The number of unemployed new entrants in the sample was 5,524. See: NSS, Report No.127, Tables with Notes on Urban Labour Force, Seventeenth Round: September 1961-July,1962 Delhi 1969, pp.55-60. The 16th Round of the NSS also reported almost identical preferences for jobs. See: The NSS, Report No.103 , op.cit., pp.40-48.

28/ See Pravin Vasaria "Unemployment in India in Perspective", in: Economic and Political Weekly, July 1970, Special Number.

EMPLOYMENT, UNDEREMPLOYMENT AND UNEMPLOYMENT IN IRAN

Fereidoon Nasseri

Man-power is one of the most important and basic resources for economic development. It plays a vital role in the formulation of the economic and social development policy of a country, and is frequently the key element in this regard. The employment situation and the composition of the active population according to age and employment status are among the basic requirements for evaluating the economic development of a country. The present report will throw some light on the State of Iran's active population, based on the ratio of the employment to the unemployed population and its fluctuations between the two general censuses conducted in Iran, one in 1956 and the other in 1966.

Iran's active population increased by 1.5 million in the period between these two censuses. Employment opportunities, including seasonal jobs, increased by almost 1.4 million in the same period. Iran's rapid economic and social progress and large scale investments in its industrial sector have affected the composition of employment and the distribution of the active population into various groups. During the period, employment in the agricultural sector showed a fall of about 10 per cent, while the productive industries and building industries, including services, showed an increase of seven and three per cent, respectively. The vital change in job status enabled Iran to move from the group of agricultural countries towards the group of industrialized nations.

Inspite of the fact the employment situation, during the period under review, has been greatly improved, the active manpower is not fully and satisfactorily employed in Iran. The following are certain factors which indicate that the active manpower of the country is not fully and well utilized for the economic and social development of Iran. The factors are:

a- Minor contribution of the female population to economic development.

b- Over 46 per cent of the active population is still employed in the agricultural sector.

c- Percentage of wage earners in the total population is low.

d- Higher rate of seasonal unemployment.

e- And above all, a large number of the employed population are underemployed.

Between the two General censuses there was a 2 per cent decrease in the male participation rate. During the same period, the active population showed a three per cent increase in its participation rate. The recent political recognition initiated under Iran's White Revolution which started in 1962 and the special facilities provided for suitable jobs, were the major factors which helped in raising the number of active members of the female population of the country.

A review of the composition of the employed labour force during the period will indicate the rate of social and economic progress in Iran. The increased investment, especially in private sector, created more jobs mainly in the urban areas. The expansion of economic, social,and development activities in the public sector contributed to a substantial rise in the number of government employees. In general, Iran's economic development base has steadily changed from agriculture to industry and this has resulted in reducing the number of the self-employed and unpaid family workers.

The rise in job opportunities could not keep pace with the increase in the active population. During the period under review 125,000 persons looking for jobs were added to the unemployed population. This raised the percentage of unemployment from 3 per cent to 4 per cent. The

survey indicated that 74 per cent of unemployed population including the seasonally unemployed, or about 55 per cent of the unemployed excluding the seasonally unemployed, were illeterates. This would indicate that a literacy drive on a more intensive scale will reduce the number of unemployed, as illiteracy seems to be directly related to employment. Underemployment was not assessed at the time of the 1956 general census and no detailed figures are available to compare with the present situation. However, the 1965 census indicated that 18 per cent of Iran's employed population works less than 36 hours a week, 13 per cent of the urban and about 22 per cent of the rural.

It may be mentioned here that limited financial resources have caused underemployment and an uneconomic distribution of employed manpower in Iran. At the same time, the lack of a comprehensive policy for employment and insufficient attention towards it's integration with the general economic and social policy have also resulted in underemployment. Little attention was paid for framing a sound employment policy during the past Second and Third Development Plans. Employment was not considered as a basic factor for the economic development of the country but as a by-product of it, so that during the two plan periods manpower planning was not effectively integrated into the overall economic and social planning.

Special attention has been paid to proper manpower planning during the current Fourth Development Plan which emphasises that manpower planning has a direct link with the economic and social development policy. The Government of Iran has fully visualized the importance of a proper utilization of human resources for the implementation of the Fourth Development Plan. During last few months, for the first time Iran sought a vital participation in the O.E.C.D. and CENTO manpower conferences held in Tehran. Recently a national employment seminar was also organized, and it was attended by a large number of executives from the public and private sectors. The steps taken by the government in cooperation with the private sector have paved the way for a greater contribution of manpower planning to the economic and social development planning of the country. The available statistics show that the

composition, distribution and utilization of the labour force have improved during the current Fourth Development Plan in comparison to the two previous development plans. The achievements made in the economic and social fields during the current Fourth Development Plan period, especially in the employment of active manpower, are the basic factors for evaluating the success of development projects.

The continued interest in and constant efforts for a proper study of employment status at local, regional and international levels will facilitate the solving of the problems. The developing nations should declare and pursue it as a major goal of active policy designed to promote productive and freely chosen employment.

STATISTICAL APPENDIX

TABLE I

DISTRIBUTION OF THE ECONOMICALLY ACTIVE POPULATION

10 years of age and over by sex
1956 & 1966
censuses

(thousands)

Year	both sexes			male			female		
	10 years and over	active population	active population %	10 years and over	active Population	active population %	10 years and over	active population	active population %
1956	12,784	6,067	47.5	6,542	5,491	83.9	6,242	576	9.2
1966	16,536	7,584	45.9	8,546	6,584	77.0	7,990	1,000	12.5

Source: 1956 and 1966 censuses

TABLE II

COMPARING THE EMPLOYMENT STATUS BY SEX
AND SELECTED AREA 1956 AND 1966

(thousands)

Sex and area	1956			1966		
	Active population	employed	rate of employment	Active population	employed	rate of employment
male	5,491	5,334	971	6,584	5,948	903
female	576	573	995	1,000	910	910
urban	1,893	1,807	955	2,768	2,610	943
rural	4,174	4,100	982	4,816	4,248	882
Total	6,067	5,907	974	7,584	6,858	904

Source : 1956 and 1966 censuses

TABLE III

DISTRIBUTION OF EMPLOYED POPULATION

in three major sectors

(thousands)

Three major sectors	1956		1966	
	No.	per cent of total	No.	per cent of total
Agriculture	3,330	56.4	3,168	46.2
Industrial production and construction	1,190	20.1	1,857	27.1
Services	1,390	23.5	1,833	26.7
Total	5,910	100.0	6,858	100.0

Source : 1956 and 1966 censuses

TABLE IV

DISTRIBUTION OF EMPLOYED POPULATION

by major industries and selected areas
1956 & 1966

(percentages)

Major Industries	Total country		urban areas		rural areas	
	1956	1966	1956	1966	1956	1966
Agriculture	56.3	46.2	12.1	7.6	75.8	70.0
Mining and quarrying	0.4	0.4	0.5	0.3	0.4	0.4
Manufacturing	13.8	18.5	26.2	27.7	8.3	12.8
Construction	5.7	7.4	9.9	10.2	3.8	5.7
Elc., gas water and San. Serv.	0.2	0.8	0.5	1.8	0.1	0.1
Commerce, Transport etc.	23.6	26.7	50.8	52.4	11.6	11.0

Source: 1956 & 1966 censuses.

TABLE V

EMPLOYED POPULATION 10 YEARS OF AGE AND OVER

by class of worker in selected areas

(thousands)

Class of Worker	Total country				urban areas				rural areas			
	1956		1966		1956		1966		1956		1966	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Employer	69	1.1	153	2.2	35	1.9	98	3.8	34	0.8	55	1.3
Own account worker	2,435	41.2	2,659	38.8	474	26.2	624	23.9	1,961	47.8	2,035	47.9
Govt. employee	451	7.6	663	9.7	329	18.2	573	22.0	122	3.0	89	2.1
Pvt.wage earner	2,246	38.0	2,635	38.4	858	47.5	1,235	47.3	1,388	33.9	1,400	33.0
Unpaid family worker	594	10.1	677	9.9	43	2.4	49	1.9	551	13.4	628	14.8
Unpaid apprentice	-	-	24	0.3	-	-	15	0.5	-	-	9	0.2
Not reported	113	2.0	47	0.7	69	3.8	16	0.6	44	1.1	32	0.7
Total	5,908	100.0	6,858	100.0	1,808	100.0	2,610	100.0	4,100	100.0	4,248	100.0

Source: 1956 & 1966 Censuses.

TABLE VI

COMPARING THE UNEMPLOYED POPULATION IN 1956 & 1966

by sex and selected areas

(thousands)

area	both sexes			male			female		
	1956	1966	per cent change	1956	1966	per cent change	1956	1966	per cent change
Urban	86	135	57	85	125	47	1.4	9.8	600
Rural	73	149	104	72	138	92	0.9	10.8	1100
Total	159	284	79	157	263	68	2.3	20.6	796

Source: 1956 & 1966 censuses.

TABLE VII

UNEMPLOYED POPULATION BY TYPE OF UNEMPLOYMENT AND LEVEL OF EDUCATION

Level of education	male and female			
	Total	per cent	seasonally unemployed	seeking work
Total unemployed	725,689	100	441,448	284,241
Illiterate	541,674	75	381,094	160,580
Read only	16,158	2	11,473	4,685
Literate	167,336	23	48,606	118,730
Without certificate	31,266	4	20,957	10,309
Elementary 1-3 years	16,732	2	5,897	10,835
Elementary 4-5 years	29,187	4	9,880	19,307
Elementary 6 years	46,039	6	9,752	36,287
Secondary 1-3 years	13,206	2	1,272	11,934
Secondary 4-5 years	3,669	0.5	226	3,443
Secondary 6 years	24,526	3	350	24,176
University w/o degree	240	-	10	230
Bachelor	1,049	-	25	1,024
Master	316	-	11	305
Engineer	98	-	3	95
Doctor	257	-	3	254
Certificate not repeated	751	-	220	531
Literate not repeated	521	-	275	246

Source: 1966 census.

TABLE VIII

EMPLOYED AND UNDER-EMPLOYED* POPULATION

by three major sectors

Three major sectors	Total country			urban areas			Rural areas		
	employed	working less than 36 hours	per cent	employed	working less than 36 hours	per cent	employed	working less than 36 hours	per cent
Total	6,858,396	1,252,717	18	2,610,294	332,593	13	4,248,102	920,124	22
Agriculture	3,168,515	551,572	17	197,735	21,607	11	2,970,780	529,965	18
Industrial production and construction	1,803,690	384,550	21	998,320	116,194	12	805,370	268,356	33
Services	1,886,191	316,595	17	1,414,239	194,792	14	471,952	121,803	26

* less than 36 hours of work per week

Source: 1966 census.

TABLE IX

EMPLOYED POPULATION BY MAJOR INDUSTRY GROUP
1956 & 1966

Major Industries	1956	1966	per cent change
Total employed	5,907,666	6,858,396	+ 16
Agricultural forestry, hunting and fishing	3,325,721	3,168,515	- 5
Mining and quarrying	24,654	26,312	+ 7
Manufacturing	815,699	1,267,600	+ 55
Construction	335,754	509,778	+ 52
Elec.,gas,water and san.serv.	11,736	52,858	+350
Commerce	355,005	552,023	+ 55
Transport, stor.and commun.	208,052	224,086	+ 8
Services	655,434	929,685	+ 42
Activities n.a.d.	175,611	127,539	- 27

LABOR FORCE STATISTICS OF TURKEY*

Yasar Yaser

I. Introduction
II. Sources of Labor Force Data
III. Objectives of the Turkish Labor Force Surveys
IV. Changes in the Quality of Surveys
V. Mobility of Rural Labor in Turkey
VI. Conclusions
VII. Appendix A
Basic Concepts and Definitions used in the Labor Force Surveys

I. INTRODUCTION

The underdeveloped world today is striving to carry out an industrial revolution which will allow it to enjoy the benefits of a modern industrial society. Labor, a key factor of production as well as the major consumer, affects and is affected by this process of change in beneficial and adverse ways. Therefore, many countries, such as Turkey, have attempted to delineate the composition of the labor force through the statistical process to have a basis on which to plan for future changes. In this way it would be hoped that the changes caused by and affecting the labor force would be more orderly and beneficial to labor and to economic development as a whole.

The labor force statistic has many components and each component incorporates many problems inherent in its calculation. Since the base is the population of the nation, any factors affecting the people affect the labor statistics. In Turkey the rate of growth of population is estimated at 2.6 per cent per annum. Furthermore we see symptoms of internal migration, e.g., rapid urbanization, and external migration of professionals and scientists as well as of labor on a temporary basis. A picture taken at a point in time, therefore, incorporates a large number of dynamic elements which are difficult to pinpoint, and which, in a

* I would like to thank Miss Safiye Cosar and Mr Aydin Gonen for their contribution to this paper.

short period of time, may make the picture obsolete. Problems of identification and definition arise in the collection of the labor statistics. In an underdeveloped country with a large agricultural sector and with rapid urbanization, such as in Turkey, the definition of the concept of an employed individual is extremely difficult. This, in turn, makes the concept of unemployment difficult to apply. For example, a man purchasing and reselling old clothes on the streets can be defined as a type of middleman, and is hence employed. However, his activities are completely unrecorded. An agricultural worker who may work a few months of the year may be considered employed. A construction worker whose work is also seasonal is considered unemployed when not working, if he is counted at all. Such a combination of employment and unemployment data can cause confusion. The same problems arise in establishing the characteristics of the working population.

The difficulties of collecting data on the Labor Force have not been overcome in Turkey to any large extent. However, the need for the date, especially for manpower planning, has made itself felt in many circles, and the State Institute of Statistics has responded with a system of sample household surveys initiated in 1967 for urban centers.

II. SOURCES OF LABOR FORCE DATA IN TURKEY

There are three basic sources of data on the labor force in Turkey.

A. Data obtained from the records of public organizations.
B. Data obtained from establishments.
C. Data obtained from censuses and surveys.

A. The Social Insurance Institution and the Labor Placement Office of the Ministry of Labor constitute the first source, namely the records of public organizations for labor force data. Data collected from these records are mainly related to employment. We can get some limited information on the characteristics of the employed persons who have some records in the file of the institution. Data on unemployment cannot satisfactorily be collected from this source.

The data based on payrolls and the lists of the establishments, as collected by the Social Insurance Institution, indicate the distribution of the labor force by economic activity and by cities. In using such data one should be careful about the following points:

a. The data do not include persons outside the coverage of the Labor Law.

b. The application of the Labor Law shows wide differences in time and place. Therefore, care should be taken in analyzing the time series.

c. The data are not very detailed. (Data do not provide, for example, distribution by occupation and by age groups.)

d. The data are always incomplete due to irregular reporting of some organization.

The employment data that the Labor Placement Office provides are also incomplete. First of all the figures for both vacancies and job applications consist of only those who have applied to the office for a job. Secondly, applying to the Labor Placement Office for a job is not a very widespread practice in the country. The August 1966 Labor Force Survey results show that only 25-30 per cent of those who have been seeking jobs apply to the Labor Placement Office, even in the large cities. The statistics collected by the office, on Turkish workers in foreign countries, are also inadequate in the following respects:

a. The number of persons going abroad with tourist passports and getting a job is unknown.

b. The number of workers who have returned to the country is unknown.

c. No information is available on the nature of jobs taken up by those workers.

d. The number of unemployed workers (though this is estimated as being negligible) is unknown.

B. Data obtained from the Establishments. As an example of this source of labor force statistics we may cite the surveys of the Ministry of Industry, of the Union of Chambers, and the Industrial surveys and surveys of mining conducted by the State Institute of Statistics (SIS). Although this source yields more reliable data on employment by economic activities, no information can be obtained on unemployment.

Even if we suppose that those two above-mentioned sources of data give reliable information, we would not get complete statistics for the whole labor force because such data would provide limited information on the personal characteristics of the workers covered. Therefore, in order to get comprehensive information about the whole labor force, household surveys either censuses or sample surveys must be conducted.

C. Data Obtained from Censuses or Surveys. Till recently the most frequent source of data on the whole labor force had been the population censuses conducted every five years since 1935. It is not difficult to get some information on the employment characteristics of the population by adding a few more questions, whenever information on demographic characteristics is collected. But the census data are neither reliable nor up-to-date due to the following reasons:

1. The Turkish population census is a de facto type of census. About 300,000 enumerators are employed to complete the census in one day. The enumerators are not trained well enough to get reliable information about the characteristics of the labor force. We have no way of choosing 300,000 enumerators of good quality. Also, we do not have a sufficient number of experts at the SIS for the training of these enumerator

2. It is very difficult, and often impossible, to control the work which is to be done by the enumerators.

3. The population census is taken every five years. The labor force statistics of the census give us a picture of the labor force on that particular day. No up-to-date data are available from the censuses for the intercensal years.

4. It takes the SIS at least two years after the population census is taken to get the census results ready for publication. So, except for the 1 per cent sampling

results there are no data on labor force within two years after the census. By the time we get the data the labor force characteristics of the population might have changed, or not be comparable to the situation existing two years ago.

5. The labor force statistics obtained in a census would be less detailed than the information that could be got from a household sample survey.

III. OBJECTIVES OF THE TURKISH LABOR FORCE SURVEYS

The SIS, to overcome the lack of up-to-date comprehensive data on the labor force, and to meet the demands for such data coming from various organizations, started conducting sample household surveys in 1966.

In August 1966, as a preliminary step in this field, eight of the industrial cities with a population 100,000 and over were selected. The survey was conducted in these cities. Approximately 13,000 household in eight cities were interviewed during the last two weeks of August.

Using the results of the August 19 6 Labor Force Survey, a master plan of households in the urban areas was prepared for future surveys to be conducted by the SIS. The purpose was to conduct household surveys after short intervals and get up-to-date national estimates on employment and unemployment, and to measure the changes in the number and the composition of the labor force in urban areas over a specified time period. The plan was designed so as to give national and regional estimates, and also to give independent estimates for the three largest cities: Ankara, Istanbul and Izmir.

The process of conducting a labor force survey on a national base was to be completed in three steps according to the Master Plan. In the first stage the sample households in the cities with a population of 50,000 and over - there are 32 such cities - were interviewed in November 1967. In the second stage of the plan, sample cities with a population of 15,000 - 50,000 were included in the survey in addition to the 32 cities from the first stage. The survey was conducted in April 1968, four months after the survey in the first stage cities. The total number of the cities in which the survey was conducted was then 57.

In October 1968 the survey was conducted in all the sample cities selected in the Master Plan. There were 107

such cities. Thus, for the first time a household sample survey which would give up-to-date regional and national estimates of the characteristics of the labor force in urban areas was conducted on a national base. The second household survey designed according to the Master Sample Plan was completed in all the 107 sample cities. The results of these surveys can be seen in the seperate publications.

There is no labor force survey planned for 1970 since there will be a population census in October 1970. In 1971, the SIS will again conduct a Labor Force Household Survey, according to a new sample design.

IV. CHANGES IN THE QUALITY OF SURVEYS

In this section I will point out the changes in the factors affecting the quality of the labor force surveys, since the first preliminary step in this field in August 1966. However, when we speak of the success of a survey we would mean, here, getting the most reliable information possible within the limited financial resources. Some of the factors influencing the success of any household survey are:

a. design of the survey,
b. questionnaire,
c. time, and
d. interviewers

Now, let us see the changes in these factors separately, and the affects they have on the labor force surveys.

a. Design of the Survey

As regards the design of the survey I will only mention the changes in the sampling frame. The details of the survey design would be out of the scope of this paper.

The sampling frame used in the August 1966 Labor Force Survey was the lists of buildings prepared for the 1965 Census of Population. The sampling unit was a cluster of 4 housing units, and the clusters were formed on the lists of buildings of the selected eight cities, after the non-housing units,

such as hospitals, schools, restaurants, offices,etc., were sorted out. By the time the sample for the survey was selected the lists were already one year old. Also, it was discovered at the end of the field work of the survey that the lists were incomplete. Incompleteness in the frame is a serious defect for two reasons. First, it cannot be discovered while the survey is in progress and second, units possessing some special characteristics are likely to be omitted from an incomplete frame.

In 1967, with the Master Plan, the area sampling method (a combination of area sampling and list sampling) was introduced as the sampling method of the survey. First, a list of the areas within the municipal boundries of each urban city in the sample were obtained. Then enumerators were sent to the sample areas selected within the sample cities.

The enumerators were instructed to correct the lists of buildings according to the actual situation in the area during the field work. By doing this, the defects introduced by the incompleteness of the list of buildings were reduced considerably. A fairly up-to-date sampling frame was thus provided. The clusters of approximately six housing units were selected from these up-to-date lists of housing units.

As a result of the population flow to the cities, rapid new construction activities have been under way in the cities, particularly in the large cities. These have created some defects in the sampling frame, so that it was not as complete and up-to-date for the surveys conducted in 1968 and 1969, as it was for the November 1967 Labor Force Survey.

b. Questionnaire

The effectiveness of the household surveys is completely dependent on first, the co-operation of the household and second, on the quality of the information they give. The design of the recording documents is a matter of considerable importance because a well designed questionnaire can be a constant and useful guide to the interviewers as well as to the informants.

Information obtained in the survey might be misleading if there was not a considerable degree of precision in the recording of items of information. In this respect,

the questionnaire for the labor surveys has been improved a great deal from one survey to the next. First of all, the questionnaire has been given a more practical look since the August 1966 survey. The form of the questionnaire in the last survey, for example, is much more developed and much more practical for the interviewers to carry and to enter the information that the respondents give . The content and form of the questionnaire has also been changed. We can see the change in the questionnaires by comparing the questionnairs used in the Labor Force Surveys conducted at different times.

c. Time

There are three periods of time which are important for any survey.

1. the period to which the data refer or the reference period.
2. the reporting period or the length of time for which a unit is under observation and study, and
3. the period of survey operation, that is the period taken for the field work.

The period of survey operation for the August 1966 survey was the last two weeks of August, which was obviously not a suitable period for a household survey. The survey results show that a large proportion of the sample households were out of town during the period of the survey's operation. In 1967, in order to reduce the lack of response coming from those who were not at home during the period chosen for the field work, the time of the survey's operation was shifted to the months during which the population is supposedly less mobile, such as April and November.

d. Interviewers

Personal interviews with all persons, 14 years of age and older, in the sample household has been the method of data collection in the labor force surveys. In this method of data collection all important factors such as the interviewers, the surroundings of the interview, and the process of questioning and recording, should be planned such that the resulting record will be the true account of the situation which the survey is designed to describe.

The first problem is to have a team of interviewers with the required attributes, and the second problem is that of the proper training of interviewers. The SIS does not have a permanent staff of interviewers. A number of regular personnel at the central office of the Institute are selected as interviewers to be employed in the survey after a training of four or five days with a test at the end of the training period. The quality of the training program has been improved considerably.

V. MOBILITY OF RURAL LABOR IN TURKEY*

The changes in the distribution of population between the rural and urban areas is of vital importance to the development of a country. A movement from the rural to the urban areas is usually associated with changes in the occupational structure of the population and in the way of living of the people. These changes are generally believed to be conducive to economic growth.

More than two-thirds of Turkey's population live in villages where agriculture is invariably the only occupation available. In the post-war era, however, there are some indications that the situation is changing and the rural population, and hence the agricultural population, is losing its relative importance. In this section, we shall try to determine the extent of the movement from the villages to the cities and its economic consequences.

The percentage of the total population in cities has increased from 16.4 per cent in 1927, to 18.8 per cent in 1950, to 25.2 per cent in 1960, and to 34.4 per cent in 1965. As the natural rate of growth of population has been lower in the cities than in the villages, migration from the latter to the former would seem to be the reason for this increase. The main economic factors responsible for this shift are found to be the following:

1. Stagnant or even declining productivity in agriculture

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* This summary is taken from "Mobility of Rural Labor in Turkey" by Tomris Ersoy (M.A.)

2. Use of machines like tractors replacing labor to some extent
3. Growing industry, trade and commerce, especially in the big cities.

VI. CONCLUSION

As we have seen in the previous section of this paper, since 1967 the statistics on the labor force characteristics of the population in urban areas have been collected through household surveys, conducted at regular intervals by the SIS. The next step in this field is to extend the scope of the survey so as to cover the rural parts of the country too.

The experience in the previous surveys, especially in the non-block slum areas, will shed some light on the survey work in the rural areas. The basic concepts and definitions used in the labor force survey, as it is seen in Appendix A, are the internationally accepted ones. Using these definitions would enable the analyst in this field to make international comparisons of the labor force. But it is doubtful whether these definitions are suitable to the labor force in Turkey, one of the developing countries of the world.

The rate of unemployment estimated from the results of the labor force surveys, for example, shows the existence of a low level of unemployment in the urban areas of the country. This underestimation is due to the fact that the definitions given by the United Nations for employment and unemployment have been used without any alterations to make them more applicable to the Turkish problem.

Let us take as an example, the case of a man who sells combs, hair pins, safety pins, cigarette lighters, belts and the like, on a small counter at the corner of a street. He opens his small counter early in the morning and sits on a chair next to his counter until the late hours of the evening. He might sell one or two combs or five or six safety pins a day. Suppose that he is the head of a household which was selected into the sample. According to the definitions accepted in the survey 'employed' and 'own account worker', instead of 'unemployed', would be entered against his name on the questionnaire.

We can find other examples to show that some of the definitions and, consequently, some of the questions in the questionnaire are just not suitable to the social and economic structure of the country. What should be done is to make some necessary adjustments in some of the definitions and in the form of the questionnaire depending on our own social and economic conditions.

APPENDIX A

BASIC CONCEPTS AND DEFINITIONS USED IN THE LABOR FORCE SURVEYS

Most of the definitions used in the survey are based on the definitions recommended by the United Nations. The purpose of adopting the same definitions was to enable the analyst to make international comparisons as well as to insure consistency between the labor force statistics of Turkey and those of other countries. A brief review of the basic definitions and concepts of the survey is given below:

1. HOUSEHOLD: One person or group of persons, with or without a family relationship, who live in the same housing unit or in the same part of a housing unit, who share their meals, earnings, and expenditures and who take part in the management of the household. As a result of this definition, a) persons with a family relationship but living in separate residences, and b) persons with a family relationship and living in the same house but not sharing their earnings and expenditures, are not considered as members of the same household; and c) persons who have lived in the same household sixteen or more days during the month prior to the day of interview, and who have shared meals with the other household members are considered members of the household.

2. HOUSEHOLD HEAD: The person who is responsible for the earnings and expenditures of the household and who actually manages the household.

3. LABOR FORCE (Economically Active Population): There are two basic types of standards in defining what is, and what is not, Economic Activity.

a) The first is to ask each person what his usual occupation or gainful work is without asking exactly when the work was done. According to this approach those who report some usual occupation are "economically active" and are classified as "GAINFUL WORKERS".

b) The other type of standard defines the economically active population as "LABOR FORCE". This represents the number of people actually at work (or seeking work) during some particular short period, usually a week.

So, the labor force refers to the potential supply of labor of the 15 - 64 age group, which is accepted as the productive age groups by the United Nations. If we exclude students, housewives, disabled and sick persons not able to work, and prisoners, from the total population within this age group, the remaining population, (i.e., persons having a job, persons having a job but not working, persons seeking work, persons who are not seeking work because they think that there is no work available but who could have worked if they are offered one), constitutes the Labor Force. If the military personnel is excluded from this total, the remaining will be the civilian labor force.

4. EMPLOYMENT: Economically, the term covers the services of those who are determined to work in return for payment. Those who are above a certain age (generally between the ages 15-64), and who can be classified in any of the groups listed below, can be regarded as employed.

a) Those who have a job: This group covers persons who were actually working for a pay or profit during the time of the survey, regardless of the time they have been in work.

b) Those having a job but temporarily not working: This group consists of persons who have a job but are temporarily not working due to illness, accident, labor dispute, annual leave, leave without pay, technical defect or weather conditions.

c) Self-employed workers and those who are classified either as persons with a job, or as persons with a job but temporarily not working, are considered as employed.

d) Similarly, if the unpaid family workers have worked at least 1/3 of the normal working period during the specified time they are considered as employed.

As a result of the above mentioned definition the following cases cannot be considered as employed.

a) Those who have taken leave without pay for an indefinite time during the specified period.

b) Those who had no jobs during the time of the survey but were willing to work in the future, and those who did not own, or attempt to establish, an agricultural holding of same kind.

The family workers, i.e., those who work in establishments run by their families without having a share-holder status, who spend at least 1/3 of the normal working period working are considered as employed according to the internationally accepted definition. Thus it is essential to record the working hours of each unpaid family worker in order to ascertain whether or not their working hours add up to at least 1/3 of the normal working period. If no information is available on the normal working period related to each economic activity, then, 15 hours of work a week can be accepted as 1/3 of the normal working period. The definitions of the employment status of employed persons are given as follows:

a) EMPLOYEE: Those who work for someone else's concern to earn an income in cash or in kind are called "employee", regardless of the kind of job. As an example, civil servants, workers, and apprentices are employees.

b) EMPLOYER: Those who employ one or more persons in their own concern (farms, vineyards, garden, shop, office, etc.), and pay a salary or wage in cash or in kind, are called employers. If there are several partners in one concern each partner is an employer.

c) SELF-EMPLOYED: Those who work in their own concern (farm, vineyard, garden, shop, office and the similar) to earn an income, in cash or in kind, alone or with family members, without employing any other persons by paying them a salary or wage, are called "Self-employed".

d) UNPAID FAMILY WORKERS: Those who work in the family concern without any payment are "unpaid family workers".

5. UNEMPLOYMENT: The divergence between full employment and current employment levels measures "unemployment". In colloquial language unemployment means "without any job, spending time without doing anything, idle". An economist's understanding of the word, however, is rather different. Under certain conditions and with the existence of certain elements there is said to be unemployment. Although there are many definition of unemployment, a few of them will be given below and then we will go over the conditions which determine unemployment.

Definitions:

A - A person who has the ability and will to work but who cannot find a job, although he is searching for one, at the current wage rate and during the hours determined by law and custom, is called unemployed.

B - Every person who wants to work for payment under local conditions, but who cannot find a suitable job is unemployed.

C - A person who had been working for a time but who, though blameless, was dismissed and has the capacity and will to work, is unemployed.

Of those above definitions the most common and the most general one is the first definition. Therefore let us consider the elements and conditions of it:

a) "To have the ability and the will to work" is the principal condition. Those who have this characteristics are included in the Labor Force; those who do not, are neither included in the labor force nor considered unemployed.

b) "At current wage rate" indicates that those who do not accept work at the current and customary wage rate are not considered unemployed.

c) "Work hours determined by law and customs" means that those who are unemployed because they want a job outside the working hours customary in the economy are not considered unemployed.

The Definition of unemployment given by the United Nations is as follows:

"The unemployed consist of all persons above a specified age who, on the specified day or for a specified week, were in the following categories.

a) workers available for employment whose contract of employment had been terminated or temporarily suspended and who were without a job and seeking work for pay or profit.

b) Persons who were available for work (except for minor illness) during the specified period and seeking work

for pay or profit, who were never previously employed, or whose most recent status was other than that of employee, or who had been in retirement.

c) persons without a job, and currently available for work, who had made arrangements to start a new job at a date subsequent to the specified period.

d) persons on temporary or indefinite lay-off without pay.

The following categories of persons are not considered to be unemployed:

a) persons intending to establish their own business or farm, but who had not yet arranged to do so, who were not seeking work for pay or profit,

b) former unpaid family workers not at work and not seeking work for pay or profit."

CEYLON EMPLOYMENT PROJECTIONS, 1968 - 72

R. K. Srivastava

And

S. Selvaratnam

I. Introduction
II. Employment Data
III. Conclusion
IV. Statistical Appendix
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I. INTRODUCTION

The principal objective underlying the preparation of short-term employment projections for Ceylon was to focus attention on the slow growth of employment in the economy and thereby facilitate the formulation of an active employment - promotion policy. 1/ It was also considered that the projections, notwithstanding the limitations of data and methodology, would provide a broad picture of the growth of employment which in turn will help in identifying "critical" employment sectors.

This paper attempts a brief review of the available information on employment and discusses the procedure for estimating employment sector by sector.

II EMPLOYMENT DATA

The major sources of employment data in Ceylon are the Censuses of population, the more recent being those of 1946, 1953 and 1963. Besides, during the past decade four household sample surveys have been conducted in the Island, viz., Survey of Employment, Unemployment and Under-employment 1959-60; Survey of Ceylon's Consumer Finances, 1963, Sample Survey of Rural Employment 1964, and Labour

1/ See footnotes at end of article.

Force Survey 1968. The final results of the 1968 Survey are not yet available. There are also other subsidiary sources of information since employment data are collected in the course of various administrative and statutory activities. There are: Annual Census of Employment under the Central Government, Returns under the Employees Provident Fund Act, Annual Surveys of Industrial Production and Employment, Statistics of Employment under the Wages Board Ordinance etc. Differences in coverage, concepts and definitions have made it difficult to study, with any degree of precision, the growth of employment over time. The following discussion, based mainly on the Census data, presents some salient features of the employment situation since 1946.

The Population Census of 1946 disclosed that 2.646 million persons were in gainful occupation. The gainfully occupied population comprised "all persons who have been working as employer, employee, or own account or temporarily unemployed on the date of the Census.2/ Thus, unpaid family workers and persons seeking employment for the first time were excluded from the definition of the gainfully occupied. In the census of 1953, unpaid family workers were included in the definition of 'employed' but ' persons seeking employment for the first time' were excluded since they were treated as dependents. The total employment was reported to be 2.988 million. This represented an increase of approximately 1.7 per cent per annum since 1946. The proportion of those gainfully employed to the total population, however, fell from 39.2 per cent in 1946 to 36.9 per cent in 1953.

The Census of 1963 reported that total employment was 3.199 million or 30.2 per cent of the population. Including the unemployed, the labour force was 32.7 per cent of the population. The definition of the employed included unpaid family workers, and the unemployed were included in the labour force.

Similar low estimates of employment and the labour force were reported by the various household surveys. For example, the proportion of the economically active population was found to be 32.3 per cent in 1959-60, 31.4 per cent in 1963 according to the Survey of Consumer Finance, and 31.3 per cent in 1964 in the Survey of Rural Employment. Even after allowing for differences in definitions and coverage, the data show a continuous decline in the proportion of the economically active population in Ceylon. This decline is partly the result of changes in the age-structure of the population, but a more important part of the decline appears to result from changes in age-specific participation rates.3/

The growth of employment during the decade 1953-63 was only 206.000 or roughly 0.6 per cent per annum. The rate of absorption of Labour into the agricultural sector fell substantially from an annual average of 29,000 during 1946-53 to 10,800 during 1953-63. The rate of growth of employment recorded in manufacturing, trade and commerce, and services also declined.

Given the many problems of comparability of these data, however, not too much stress should be laid on fluctuations in the short-term growth of employment. We are on somewhat safer ground with long-term trends and these indicate that employment increased by about 1.2 per cent per annum over the period 1946-63. During this reasonably long post-war period, the sectoral distribution of employment has not shown any significant changes, as can be seen from Table 1. A major problem in interpreting the data is the large "not elsewhere classified" group. If one makes the (questionable) assumption that this group is, in reality, distributed between industries in the same proportion as the classified population, then the Table shows that the proportion of labour force in agriculture has not declined at all upto 1963. Indirect support for such a conclusion comes from a study of urbanisation in Ceylon during the post-war period. Using unadjusted data from the population censuses, this study shows that the proportion of population living in towns of more than 2,000 barely increased in the 1946-63 period.4/

However, within agriculture there has been a relative decline in employment in the plantation sector (tea, rubber and coconut) and a relative increase in the peasant farming sector. Employment in tea, rubber and coconut increased by only 46,300, or less than 0.5 per cent per annum, during the period 1946-63 while employment in the rest of the agriculture sector increased at the average rate of 2.6 per cent per annum. There have been similar shifts within the other sectors but their overall effect on sectoral proportions has been insignificant. Thus, it appears hardly likely that the economy's "centre of gravity" in terms of employment has shifted very much from the traditional towards the modern sectors.5/

Trends in employment since 1963 in specific sectors, for which data are available, were examined in a paper entitled "Employment Trends in Ceylon".6/ Although the estimates presented in this paper did not cover the entire net growth in employment opportunities, they did indicate that paid employment increased substantially during 1963-67 (by approximately 443,000). This trend was already noticeable during 1953-63. Data on the employment status of the population showed a shift from self-employment to wage-earners between 1953 and 1963.

Employment Projections:

Data on output, employment and productivity were not available for the preparation of a complete picture of sectoral employment between 1963 and 1968. It was, therefore, not possible to use the traditional productivity approach for estimating future employment.7/ Instead a variety of output: employment relationships and other assumptions were made, involving several judgemental factors. The estimates of future output and value added were taken from the Input-Output Table for Ceylon for 1968 and 1972.8/ The following discussion briefly summarised the procedure adopted as well as the projections of employment.

Agriculture:

The future capacity of agriculture as a source of productive employment was considered separately for plantation and non-plantation sectors. In 1963, tea and rubber accounted for nearly 45 per cent of total agricultural employment; coconut cultivation absorbed another 2.3 per cent; nearly 47 per cent of the agricultural employment was in paddy and other crops while the rest were in fishing, hunting, forestry and livestock. It is difficult to foresee any significant changes in those proportions in the near future. In activities like fishing and livestock, mechanisation and economies of scale have been progressively adopted in recent years. The labour requirements of coconut cultivation are extremely low.

The major plantation crops, tea and rubber, have, over the years, been faced with seriously adverse export markets and declining prices. With the greater need for keeping the costs of production competitive by raising productivity, it appears unlikely that the plantation sector will offer any significant possibilities for additional employment in the immediate future, notwithstanding the Governments' programme of support and rehabilitation and the possibility of increased acreage. Moreover, a recent survey showed that even with increasing production, nearly 9 per cent of the work force in tea and 10 per cent of the workforce in rubber was unemployed in the selected estates in 1967.9/

The employment situation on the estates would be affected to some extent by the repatriation of Indian labour. It is envisaged that 525,000 persons of Indian origin on the estates would be repatriated to India under a phased programme during the next 15 years. However, the precise implications of this measure on the employment situation in the near future are difficult to foresee for at least two reasons. Firstly, there is no predetermined rate at which repatriation will take place. Secondly, the proportion of indigenous population on the estates is at present quite small. The rate at which this proportion will increase in future depends upon many socio-economic factors and is difficult to forecast.

Considering these factors, a projection of employment in plantation crops was prepared. Available information indicated that employment in Tea has risen to 638,000 and in rubber to 185,000 by 1968. There was no change in employment in coconut. It was estimated that employment in rubber and coconut would remain at the 1968 level while in tea additional employment of about 21,000 could be expected on account of replanting during 1968-1972.

The possibilities of increasing employment in peasant agriculture, mainly paddy, depend upon several factors, e.g. nature of land tenure, technological changes in agricultural production techniques, increased provision of irrigation facilities, intensification of cultivation, extension of cultivated area etc. In Ceylon, according to the Census of Agriculture, 1962, 74 per cent of asweddumised paddy holdings were below five acres, representing nearly 41 per cent of the paddy acreage. Considerable thought is at present being given to the problems of agrarian reform, but it appears difficult to increase, to any appreciable extent, the labour requirements on small holdings where family labour is often sufficient for all farm activities. Agricultural research in Ceylon has given little attention to the relationship between labour availability and input on the one hand and agricultural production on the other. For forecasting future employment in agriculture, it is important to know the extent to which agricultural production could be increased, within a static technological framework, through greater use of labour, and how the introduction of technological changes will effect the labour input. Some empirical findings are available which show that labour demand can be stimulated by intensification of the production process but they cannot be readily used in a quantitative relationship. For example, labour requirements can be considerably increased if enough attention is paid to preparation of seed-beds, weeding, fertiliser application, row transplanting etc. During the two years 1967-1968, per acre yields have risen by over 28 per cent. Although there is no conclusive evidence regarding the effect of various factors contributing to the intensity of agricultural production on employment, it has been roughly

estimated that the cumulative labour input may increase at the rate of 10 per cent of the rise in per acre yields. On this approximate basis, employment in peasant agriculture is likely to have increased by about 21,000 during 1963-68 and the additional demand for labour can be estimated to be about 42,000 during 1968-72.

Extension of cultivated area by opening up new land under systematic programmes has long been recognised as a major source of increasing agricultural employment in Ceylon. Several schemes of colonisation and settlement have been undertaken in the 'Dry Zone'. During the period 1965-68, 17,400 families were settled on new land. This rate of settlement is expected to be continued during 1969-72. In addition, it has been estimated that 28,000 colony units will be established in the Mahaweli Project and 10,000 units in the Uda Walawe Project during the next ten years. Each colony unit will have 3 acres of irrigated land which is estimated to provide direct employment to 1.5 labour units.

New land will also be developed for extending sugar and cotton planations. According to the programmes now being prepared, it is estimated that 40,000 acres of land will become available for this purpose over the next ten years. The labour requirement of these plantations are expected to be of the order of 1.1 labour units per acre. To sum up, the total employment potential on account of new land during 1969-72 is likely to be of the order of 46,000 if the targets of land development and colonisation are fulfilled according to schedule.

The overall effect of these employment projections on output per worker can be summarised as follows:- In 1963, output per worker in the agricultural sector as a whole was about Rs 1,800. A very slight increase is noticed by 1968. However, there is a rise of over 3 per cent per year to Rs 2,185 by 1972.10/

In general, the agricultural labour force tends to be a residual formed by the rate of labour force growth on the one hand and the rate of growth of non-agricultural employment on the other. The preceding discussion of employment possibilities in agriculture should, therefore, be considered in the context of the rate of employment creation in other sectors.

Services:

In 1963, the services sector accounted for about 30 per cent of total employment, being next to the agricultural sector in order of importance. Government employment formed 54 per cent of the employment in the services sector and less than 20 per cent of total non-agricultural employment. Government employment grows roughly at about the same rate as recurrent Government expenditure minus the rate of growth of salaries. Wages and Salaries form 81 per cent of Government recurrent expenditure and this proportion is unlikely to have changed over the years. During the period 1963-1968, Government recurrent expenditure has been growing at an average annual rate of 3.8 per cent per annum, at current prices, and Government employment at about 1.9 per cent per annum.11/ Government capital expenditure on the other hand, has been growing during the period 1963-68 at an average of over 15 per cent per annum, and is likely to increase still further in future. However, wages and salaries form a small part of this expenditure and, therefore, its employment effect is comparatively small. Outside the Government sector, in personal, recreational and other miscellaneous services, the growth of employment is usually slow corresponding to the rate of growth of population.

The growth of Government employment has been fluctuating from year to year during the last five years. According to available information, its growth rate declined from 2.2 per cent during 1963-64 to 0.9 per cent in 1964-65 and 1.0 per cent in 1965-66.12/ Thereafter, it has been steady at 2.7 per cent during 1966-67 and 1967-68. Allowing for increments to salaries and possible increase in wages, it is estimated that employment should grow at the rate of 2.9 per cent per year. In addition, it was decided to fill

38,000 vacant posts in the public services (which are already provided for in the annual budget) as a high-priority measure. The combined effect of these two elements will increase government employment from 310,000 in 1968 to 391,000 in 1972.13/

It has been assumed that the current level of personal services will be maintained during the period 1969-72. The effect of increase in per capita income in terms of increased demand for personal services is likely to be, to some extent, against the rise in productivity of workers in this sector. The value added per worker appears to increase from Rs 1,518 in 1963 to Rs 1,835 in 1968 and Rs 2,185 in 1972.

Trade:

Employment opportunities in trade and commerce sector, are estimated to grow roughly at the same rate as value added minus an adjustment for increase in average wages. The rate of growth of the trade and comerce sector is dictated for most part by the overall growth of economic activity and, therefore, the possibilities of influencing the absorption of worker in this sector beyond current levels are limited. Allowing for these factors, it appears that employment will grow at the rate of 5.1 per cent per annum during 1969-72. The value added per worker will increase from about Rs 3,700 in 1963 to Rs 3,759 in 1968 nd Rs 4,186 in 1972.

Within the framework of development, opportunities for increasing productive employment are created mostly through the rapid growth of the modern sector comprising public utilities, transport, construction, mining and manufacturing. In Ceylon, both public utilities and mining occupy a very insignificant share of the employment market. Developments in the mining sector are likely to be labour intensive during the next four years. On the basis an of optimistic rate of employment growth, it is estimated that mining employment will increase from 17,600 in 1968 to 27,500 in 1972. Power development is capital intensive. For a growth of gross output at about 10 per cent, it is estimated that employment will grow at 4.9 per cent per annum.

Construction:

In 1963, construction employment was only 3.4 per cent of total employment and less than 8 per cent of non-agricultural employment. The average rate of growth of employment in construction during 1953-63 was a little over 4 per cent. With the increase in the availability of construction material, the employment potential of this sector should be quite considerable in the immediate future, specially in view of the fact that large-scale construction projects are likely to be undertaken. In Ceylon, use of construction and earth-moving equipment increased considerably during 1965-68, and this appears to have resulted in an increase in value added per workers from Rs 2,600 in 1963 to Rs 3,917 in 1968. If allowance is made for the use of machinery only in the larger construction projects, the growth of construction output will involve almost a corresponding amount of additional labour. It is hoped that future growth of construction activity will be largely labour intensive and, therefore, a fall in value added per worker is likely. The resultant increase in employment is estimated to be over 6 per cent per annum. It is clear that if the level of productivity is not reduced deliberately the additional employment implication between 1968-72 will only be 15,000.

Manufacturing:

In the manufacturing sector, considerable activity has been taking place in Ceylon during the last few years. However, adequate information is not available on the trends in output, employment and productivity in the industrial sector. On employment, the only complete source is the Census of Population 1963. Data on employment and output, though partial, are available from two other sources, viz., Statistics of Industrial Production maintained by the Ministry of Industries, and the annual surveys of industrial production conducted by the Central Bank of Ceylon. However, as an ECAFE study observed "the employment data available for a number of years (from these sources) have a serious defect. The coverage varies very much from year to year in both quality and quantity. The selected number of units are non-random, incomplete and widely different from year to year. This is

specially serious because of the fact that in some years a large number of units have been covered including all types of units, while in other years a smaller number(probably of only big units) have been covered. This leads to wild and erratic behaviour in the labour/output ratio and makes the given series rather useless."13/

However, in the absence of any other information it was decided to use the available date on output and employment in conjunction with other material e.g. Report of the Survey of Small Scale Industries (1964), Annual Administration Reports of Government Departments and State Corporations, untabulated results of the Survey of Industrial Production (1968), preliminary results of the First Round of the Labour Force Survey (1968) etc. A number of adjustments were made and discussions were held with representatives of various manufacturing establishments before the information on output and employment was used. One of the objectives of this pilot exercise was to pool together in a systematic manner all available information so that the range of realistic assumptions could be limited. The preliminary results for 1967-69 thus prepared 14/ were later used for preparing projections upto 1972.

The growth of employment in the industrial sector is considerably off-set by the increase in productivity which occurs for several reasons. Important among those are: improvements in the quality of the labour force specially as a result of upgarding its education, training and skill level, increasing degree of commitment of the industrial workers, better organisation of work through improved work procedures and application of modern management techniques, economies of scale, increased utilisation of established Capacity, changes in production technology etc. Some of these factors tend to influence productivity autonomously that is, independent of the grwoth of output, while others are directly relateable to output increase.

In order to obtain an idea of productivity changes in the industrial sector, an attempt was made to identify common reporting establishments from the surveys of industrial production conducted by the Central Bank of Ceylon during the period 1964-68. A total of 74 such establishments from 11 sub-sectors were identified and the growth of gross-output per worker was calculated. This exercise revaled that output per worker was declining in the following sub-sectors: footwear and leather products, knitted fabrics and made-up garments, rubber products, and soft drinks and carbonated beverages. Productivity appeared to be increasing in textiles, cement and products, metal products, and light engineering industries. However, it was felt that these indications may not be realistic for at least two reasons. Firstly, it was not clear as to what percentage of the total industrial production the surveys represented. Secondly, it was estimated that the total number of factory-type establishments was as large as 8,000 and a small list of 74 establishment could hardly reflect the overall situation.

In the absence of reliable data on productivity,it was decided to develop output: employment relationships for 117 commodity sub-sectors for which some information on employment was available and output had been estimated. In some cases, where available data did not permit this, growth rates or other norms were used. The resultant estimates were checked, as far as possible, with reports of various sector committees 16/ and also with representative establishments. In estimating additional employment, a distinction was made between output by expansion of existing capacity and by new capacity to be created. A coefficient of 0.33 was applied to output-employment relationship in all cases of expansion of existing capacity.

The resultant estimates of industrial employment showed an increase in value added per worker from Rs 2,658 in 1963 to Rs 3,415 and Rs 4,426 in 1972. The shift from low productivity to high productivity sectors and almost complete utilisation of available capacity by 1972 were the

major causes of the rise in value added per worker. This rise was specially noticeable in the following sub-sectors: milling, dairy products, textiles, chemicals and related products, oils and fats , petroleum and products, ceramics, cement, basic metals and rolling mill, light engineering, transport equipment, and machinery and equipment.

The results of the exercise are presented in Table 3. It has been estimated that employment in the industrial sector will grow at an annual rate of 6.6 per cent during 1968-72. The largest contribution to employment is from the textile sector which accounts for about 48 per cent of the additional employment. Other important contributors are: wood and wood products 11.6 per cent, light engineering 6.6 per cent and structural clay products 5 per cent. Details of assumptions made and limitations of the data are provided in Appendix I.

The methodology used here has several limitation and, therefore, the results should be interpreted with caution. The use of output: employment ratios does not take full account of the factors affecting labour productivity (para 29). Similarly, while the use of a uniform coefficient of 0.33 appears to give reasonable results, it is preferable to estimate coefficients for each sub-sector. There are various other difficulties in developing, with any great degree of precision, the relationships between production and employment. These difficulties are not dissimilar in degree or kind from those of estimating the GNP. However, it is considered that the first results of the exercise appear meaningful enough (perhaps optimistic) and their level of accuracy is not different from most measurements of planning variables.

III. CONCLUSION

The preceding discussion of employment implications of the output targets in different sectors of the economy may now be summarised. Firstly, it is important to note that, in view of the limitations of data and methodology,

the estimates presented here are in the nature of first approximations. They will be reviewed as soon as better statistical data become available. Secondly, these estimates are based on the implicit assumption that the various development programmes will be implemented according to a pre-determined schedule and that the targets will be realised in the manner and to the extent envisaged. Thirdly, it must be observed that the estimates of employment are, on the whole, optimistic. In the absence of any conscious policy for increasing the labour intensity of development programmes, it is likely that shortfalls may develop in the achievement of the employment potential.

The overall picture of growth of employment from 1968 to 1972 is presented in Table 2. The slow growth of employment in the agriculture sector is explained, in the main, by the uncertain prospects faced by plantation crops in Ceylon. However, agriculture will continue to be the largest single source of additional employment during 1968-72. The growth of employment in the non-agricultural sectors will, however, be 5.4 per cent per annum, i.e. more than three times the rate of growth of agricultural employment. The major contributors are manufacturing (113,200), services (105,000),and trade and commerce (88,500).

The results of this preliminary exercise provide some guidelines for future estimates of increase in productivity. Over the fairly long period 1963-72, productivity changes appear meaningful enough and, allowing for some adjustment in the manufacturing sector during 1968-72 for the utilisation of established capacity, the following growth rates could be used in the future.

Sector	Annual Rate of Increase in Productivity
Manufacturing	4.5%
Construction	3.0%
Trade and Commerce	1.5%
Public Utilities	5.0%
Transport and Communication	1.5%
Services	3.0%

The following relationships between growth of employment in manufacturing to that in tertiary sectors are also indicated:

Additional Emp. in	Manufacturing	=	100
"	Construction	=	42
"	Trade & Commerce	=	94
"	Transport & Comm.	=	49
"	Services	=	86

STATISTICAL APPENDIX

TABLE I

CEYLON: TRENDS IN THE GROWTH OF SECTORAL EMPLOYMENT, 1946 - 1963.

(In millions)

Sector	1946	1953	1963
1. Agriculture, Forestry, Fishing, etc.	1,381 (52.19)	1,584 (53.01)	1,692 (52.92)
2. Mining and Quarrying	0.009 (0.34)	0.013 (0.44)	0.010 (0.31)
3. Manufacturing	0.259 (9.79)	0.303 (10.14)	0.312 (9.76)
4. Construction	-	0.056 (1.87)	0.080 (2.51)
5. Banking, Trade and Commerce	0.205 (7.75)	0.246 (8.23)	0.287 (8.98)
6. Transport and Communication	0.093 (3.51)	0.104 (3.48)	0.132 (4.13)
7. Services incl. utilities	0.3420 (15.90)	0.487 (16.30)	0.510 (15.95)
8. Not elsewhere classified	0.279 (10.54)	0.197 (6.59)	0.174 (5.44)
9. Total - All Sectors	2.646	2.988	3.197

Note: Figures within brackets denote percentages. Data for 1946 and 1953 from the Population Census for the respective years; for 1963 from the results of 10 per cent tabulation of 1963 census.

TABLE 2

CEYLON: EMPLOYMENT PROJECTIONS BY SECTORS, 1968 - 1972

(In millions)

	Sectors	1968	1969	1970	1971	1972
	All Sectors	3.666	3.766	3.931	4.052	4.169
1.	Agriculture etc.	1.9162	1.9395	1.9719	2.0052	2.0377
2.	Mining and Quarrying	0.0176	0.01965	0.02197	0.02457	0.0275
3.	Manufacturing	0.3866	0.4138	0.4464	0.4783	0.4998
4.	Construction	0.148	0.1575	0.1671	0.1773	0.188
5.	Utilities	0.0099	0.01039	0.01091	0 01146	0.012
6.	Transport and Communication	0.209	0.2119	0.2207	0.2237	0.230
7.	Trade and Commerce	0.4025	0.423	0.4446	0.4673	0.491
8.	Services	0.576	0.600	0.6472	0.6640	0.681

TABLE 3

CEYLON: EMPLOYMENT IN MANUFACTURING, 1968 - 1972

(millions)

	1968	1969	1970	1971	1972
Manufacturing	0.3866	0.4138	0.4464	0.4783	0.4998
Milling	0.011108	0.011442	0.011863	0.012293	0.012662
Dairy Products	0.001587	0.001777	0.002107	0.002237	0.002267
Bread	0.012632	0.013145	0.013702	0.014303	0.014945
Other Bakery & Confectionary	0.003445	0.003592	0.003789	0.004005	0.004238
Carbonated Beverages	0.002322	0.002407	0.002474	0.002559	0.002648
Desiccated Coconut & Copra	0.003017	0.003096	0.003180	0.003265	0.003351
Other Processed Food & Animal Feed	0.007608	0.007912	0.008605	0.009063	0.009556
Wines & Spirits	0.001771	0.001817	0.001867	0.001915	0.001961
Tobbaco & Products	0.026498	0.027063	0.027935	0.028939	0.030013
Textiles	0.097000	0.112480	0.131300	0.148380	0.152775
Wood Products	0.079227	0.081070	0.082940	0.086944	0.092384
Paper & Products	0.016327	0.016837	0.017329	0.018476	0.019040
Leather & Products	0.000989	0.001037	0.001088	0.001141	0.001197
Rubber & Footwear	0.004798	0.005127	0.005462	0.005804	0.006188
Chemicals & Products	0.008885	0.009053	0.009300	0.009641	0.009881
Oils and Fats	0.002600	0.002625	0.002651	0.002679	0.002707
Coconut Fibre & Yarn	0.029245	0.030045	0.030845	0.031645	0.032465
Petroleum, Gas & Coal	0.000153	0.000360	0.000360	0.000360	0.000360
Structural Clay Products.	0.016450	0.017550	0.019350	0.020700	0.022100
Ceramic, Class & Products	0.017729	0.017820	0.017870	0.018000	0.018300
Cement & Products	0.002226	0.002439	0.003317	0.003471	0.003558
Basic Metal & Rolling Mill	0.002512	0.003235	0.003372	0.003507	0.003817
Light Engineer	0.031261	0.032878	0.034571	0.036593	0.038767
Transport Equipment	0.003713	0.005091	0.006183	0.006598	0.007921
Machinery & Equipment	0.003467	0.003901	0.004930	0.005830	0.006735

APPENDIX I

Employment in the Manufacturing Sector 1963, 1968 & 1972

The following data provide details of employment for sectors 10-34 of the Input-Output Table. These sectors do not account for the entire output for "Manufacturing" under ISIC classification 2-3, since a small part of the manufacturing activities relating to agricultural commodities has been included under Sectors 1-8 relating to Agriculture in the Input-Output Table

SECTOR 10

		O/E 1967	EMPLOYMENT 1963	1968	1969
Rice and Grain Mill Products			8,571	11,108	11,442
Code	Sub-sector				
2029	Rice Milling	0.0129	-	10,208	10,390
2093) 2097.1) 2097.4)	Wheat flour	-	-	62	200
2097.5	Other Grinding Mill Products Products		-	938	952

continued....

		EMPLOYMENT 1970	1971	1972
Rice and Grain Mill Products		11,863	12,293	12,662
Code	Sub-sector			
2029	Rice Milling	10,797	11,213	11,568
2093) 2097.1) 2097.4)	Wheat Flour	200	200	200
2097.5	Other Grinding Mill Products Products	966	980	994

Information in regard to rice milling is incomplete. There are at present 16 government mills and 1,030 private mills. These fall into two broad categories - huller type and automatic, but the exact distribution is not readily available. According to the 1963 Census total employment under 'Grain Mill Products' was 9,571. At that time, there were only rice mills in the country and, therefore, the employment figure can be attributed to rice mills. The production of paddy in 1963 was 49.2 million bushels. Out of this about 6 million bushels can be taken out for seed and home milling. The resultant 43.2 bushels will yield 617 thousand tons of rice at 70 bushels per metric ton. Although on this basis, a norm of employment can be developed by using the overall figure for production and employment, it will not be wholly realistic in terms of the size and type of mills, the allocation of paddy that they are able to obtain, and the kind of operation (raw rice or par-boiled) undertaken. In the absence of these details, however, a norm of 14 persons per 1,000 tons derived from base year 1963 has been used for estimating employment in 1967. Thereafter, the output: employment ratio of 0.0129 has been used.

In regard to Flour Milling, no specific information is available. Conversion of wheat into flour was being undertaken on a small scale in grinding mills prior to 1968. When a State Flour Mill was set up the output was 9 thousand tons of wheat flour and 2 thousand tons of bran and the reported employment 62 in 1968. The capacity of the mill is 50.7 thousand tons of wheat flour and 16.2 thousand tons of bran and the employment at full capacity is estimated at 200. It is hoped that the Mill will operate at full capacity in 1969.

No data are available in regard to employment in grinding mills, or their existing capacity, or their number and size. Those mills are usually engaged in grinding rice, chillies and spices and other miscellaneous items. The Sector Sheets of the Prospective Planning Division have estimated additional employment of 100 persons over the seven year period 1965-1972. In the absence of any information, the table shows proportionate share from 1968 onwards.

SECTOR 11

		O/E 1967	EMPLOYMENT 1963	1968	1969
Dairy Products		-	698	1,587	1,777
Code	Sub Sector				
2023	Powdered Milk	-	-	-	-
2022.1	Condonsed Milk	-	-	N.A.	-
2021.1	Pasteurised & Sterilised Milk	-	-	N.A.	N.A.
2026.2	Skim Milk	-	-	-	-
2022.3	Malted Milk	-	-	-	-
2024	Other Milk				
2028	Products	-	-	N.A.	N.A.
2025					
2029.1					
2026.1					
2027					

continued....

		EMPLOYMENT 1970	1971	1972
Dairy Products		2,107	2,237	2,267
Code	Sub Sector			
2023	Powdered Milk	80	100	120
2022.1	Condensed Milk	-	-	-
2021.1	Pasteurised & Sterilised Milk	-	-	-
2026.2	Skim Milk	2,027	2,137	2,147
2022.3	Malted Milk	-	-	-
2024	Other Milk			
2028	Products	-	-	-
2025				
2029.1				
2026.1				
2027				

Manufacturing of Dairy Products:

In this sector there are a few (about 7 - 9) large units and several small units. While some information is available regarding the large units, no data are available on the number of small units, their production and employment. The employment estimates made here are based on several assumptions. Firstly, it is assumed that employment in the National Milk Board and its ancillaries (condensary) should be wholly included. To this, the employment in the dairy section of Ceylon Cold Stores has been added. Employment in the manufacture of ice-cream, available from the Yellow Book, is the third component. Employment in base year 1967 is the result of these three items only and thus ignores small items like butter, ghee, curd, yoghurt, cheese etc. whose contribution is not likely to be significant. In estimating the additional employment for 1968 and 1969, however, the output/employment ratios for 1967 have not been used. The main elements of additional output are the condensary and powered milk plant. Actual employment figures of 1968 (ascertained from the National Milk Board) have been used along with a marginal addition for ice-cream. For 1969 also, the same method is used. Additional production figures for the Milk Powder Factory are ignored for 1968 as well as 1969 as it has not reached the production stage. Employment estimates made here are likely to be somewhat lower since small producers of milk, and milk products are not taken into account. Employment estimates made by the National Milk Board for new factories (Skim Milk, Malted Milk) have been used for the year 1970-72.

SECTOR 12

	EMP 1963	O/E 1967	EMPLOYMENT 1968	1969	1970	1971	1972
Bread	-	0.11	12,632	13,145	13,702	14,303	14,945

Bread:

No separate figure of employment in the manufacture of bread is available. The total employment in 'bakery

products' was 14,746 according to the Population Census of 1963. The manufacture of bread is carried out in large and small bakeries whose number, output or employment is not known. This activity also falls outside the scope of the surveys conducted by the Ministry of Industries or the Central Bank. In order to obtain a picture of employment, a representative of the Master Bakers Association and a proprietor of a medium sized bakery were contacted. It appeared that on the basis of 200 lbs. of bread per day requiring two workers a fair picture of the employment situation could be obtained. Using that ratio, the relationship between the value of output and employment was worked to be 0.11. This has been used in the table. It was also revealed in the discussion with the representatives that the production of bread fluctuates to some extent depending upon the availability of rice for local consumption. This fluctuation means that a good proportion of employment in medium and small bakeries is temporary - daily or weekly - in nature and continuing or permanent employment is much less than figures in the table indicate.

SECTOR 13

		O/E	EMPLOYMENT		
		1967	1963	1968	1969
Confectionary and Biscuits		-	-	3,445	3,592
Code	Sub Sector				
208.3)	Chocolate Cocoa	0.103	-	1,987	2,117
208)	and Confectionary				
2062	Biscuits	0.087	-	1,458	1,475

continued....

		EMPLOYMENT		
		1970	1971	1972
Confectionary and Biscuits		3,789	4,005	4,238
Code	Sub Sector			
208.3)	Chocolate Cocoa	2,288	2,481	2,694
208)	and Confectionary			
2062	Biscuits	1,501	1,524	1,544

Confectionary:

The value of output given in the Yellow Book is similar to that given in the Sector Sheets. Hence the employment figure of the Yellow Book has been used.

Biscuits:

The output figures in the Yellow Book and Sector Sheets for 1967 are quite similar. Hence the employment figure given in the Yellow Book was accepted. In both cases the output: employment ratios have been used for future projections.

SECTOR 14

	EMP 1963	O/E 1967	EMPLOYMENT 1968	1969	1970	1971	1972
Soft Drinks	2,224	0.134	2,322	2,407	2,474	2,559	2,648

Soft Drink etc:

Information on production and employment in this sector is somewhat conflicting. The Yellow Book coverage falls from 23 units in 1965 to 20 in 1966 and only 10 in 1967. The value of production in 1967 (at 1965 prices) is Rs 15.6m. and employment is only 675, against Rs 14.08 m. and 1,857 in 1965. The Central Bank Report also records a fall in coverage from 29 firms in 1965 to 18 in 1967, fluctuation in the value of production, but a rise in employment from 1,343 in 1965 to 1,942 in 1967. The employment estimate in the 1963 Census is 2,224. Even if the 1965 output/employment relationship from the Central Bank Report (0.084) is used with value of output in Sector Sheets, the base of employment is only 1,436. This is too low compared to the 1963 Census figure and cannot be accepted. If the 1967 relationship from the Central Bank Report (0.134) is used (ignoring the price factor), with the value of output in the Sector Sheets, the resultant employment in 1967 is 2,291. This figure looks more realistic and, therefore, this relationship appears to be preferable, and has been used for the projections.

SECTOR 15

		O/E 1967	EMPLOYMENT 1963	1968	1969
Desiccated Coconut and Copra		-	-	3,017	3,096
Code	Sub Sector				
2098	Desiccated Coconut.	0.013	866	937	997
3132	Copra	0.013	-	2,080	2,099

continued....

		EMPLOYMENT 1970	1971	1972
Desiccated Coconut and Copra		3,180	3,265	3,351
Code	Sub Sector			
2098	Desiccated Coconut	1,062	1,127	1,192
3132	Copra	2,118	2,138	2,159

Desiccated Coconut and Copra:

According to the 1963 Census of Population, 866 persons were engaged in the manufacture of desiccated coconut. In 1968 there were 85 mills producing desiccated coconut and their capacity varied from 4,200 lbs. to 21,100 lbs.

Copra is produced on coconut estates as well as outside and the labour requirement should be different in the two cases. Dealer's copra constitutes 74 per cent of the total output.

For both products, an output : employment ratio of 0.013 was used in consultation with leading establishments.

SECTOR 16

		O/E 1967	EMPLOYMENT 1963	1968	1969
Poultry Feed and Sugar		-	-	7,608	7,912
Code	Sub Sector				
2096.2	Poultry and Animal Feed	0.070	-	3,280	3,373
2012.9	Preservation of Meat	0.056	-	99	99
2099	Other prepared foods	0.099	-	426	428
2071.1) 2071.2) 2071.3) 2072) 2073)	Sugar	0.274	-	1,593	1,784
2094	Canning and Preservation of Fruits and Vegetables	0.134	75	748	766
2095.1) 2095.2)	Preservation of Fish and Sea Food	0.14	-	1,362	1,362

continued....

		EMPLOYMENT 1970	1971	1972
Poultry Feed and Sugar		8,605	9,063	9,556
Code	Sub Sector			
2096.2	Poultry and Animal Feed	3,484	3,595	3,662
2012.9	Preservation of Meat	99	99	99
2099	Other Prepared foods	430	434	436
2071.1) 2071.2) 2071.3) 2072) 2073)	Sugar	2,176	2,367	2,504
2094	Canning and Preservation of Fruits and Vegetables	914	966	1,248
2095.1) 2095.2)	Preservation of Fish and Sea Food	1,502	1,502	1,502

Preparation of Animal & Poultry Feed:

There are widely differing estimates of the value of output of this item in different sources. The sector Sheet and the Yellow Book show the value to be Rs 21.1 m. (Output 1.6 m.cwt.). The value of production in the Annual Report of the Central Bank for 1967 (Table 11 (B) 2-p.44) is Rs 54.2 million at 1967 prices, or about Rs 40 m. at 1965 prices. This is almost twice the value of output in the Yellow Book. Whether this difference is due to the difference in the number of reporting units cannot be checked as this is not known for the Central Bank coverage. The lower estimates of employment have been indicated in the table since they are in line with the output figures from the Sector Sheets. The output: employment ratio thus derived has been used for projections.

Preparation and Preservation of Meat:

Information available in the Yellow Book and the Sector Sheets on output is comparable. Hence employment figures of the Yellow Book have been accepted and the relationship has been used here.

Other Prepared Foods:

This group accounts for a small value of output in the Yellow Book as well as the Sector Sheets. Since no other information is available, it is difficult to check the reliability of the output/employment ratio used. The manufacturing activity is carried on in very small units. The employment figure for 1963 is not comparable since it covers items 6,9 and 10 in addition.

Sugar:

The employment estimate for the base-year 1967,for the Sugar Corporation, given in the Yellow Book is only 1,373; much lower than the figure of 2,933 for the year

1966-67 in the Central Bank Report for 1968. The reason for this difference is not quite clear. The lower estimate of employment has been shown in the table after checking it from the Corporation. The base-year output: employment ratio has been used for projection.

Canning & Preservation of Fruits etc.

The value of output given in the Sector Sheets and Yellow Book is comparable. Hence the employment figure of the Yellow Book and the output: employment ratio of the base year have been used.

Sea Food:

The coverage of this item in the Yellow Book is quite inadequate; hence the value of output as well as employment has been rejected. The Annual Report of the Central Bank for 1968 shows that the Fisheries Corporation handled 9.4 m. lbs. of fish in 1967 (purchased from fishermen 2.8 m. lbs. and caught 6.6 m. lbs.) with an estimated sale value of Rs 10.74 million. The Sector Sheets show that value of production of fish and other sea food in 1967 was Rs 9.6 million at 1965 prices. In the absence of other information and in view of the fact that the two values are comparable, it has been assumed that employment in the Fisheries Corporation represents bulk of the employment in the sector 'canning and preservation of fish and other Sea Food'. On this basis a relationship has been developed and used in the table. This assumption is not strictly valid and there is thus an element of under-estimation in the estimates.

Manufacture of Wines and Spirits:

This group consists of three main categories. (1)Distilling, rectifying and blending of spirits i.e. Arrack, brandy and other rectified spirits. (ii)Breweries including malt i.e. beer and stout and (iii)Fermented beverages i.e. Toddy and wine. According to the 1963 Census the employment in these groups was: (i) - 626; (ii) - 520; and (iii) - 11,191.

SECTOR 17

		O/E 1967	EMPLOYMENT 1963	1968	1969
Wine and Spirits		-	-	1,771	1,817
Code	Sub Sector				
2115)	Arrack, Rectified				
2111.1)	and Denatured				
2111.2)	Spirits	0.0142 (not used)	626	873	903
2112	Wines	0.22	N.A.	22	22
2113	Bear and Stout	0.06	520	456	466
2119	Other Alcholic Drinks	0.06	N.A.	420	426

continued....

		EMPLOYMENT 1970	1971	1972
Wine and Spirits		1,867	1,915	1,961
Code	Sub Sector			
2115)	Arrack, Rectified			
2111.1)	and Denatured			
2111.2)	Spirits	933	963	993
2112	Wines	22	22	22
2113	Beer and Stout	478	488	498
2119	Drinks	434	442	448

Information on arrack, brandy and other rectified spirits is available only from the Yellow Book and the output/employment relationship based on 1967 information gives a total employment of 841 in the base year. This is likely to be an over-estimate since increase in production in this sector is chiefly by expansion of existing facilities.

In the case of beer and stout, two sets of data are available. The Yellow Book gives the value of production as Rs 14.7 m. at 1967 prices (which comes to Rs 16.7 m. at 1965 prices) from two reporting units with an employment of 436 persons. The Central Bank Report shows the value of production as Rs 5.5 m. in 1967 and an employment of 431. The Sector Sheets of the Perspective Planning Division give the value of production as Rs 7.3 m. in 1967. This value is arrived at the multiplying the 1967 quantity from the Yellow Book by the price of Rs 5.2 per gallon (and not 11.86 as worked from 1965 figures of the Yellow Book). In view of this the value of production for 1967 was accepted at Rs 7.3 m. The employment figure of 436 was accepted although it was lower than the 1963 Census estimate.

SECTOR 18

		O/E 1967	EMPLOYMENT 1963	1968	1969
Tobacco Products		-	22,663	26,498	27,063
Code	Sub Sector				
2201	Cigarettes	0.006	889	1,856	1,903
2202	Cigars	0.665	5,183	5,764	5,808
2203	Beedies	0.277	16,591	18,354	18,825
2204)					
2201.1)	Other Tobacco	0.100	-	524	527

continued.....

		EMPLOYMENT 1970	1971	1972
Tobacco Products		27,935	28,939	30,013
Code	Sub Sector			
2201	Cigarettes	2,015	2,134	2,263
2202	Cigars	5,852	5,940	6,007
2203	Beedies	19,471	20,182	20,934
2204)				
2201.1)	Other Tobacco	597	683	809

Tobacco Products:

This Yellow Book provides information on output (Rs 199.36 m. at 1965 prices) and employment (1,500) for 1967 with respect to only two units. The Central Bank Report gives the information for 566 firms with a total production of Rs 92.0 million (at 1967 prices) and employment of 10,194 persons. According to the 1963 Census, the employment in Tobacco manufactures was 22,663, of which cigarettes accounted for 889, cigars 5,183, beedies 16,125 and others 466. It is obvious that the coverage of the Yellow Book is grossly incomplete and even the Central Bank Report gives an inadequate picture. The activity in this sector can be broadly divided into three groups: (i) Cigarettes and Smoking tobacco, (ii) Cigars and (iii) Beedies, chewing tobacco and others. The information given in the Yellow Book is in respect of cigarettes and smoking tobacco only. Thus base year employment for 1967 has been revised to 1,560 on the basis of the Yellow Book ratio and Sector Sheet output. In regard to cigars, there is one large firm but several small units making local cheroots. There is no information about these. The Sector Sheets make an assumption of increased production at the average annual rate of 2.5 per cent. This is likely to increase employment in the small sector at about the same rate. Taking the 1963 figure at the base, employment in 1967 comes to 5,720 and additional employment will be 44 in 1968 and 44 in 1969. The output: employment ratios have been used for estimating future employment.

SECTOR 19

	EMP 1963	O/E 1967	EMPLOYMENT 1968	1969	1970	1971	1972
Textiles and Products*	33,380	-	97,000	112,480	131,300	148,380	152,775

* The estimates of employment are based on the Sector Committee's detailed report on Textiles. Hence the details have not been repeated here.

SECTOR 20

		O/E 1967	EMPLOYMENT 1963	1968	1969
Wood and Products		-	-	79,227	81,070
Code	Sub Sector				
2501	Saw Milling	-	9,452	10,400	10,680
2502	Plywood and Tea Chests	-	682	1,042	1,250
2503	Wooden Furniture	-	55,658)	16,015	16,335
2504	Pasticle Board	-	-)	-	-
2509	Other Wood Work	-	5,828)	51,770	52,805

continued....

		EMPLOYMENT 1970	1971	1972
Wood and Products		82,940	86,944	92,384
Code	Sub Sector			
2501	Saw Milling	10,968	11,264	11,568
2502	Plywood and Tea Chests	1,450	3,050	6,750
2503	Wooden Furniture	16,661	16,993	17,331
2504	Pasticle Board	-	700	700
2509	Other Wood Work	58,861	54,937	56,035

Wood and Products:

Information regarding employment in Wood and Wood-based industries is very scanty.

The population census of 1963 provides some benchmark data for this group. According to these data, the number of persons engaged in ISIC group "Wood, Bamboo and Cork except furniture" is 15,962 and in "Furniture and fixtures", 55,658. Compared to this information, the Yellow Book shows that 794 persons are employed in 'Plywood, Plywood chests and Flush Doors' and 1,333 in 'Manufactures of Wood N.E.S.' The Central Bank Report for 1967 shows that 1,466 persons are employed in'Manufactures of Wood' in 13 reporting units, accounting for an output of Rs 3.6 m. In view of limitations of data, output: employment relationships could not be used for building up the base year (1957) employment picture. The following notes explain the method by which the estimates shown in the preceding table were obtained.

Saw Milling: The Sector Sheets show that production of timber was 5.5 million cubic feet in 1967. This figure appears to be based on the report of the Forest Department which shows that in 1966-67, 5.46 m. cubic feet of timber were produced under 'Advance Account'. Since timber is also produced outside 'Advance Account' activities, this is obviously an underestimate. The base year figure is well above 6.3 m. cubic feet which is the total for timber from Crown Forests alone, and ignores private forests, plantations etc. How many saw mills, hand-saw and pit-saw units were engaged in processing this timber is, however, not known. This information is crucial for estimating employment. The employment pattern in saw-mills also differs considerably depending upon the type of machinery used and the degree of automation. Hand-saw and pit-saw units are more employment intensive. Moreover, employment in saw-milling may be seasonal, corresponding to timber extraction seasons or fluctuating according to the level of supply and flow during the year. In the absence of all this information, a very tentative estimate is made here based on the rate of growth of production.

On the basis that the 1966 Census made a complete coverage for the saw-milling industry, the extent of regular employment in saw milling is taken as 9450 in 1963. Between 1963 and 1967, the production of timber from Crown Forests has reportedly increased by 26 per cent according to the Annual Administration Reports of the Forest Department. For the period subsequent to 1967, the Sector Sheets assume a growth rate of 5 per cent per annum. It has been assumed that 3 per cent of the growth in production will be absorbed by existing capacity without any increase in employment, while the remaining 2 per cent will involve a corresponding increase in employment. On this basis, the 1963 figure has been brought up to 1967 and also 1968 and 1969.

The possibilities of further employment in saw milling can be better studied by undertaking a comprehensive survey of existing saw mills and hand and pit saws, their number,

existing capacity, nature of employment, as well as modernisation or expansion programmes, and the possible pattern of flow of timber to different units. Such a survey should be undertaken very early.

Plywood, Tea Chests, etc: According to 1963 Census, plywood and plywood based industries employed 682 persons. The Yellow Book shows that in 1967, 794 persons were engaged in the manufacture of plywood, tea-chests and flush doors, accounting for a production of Rs 6.62 million. The Central Bank Report for 1967 shows that for a production of Rs 6.8 million, there were 987 persons. To some extent, the discrepancy between the employment figures of the Central Bank and the Yellow Book can be explained by some difference in the reporting period and the inclusion of clerical and other employment(not directly related to manufacture) in the Central Bank report. In view of these factors, it was decided to use the employment figures of the Plywood Corporation as the basis for estimation.

In 1967 the Corporation, which accounts for almost the entire production in this group, employed 778 persons. This is taken as the base year employment. To a small extent, some manufacture of plywood was outside the Corporation but in the absence of additional information, the employment effects of this were ignored. In 1968, the employment rose to 1042. Undoubtedly, a part of this additional employment would be in management, marketing, development schemes etc., but this factor has also been ignored here. The actual figures of employment in 1967 and 1968 in the Plywood Corporation cannot be projected to 1969 on the basis of normative relationship between output and employment. On the assumption that the full production capacity will be realised by the end of 1969, it is estimated that there will be about 20 per cent increase in employment.

Furniture and Fixtures, Other Woodwork and Products:

Information on employment in this group is extremely limited. Both the Yellow Book and the Central Bank reports do not cover this group specifically. The Census of 1963 shows that 55,658 persons were employed in 'furniture and fixtures', and 5,828 in 'other woodwork'.

The Census figures do not distinguished between furniture making and other activities. For the purpose of estimating employment, it has been assumed that in 1963 approximately 3,000 persons were engaged in furniture making on an organised scale, and about 11,500 on a small scale and as self-employed workers; while the rest, approximately 46,900 persons, were engaged as builders, carpenters and in other related activities. This distribution pattern accords roughly with the prevailing situation but is difficult to verify without an extensive survey.

The Sector Sheets assume that the output of these sectors will grow at 5 per cent per annum during the period 1968-72. It is unlikely that there will be a corresponding increase in employment. Broadly speaking, the maximum output per worker in the organised sector can be placed at Rs 18,000 - 20,000 per annum against the present rough estimate of about Rs 8,000 - 10,000. In the unorganised sector, output per worker was reported to be Rs 3,800 in 1964 against a likely range of Rs 8,000 - 12,000. Increased output will possibly be accounted for by gains in output per worker.

In the absence of any statistical data, it has been assumed that against an increase of 5 per cent per annum in production, employment will increase at the rate of 2 per cent per annum, the balance being absorbed by a rise in output per worker. A detailed investigation is required to check the actual situation.

The estimates of employment shown in the table are thus built up from 1963 on the above basis. They provide only a very tentative picture of employment.

SECTOR 21

		O/E 1967	EMPLOYMENT 1963	1968	1969
Paper and Products		-	13,092	16,327	16,837
Code	Sub Sector				
2701.1) 2702)	Paper and Pulp	-	1,343	926	1,079
2704	Paper Products	0.108	-	2,951	3,034
2703	Paper Board	-	-	-	-
280	Printing	0.17	11,749	12,450	12,724

continued....

		EMPLOYMENT 1970	1971	1972
Paper and Products		17,329	18,476	19,040
Code	Sub Sector			
2701.1) 2702)	Paper and Pulp	1,179	1,209	1,209
2704	Paper Products	3,120	3,214	3,326
2703	Paper Board	-	-	800
280	Printing	13,030	13,353	13,705

Paper and Products:

The group 'Paper and Paper Products' is relatively homogenous and does not present serious difficulties in estimating employment. The production of paper is limited to the Eastern Paper Mills Corporation and the manufacture of paper products, though varied in nature, appears to be well-organised. The following notes explain the estimates made in the preceding table:

Manufacture of Paper: According to the 1963 Census, only 1,343 persons were engaged in the manufacture of "Paper and Paper Products". The Central Bank Report for 1967 gives an estimate of 2,660 for "Paper,articles of paper and paper board" accounting for Rs 34.7 million production in 78 reporting units. In the Yellow Book, information is available separately for paper and for products.

According to this information, 892 persons were employed in the manufacture of paper in 1967 in the Eastern Paper Mills Corporation. This figure has been accepted as the base-year employment. The total employment in the Corporation in 1967 was shown as 1,218 in the Central Bank Report for 1967 but in the 1968 Report it is shown to be 862 for 1966-67. The reason for this difference could not be ascertained.

In making estimates for 1968 and 1969, the figures reported by the Central Bank have been accepted on the basis that the base-year employment of 892 given in the Yellow Book represented the total employment in the Corporation.

Paper Products: A number of paper products are listed in the Yellow Book. The total employment is 3,123 in 87 reporting units accounting for an output of Rs.26.7 million in 1967. The output: employment ratio for most of these products is similar and the range of variation is small. It is not known whether the Yellow Book coverage is complete. In the absence of any other information, the average relationship between output and employment for the whole group was used for the purpose of estimating employment in 1968 and 1969. No information is available regarding the present utilisation of capacity in these industries. Since the Sector Sheets indicate that additional output will be achieved by the existing capacity, a factor of 0.33 has been applied in estimating employment.

Paper Board: There is no output of paper board at present. It has been estimated that the initial employment in the Paper Board Plant in 1972 will be 800.

Printing and Publishing: This group is not covered by the Yellow Book or the Central Bank surveys. The Sector Sheets show that output in this group will grow at 6.6 per cent per annum.

The Census of 1963 reports that in all 11,749 persons were engaged in printing and publishing. There is no other source of information regarding employment in this group. However, "Printing" is a Wage Board Trade and some information is available regarding employment from the Annual Administration Reports of the Commissioner of Labour. The reports for the year 1963-64 and 1964-65 show that on 30th June 1964, 7,251 persons were engaged in printing in 375 establishments and on 30th June 1965, 7,818 persons were employed in 568 establishments. Data for subsequent years are not available as the Labour Department decided not to process the information being collected.

It is estimated that there are about 800 printing presses in the country, out of which about 600 are registered with the Eastern Paper Mills Corporation for issue of paper. There has been considerable expansion of printing capacity since 1965. No specific information is available regarding utilisation of capacity although it is well known that output can be increased in this group with relatively little expansion in employment.

The estimate for 1967 has been prepared by assuming a 2 per cent increase in employment over 1963. For 1968 and 1969, output: employment relationship has been used along with a factor of 0.33.

SECTOR 22

		O/E 1967	EMPLOYMENT 1963	1968	1969
Leather Goods		-	-	989	1,037
Code	Sub Sector				
2093.1	Tanning	-	N.A.	415	435
2909.1	Leather Goods except footwear	-	451	574	602

continued....

		EMPLOYMENT 1970	1971	1972
Leather Goods		1,088	1,141	1,197
Code	Sub Sector			
2093.1	Tanning	456	478	501
2909.1	Leather Goods except footwear	632	663	696

Tanning:

The value of output for this group is shown as Rs 9.9 million in the Yellow Book at 1967 prices. There is a significant difference in price per unit between the Sector Sheets and the Yellow Book for 1965. In view of this difficulty, the value of output given in Sector Sheets for the base year 1967 was accepted along with the employment from the Yellow Book. According to the Yellow Book employment in this group was fluctuating from 434 in 1965 to 464 in 1966 and 415 in 1967 in respect of twelve reporting units, while the output has been more or less steady. It appears that even in the Public Sector Tanner, employment declined from 121 in 1967 to 110 in 1969. In the light of this information, the employment figure for this group was kept constant at 415 for 1968. In consultation with the public sector tannery, an increase of 5 per cent per annum in employment was estimated for the years, 1969-72.

Other Leather Products:

In preparing the base-year estimate of employment, besides the three items - leather suitcases and bags, sports goods, and others - employment in non-leather suitcases was also added. The total value of output in 1967 was thus Rs 3.9 million at 1967 prices. Instead of developing output employment relationships, discussions were held with manufacturers, and it was estimated that with the increased availability of raw materials, employment will increase by about 5 per cent per annum from 1969 onwards.

SECTOR 23

		O/E 1967	EMPLOYMENT 1963	1968	1969
Footwear and Rubber Products		-	3,308	4,798	5,127
Code	Sub Sector				
3003)					
2902)	Footwear	0.086	1,376	2,886	2,998
3001.2	Bicycle Tyre and Tubes	-	-	214	214
3001.3	Motor Vehicle Tyres and Tubes	-	- 1,932	883	1,033
3002	Tyre Rebuilding	-		1,273	1,313
3009	Other Rubber Products	-		542	569

continued....

		EMPLOYMENT 1970	1971	1972
Footwear and Rubber Products		5,462	5,804	6,188
Code	Sub Sector			
3003)				
2902)	Footwear	3,115	3,238	3,401
3001.2	Bicycle Tyres and Tubes	214	214	214
3001.3	Motor Vehicle Tyres and Tubes	1,183	1,333	1,483
3002	Tyre Rebuilding	1,353	1,393	1,433
3009	Other Rubber Products	597	626	657

Footwear and Rubber Products:

The group "Rubber and Rubber Products" includes a variety of industries. For most products, the value of output in the Yellow Book, the Central Bank Report 1967, and the Sector Sheets was reported to be different. The Central Bank Report for 1967 treats all the rubber products as one group and gives an employment figure of 2,195 in 91 reporting units accounting for an output of Rs 20.7 million. The Yellow Book gives an employment total of 2,688 in 50 reporting units accounting for an output of Rs 28.68 million: The following notes explain the manner in which employment estimates have been prepared.

Footwear: This includes both leather and rubber footwear. The Yellow Book shows that output of footwear in 1967 was 4.45 million pairs at a value of Rs 27.38 Mn. at 1965 prices. The output indicated in the Sector Sheets was only 3.1 Mn. pairs, and value Rs. 17.7 Mn. but these figures have since been revised as follows:

	1967	1968	1969
Quantity (Mn. Pairs)	5.7	6.24	6.91
Value (Rs. Million)	31.7	36.8	40.7

It was not possible to compare the Yellow Book and Sector Sheet data with Central Bank Reports as the latter grouped all leather products together.

The 1963 Census of Population reported 1,376 persons engaged in the manufacture of footwear. The Yellow Book estimate for 1967 was 2,380 for a production of Rs.27.38 Mn. in respect of reporting establishment.

In order to obtain the base-year estimate of employment, it was assumed that the output: employment relationship of the Yellow Book will hold good for the entire output

in the Sector Sheets (revised). This is not strictly correct. Although the total number of establishments engaged in the manufacture of footwear is not known, it is apparent that the difference in output between the Sector Sheets and the Yellow Book represents the value of output in small establishment with low productivity. There is thus an element of under-estimation in the employment figure for the base-year.

The employment estimates for 1968-72 were derived by using the base year output: employment relationship and applying a factor of 0.33.

Bicycle Tyres and Tubes: The value of output in the Yellow Book and the Sector Sheets is very similar. Hence the employment figure of the Yellow Book was accepted for the base year. The increase in output is too small for any increase in employment during 1968-72 since there is a good deal of unused capacity in the industry, and it was ascertained from the manufacturing establishments that no new employment is likely to be created in the course of the next few years.

Automobile Tyres and Tubes: The Yellow Book shows in all, about 20 units engaged in the manufacture of tyres and tubes during the period 1965-66. This is obviously a mistake since all these units are engaged only in retreading. Production of tyres and tubes started in 1967. The Sector Sheets output figures are taken from the Central Bank Report 1967, but the 1968 Report gives slightly different figures.

In preparing employment estimates, the base year (1967) figure in the Yellow Book has been accepted. This is slightly less than the total employment for 1967-68 in the Tyre Corporation as given in the Central Bank Report 1968. The employment in the Corporation for 1968-69 was taken as the estimate for 1968. For 1969, an estimate of 1,140 was made in consultation with the Corporation.

Since there is considerable unused capacity in the tyre factory, output: employment ratios cannot be used for estimating future employment. The Sector Committee's estimate of additional employment for the period 1969-72 has, therefore, been used.

Tyre Rebuilding: The Yellow Book records 20 units engaged in tyre rebuilding accounting for an output of Rs.6.96 million. The value of output in the Central Bank Report 1967 is Rs.6.7 million and in the Sector Sheets Rs.7.2 million. These figures are fairly close and therefore, the employment estimate given in the Yellow Book for 1967 was accepted for the base year.

There is a small increase in output of Rs. 0.1 million only in 1968. No additional employment is, therefore, expected. Discussions with two establishments (Messrs Richard Pieris and Associated Motorways) indicated that there is an additional employment of 40 persons for every Rs. 2.5 million additional output. This norm has been used for 1969-72 since additional output is in the region of Rs. 2.5 million per year.

Other Rubber Products: The base year employment figure was derived from data given in the Yellow Book. According to the major establishments in this sector, output will be growing steadily during the next few years at over 20 per cent per annum, and the demand for labour at about 5 per cent per annum. Since the output rates are in agreement with those in the Sector Sheets, the employment rate was used in the projections for 1969-72.

SECTOR 24

	EMP 1963	O/E 1967	EMPLOYMENT 1968	1969	1970	1971	1972
Chemicals and Products.	3,430	-	8,885	9,053	9,300	9,641	9,881

The Chemicals and Chemical Products sector covers a wide variety of commodities ranging from more capital intensive and specialised products such as oxygen and glycerine to labour intensive products such as plastics and mosquito coils produced mostly by small establishments. A characteristic feature of the Chemical Products Sector is that the volume of production is very much dependent on the availability of raw materials, which fluctuates depending on an availability of foreign exchange; therefore, a big increase in production may not necessarily make a significant change in employment.

The following items have been aggregated in the table:

Basic Chemicals: Information available in the Yellow Book and in the Sector Sheets are comparable. Therefore the employment figures given in the Yellow Book have been accepted except in the case of glycerine for which information was not available. It was found that Lever Brothers and the Oils and Fats Corporation have been employing 15 and 27 persons, respectively, in the production of glycerine since 1967.

Combined figures of employment have been shown for two groups, Caustic Soda and Chlorine, and Oxygen and Acetylene, since it was found that the same personnel were employed for their production. The employment figures obtained from the Yellow Book need, however, to be rechecked since it is felt that administration and service personnel too have been included in these figures.

The employment figure for Carbon Dioxide was obtained from Ceylon Cold Stores and Pure Beverages Ltd.

No increase in employment has taken place in the Basic Chemicals Group between 1967 - 1969. These are

highly capital intensive products and it was verified with the producers that an increase of up to 40 to 50 per cent or more may be achieved in production, using the existing capacities and bringing no significant change in employment. There is a slight increase in employment after 1969.

Fertilizer: The Sector Sheets figures of production were accepted. The Yellow Book production and employment figures were found to be very low after verification with the producers.

Fertilizer mixing is done by three establishments, viz: Shaw Wallace & Hedges, Baur's, and Colombo Commercial Company, on a contract basis for the State Fertilizer Corporation. These three firms employ personnel for their mixing plants as follows:

Shaw Wallace & Hedges	-	100
Baur's	-	430
Colombo Commercial Co.,	-	360

There has been no increase in employment between 1967 and 1969.

Safety Matches and Fireworks: The output figure in the Yellow Book and the Sector Sheets were found to be comparable. Therefore, the employment figure given in the Yellow Book was used with the Sector Sheet output figures. The output: employment relationship was 0.093 for 1967. In view of the fact that increases in output for 1968 and 1969 were by existing capacities, a factor of 0.33 has been applied to this relationship for estimating additions to employment.

Soap: The Yellow Book and Sector Sheet output figures were comparable. Hence the employment figure of

the Yellow Book has been used. A factor of 0.33 has been applied, as in the case of safety matches, to the output: employment ratio to estimate future employment.

(Paints, Varnishers and Lacquer:
(Ink:
(Insecticides and Weedicides:

Pharmaceuticals: The output figures in the Yellow Book and Sector Sheets for 1967 were quite similar. Hence the employment figure given in the Yellow Book has been accepted, and the output; employment ratio for 1967 has been used for projection along with a factor of 0.33.

Cosmetics and Perfumery: The Yellow Book figures have been taken directly in the Sector Sheets without any adjustments for price changes. Sector Sheet output figures have been used here with the employment figure given in the Yellow Book for 1967. The output: employment ratio for 1967 has been used for projection along with a factor of 0.33.

Other Miscellaneous Chemicals: The Sector Sheets show an output of Rs 4.4 million in 1967 for other miscellaneous chemical products. The O/E ratio was 0.08 for the base year which has been used herewith the output estimates.

SECTOR 25

	EMP 1963	O/E 1967	EMPLOYMENT 1968	1969	1970	1971	1972
Vegetable Oils and Fats	-	0.019	2,600	2,625	2,651	2,679	2,707

Edible Oils & Fats:

This group comprises coconut oil, coconut poonac and margarine. The coverage in the Yellow Book is in respect of 'Refined Coconut Oil' and 'margarine' only. The Central Bank Report (1967) gives employment and value of production for vegetable oils and fats (Table 11(B) 1- Pg. 42) for 1964-67 in respect of 43 firms. According to the 1963 Census of Population, 3370 persons were engaged in the production of oils and fats. In the absence of other information, it was decided to use 1965 relationship (0.019) between value of production (Rs 190.4 m) and employment (3,770) as given in the Central Bank Report (1967) in respect of this group in order to obtain a first approximation of base year employment Obviously, this relationship does not reflect the entire pciture. The employment estimate appears to be over optimistic. There are 39 registered oil mills of different sizes in Ceylon, ranging from 250 tons capacity to 25,000 tons, and a uniform output/employment ratio cannot be applied to them. Further investigation is being made to obtain a better relationship on the basis of data collected from the Survey of Industrial Production. Both the Census and Central Bank estimates of employment include other coconut products as well.

SECTOR 26

	EMP 1963	O/E 1967	EMPLOYMENT 1968	1969	1970	1971	1972
Coir Fibre and Yarn	26,880	-	29,245	30,045	30,845	31,645	32,463

Coir Fibre & Yarn, Cordage, Rope and Twine:

These two groups were treated together for convenience of analysis. According to the 1963 Census, 23,493 persons were engaged in Coir Fibre and Yarn manufacture and 3,387 in Cordage, Rope and Twine making. No estimates are available regarding output in 1963. Neither the Yellow Book nor the Central Bank Reports give information regarding

coir fibre and yarn. The Sector Sheets do not include cordage and rope.

Information regarding output of coir fibre and yarn is available from the Sector Sheets for the period 1965-72. The output of coir fibre (both bristle and mattress) shows a slight upward trend from 1966. The export of coir fibre has been fluctuating while that of coir yarn has shown a steady decline during the period 1963-68. On the basis of these data, it was estimated that the production of coir fibre would have been of the order of 1.9 m. cwt. in 1963 and of coir yarn 20,000 cwt. The employment estimates of 1963 could be related to these output figures.

Employment in the combined group 'coir fibre and yarn' and 'cordage, rope and twine' was almost equally distributed in 1963 between self-employment and unpaid family workers on one hand, and employers and employees on the other. For estimating base year employment, it has been assumed that fluctuations in output will have only a marginal effect on the employment siguation because of this pattern. Further, two factors have been taken into account in estimating base year employment; (a) there was a 3.6 per cent increase in output in 1967 over the figure estimated for 1963, and this output is likely to have resulted in a corresponding increase in employment, and (b) there was a 5.6 per cent increase in domestic use of coir fibre and yarn between 1963 and 1967 and this would have resulted in an overall increase of 1 per cent in employment over 1963. On the assumption set out above, the net addition to employment is of the order of 1,240 and the total employment in the base year 1967 would be 28,120. For projecting employment for 1968-72, a similar method has been followed. The actual increase in the output of coir fibre and yarn over 1967 has been assumed to result in corresponding employment, and a 1 per cent increase has been added to obtain the employment implications of increased domestic consumption.

The assumptions used in estimating employment in the base year 1967 as well as 1968 and 1969 are necessarily weak because adequate data are not available for drawing more meaningful inferences. They, however, represent reasonable magnitudes for purposes of planning. The nature of employment in coir-based activities appears to be such that estimates given here may ignore helpers, children and part-time workers, who were excluded from the 1963 Census as they did not fulfil the technical criteria laid down for 'unpaid family workers'. To that extent, the figures included in the table should be under-estimates. This enference is reinforced by the fact that in 1953, there were over 57,000 workers in this activity.

SECTOR 27

	EMP 1963	O/E 1967	EMPLOYMENT 1968	1969	1970	1971	1972
Petroleum and Products	-	-	153	360	360	360	360

Petroleum and Products:

The output and employment figures are taken from the Yellow Book for 1967. The subsequent figures of employment have been obtained from the Petroleum Corporation. It has been reported by the Corporation that in all 360 persons are now employed in the Petroleum Refinery. During 1970-72, the Corporation hopes to reduce employment to about 250 by transferring skilled personnel to the proposed Fertiliser Factory. However, in the table, this factor has been ignored.

SECTOR 28

		O/E 1967	EMPLOYMENT 1963	1968	1969
Structural Clay Products		-	8,472	16,450	17,550
Code	Sub Sector				
3311	Clay Bricks	0.5	-	10,750	11,850
3312	Tiles and Pipes)	-	8,472	5,600	5,600
3319	Other Structural) Clay Products)	-	-	100	100

continued....

		EMPLOYMENT 1970	1971	1972
Structural Clay Products		19,350	20,700	22,100
Code	Sub Sector			
3311	Clay Bricks	13,650	15,000	16,400
3312	Tiles and Pipes)	5,600	5,600	5,600
3319	Other Structural) Clay Products)	100	100	100

Structural Clay Products:

This sector includes Bricks, Tiles and other structural clay products like glazed pipes etc.

Bricks:

It is estimated that there were over 2,000 brick kilns in Ceylon each with an average of five employees in 1967. The average annual output per worker is about Rs 2,000 and this figure has been used for making future estimates of employment.

Tiles and Pipes:

According to the report of the Tile Committee (1967), the total demand for tiles can be met from the existing capacity. The All-Ceylon Tile Manufacturers' Association has estimated that about 1,600 persons are engaged in tile and pipe making establishments and another 4,000 are making half-round roofing tiles on a small-scale. There is no likelihood of increase in these numbers in the near future. The employment estimates have been based on this information.

Other Structural Clay Products:

A small quantity of fire-bricks and salt-glazed products are included here, accounting for a total employment of about 100 persons. Enquiries from Ceylon Potteries Ltd., and the Ceramics Corporation show that there may be no increase in employment since output is growing very slowly within existing capacity.

SECTOR 29

	O/E 1967	EMPLOYMENT 1963	1968	1969
Glass, Ceramics & Pottery	-	-	17,729	17,820
Code Sub Sector				
3321) 3322)Glass Products 3323) 3329.1)	-	279	861	900
3324) 3324.2)Domestic 3324.3)Ceramics etc. 3324.4)	-	6,541	868	920
3324.5 Other Pottery	-	-	16,000	16,000

Continued...

	EMPLOYMENT 1970	1971	1972
Glass, Ceramics & Pottery	17,870	18,000	18,300
Code Sub Sector			
3321) 3322) Glass Products 3323) 3329.1)	900	900	1,200
3324) 3324.2) Domestic 3324.3) Ceramics etc. 3324.4)	970	1,100	1,100
3324.5 Other Pottery	16,000	16,000	16,000

Glass & Glass Products:

The 1963 Census shows a total employment of only 279 persons in this activity, while the Yellow Book gives a figure of 591 in 'glass bottles and containers', 119 in 'mirrors' and 63 in 'fibre-glass products'. The Yellow Book figures have been taken as the base year employment. For estimating future employment, it was ascertained from the establishments that there has been an increase of 39 workers in 1969 and there will be no further increase during the next three years as the production targets are based on utilisation of full capacity by 1972.

Now Plants are expected to be set up in 1972 for the manufacture of glass plate and sheet and mirrors and preliminary estimates shows that these have an employment potential of 300.

Domestic Ceramics:

The production of domestic ceramics is confined to the Ceramics Corporation. The base-year figure of employment

has been taken from the Yellow Book. The increase during 1968-72 is based on the information obtained from the Ceramics Corporation.

Other Pottery:

The Census shows that there were 6,541 persons engaged in ceramics and pottery making activities in 1963. This means that about 6,000 persons were engaged in 'Other Pottery' in that year. Pottery is almost exclusively a hereditary occupation and the demand for earthenware should be declining with the expansion of aluminium-ware. Even so the Census estimates appear to be low.

On the basis of information available from the Census of 1946 and 1953 and various surveys of the small-scale sector, it can be estimated that the number of pottery workers would be of the order of 14 - 15,000 in 1967. In addition, in view of the hereditary nature of the activity, there might be about 3-4,000 helpers who would not come within the definition of unpaid family workers. On this basis, the number of persons engaged in pottery making may be about 16,000 excluding helpers. This figure has been used for the base year. No increase in employment has been estimated for 1968-72 since the additional output is small and competition from other products is increasing. This was also the view of the Sector Committee.

SECTOR 30

		O/E	EMPLOYMENT		
		1967	1963	1968	1969
Cement and Products		-	1,131	2,226	2,439
Code	Sub Sector				
3331	Cement	-	-	1,200	1,307
3332	Asbestos Cement	0.043	1,131	689	775
3339	Other Cement Products	0.12	-	337	357

		EMPLOYMENT		
		1970	1971	1972
Cement and Products		3,317	3,471	3,558
Code	Sub Sector			
3331	Cement	2,147	2,257	2,312
3332	Asbestos Cement	789	805	805
3339	Other Cement Products	381	409	441

Cement:

The Yellow Book shows that 1,050 persons were directly engaged in the manufacture of cement in 1967 in the Cement Corporation. The Central Bank Report for 1967 shows that in all 1,430 persons were employed in the Cement Corporation. The employment figures given in the Central Bank Report of 1968 are still higher as they include workers employed in construction at the new plant at Puttalam.

The Corporation engages in trading activity also but the number of persons engaged in trading is very small. Thus the entire employment in the Corporation should be assigned to cement manufacture excluding construction employment at Puttalam and some casual construction workers at other sites.

The estimates in the table have been prepared on this basis. Employment estimates for the new additions during 1969-72 have been obtained from the Corporation.

Asbestos Cement, Other Cement Products:

The employment figures given in the Yellow Book for these items were accepted for the base year 1967. The output: employment ratio for 1967 was used with a factor of 0.33 for estimating employed for future years.

SECTOR 31

	EMP 1963	O/E 1967	EMPLOYMENT 1968	1969	1970	1971	1972
Basic Metal and Rolling Mill	1,281	-	2,512	3,235	3,372	3,507	3,817

Foundry Products and Other Metal Casting:

Complete data on employment in this sector are not available. The only reference to Foundry Products in the Yellow Book is under "Foundry Products N.E.S.". This information is available for the period 1965 - 67, but appears to be fairly representative of the position only in 1966. In the absence of any other information the relationship between output (Rs 2.8 Mn) and the number employed (527) in 1966 - 0.183 workers per Rs 1,000 output - was applied to the Sector Sheet output figure to estimate employment for 1967.

In the case of an increase in output through existing capacity a factor of 0.33 was applied to the output employment ratio to estimate additional employment. In the case of increase in output through new capacity the ratio was used direct.

Basic Metal Non-ferrous Metal Products:

The output figure in the Yellow Book and Sector Sheets for 1967 are comparable. Hence the employment figure given in the Yellow Book has been accepted.

Ferrous Wire Drawing and Rolled Steel:

Information on output and employment was obtained from the Ceylon Steel Corporation. Employment in the Research and Development Division of the Steel Corporation

was divided equally between the two products while employment in Administration and services was divided proportionate to output; i.e. in the ratio of 8.5: 1.5.

This year a new private sector Rolling Mill has come into production without government approval. Figures of Output and Employment in this mill, presumed to be small, are, however, not available.

SECTOR 32

		O/E 1967	EMPLOYMENT 1963	1968	1969
Light Engineering		-	-	31,261	32,878
Code	Sub Sector				
351	Manufacture of Metal Products	0.093	N.A.	6,560	6,961
3803	Motor Vehicle Repairs	-	17,000	22,660	23,660
3804	Pedal Cycle and Components	-	N.A. (231)	720	820
3993	Clocks and Watches	-	814	927	927
3991	Professional and Scientific Instruments	-	-	-	50
3992	Photographic and Optical Goods.	0.264	80	290	316
3994	Toys other than Rubber and Plastic	0.104	N.A.	104	144

continued...

		EMPLOYMENT		
		1970	1971	1972
Light Engineering		34,571	36,593	38,767
Code	Sub Sector			
351	Manufacture of Metal Products	7,429	7,980	8,603
3803	Motor Vehicle Repairs	24,660	25,860	27,060
3804	Pedal Cycle and Components	970	1,120	1,310
3993	Clocks and Watches	927	927	927
3991	Professional and Scientific Instruments	50	65	80
3992	Photographic and Optical Goods	351	377	403
3994	Toys other than Rubber and Plastic	184	264	384

Manufacture of Metal Products:

The Sector Sheet output figure for 1967 has been derived from the Yellow Book.

The Yellow Book value of the output of the metal products sector also includes a figure of Rs. 1.6 Mn. for Foundry Products N.E.S. The output figure for the metal products sector for 1967 in our estimate excludes this item in order to avoid double counting.

Employment for 1967 given in the Yellow Book, excluding employment in Foundry Products N.E.S., has been accepted.

The 1967 Employment and output figures have been made up as follows:

	Value of Output. (Rs. Mn).	Employment
Yellow Book:		
(a) Manufacture of Metal Products ..	66.3	6,299
(b) Iron and Steel basic Industries N.E.S. ..	2.2	332
	68.5	6,631
Sector Sheet:		
Minus Foundry Products N.E.S..	1.6	391
	66.9	6,240

Estimates of Employment for 1968 - 1972 were based on the output - Employment relationship for 1967 and annual increase in the value of output of 6 per cent as in the Sector Sheets.

Vehicle Repairs: The Census of 1963 shows that 17,000 persons were engaged in the repair of motor vehicles. No subsequent information is available. It has been assumed that employment in this group increased at the rate of 5 per cent per annum up to 1967. The base-year employment figure has been derived in this manner. The Sector Sheets have estimated the additional employment for 1968-72 and these figures have been used for these years.

Cycles and Components: The 1963 Census reported that 2,631 persons were engaged in the manufacture of cycles and parts as well as in their repair. According to the Yellow Book, 546 persons were engaged in seven reporting units accounting for an output of Rs 13.9 mn. These proportions were applied to Sector Sheet output figures for 1967 to obtain base year employment. In addition, it was estimated that the number of persons engaged in repairs was about four times those in manufacturing activity in the base year.

The Sector Sheets have estimated the additional employment in this group at a productivity of Rs 26,000 per annum. These estimates have been used in the table.

Watches and Clocks: The Census of 1963 shows that, in all 814 persons were engaged the manufacture and repair of watches and clocks in 1963. The Yellow Book gives the number of persons engaged in manufacturing only. Enquiries from three leading units show that the number of persons employed in repairs only has remained more or less static over the last 3-4 years around 800. This figure has, therefore, been added to the Yellow Book figures and no increase is estimated for future years.

Scientific Instruments: There is no output in 1967 and 1968. For 1969, the Sector Sheets have estimated the output at Rs 0.2 million with employment at 50. Employment at full capacity is estimated to be 80.

Optical Goods: The Census of 1963 shows that employment in photographic and optical goods manufacture was 80. The Sector Sheet figure of output is taken direct from the Yellow Book; hence the employment figure of the Yellow Book is taken for base-year 1967. There has been an increase in the number of units as well as output. The output: employment ratio of 1967 has been used with a factor of 0.33 for estimating employment in future years.

Toys: This group contains toys other than those made from rubber. The base-year figure has been taken from the Yellow Book. The Sector Sheets show additional employment in 1969 when new capacity becomes operative. There is no increase of employment in 1968.

Bodies for Motor Vehicles: There are five major establishments engaged in making vehicle bodies. The reported employment in the Yellow Book in 237 and in 1963

SECTOR 33

		O/E 1967	EMPLOYMENT 1963	1968	1969
Transport Equipment		-	-	3,713	5,091
Code	Sub Sector				
3802	Bodies for Vehicles	0.083	293	430	1,625
3805	Motor Vehicle manufacture	-	-	-	-
3806	Motor vehicle spare	-	-	724	854
3807	Motor vehicle assembly	-	-	-	-
3809	Other Transport equipment	0.800	1,741	2,156	2,209
3809.1	Accumulators	0.072	-	403	403

continued....

		EMPLOYMENT 1970	1971	1972
Transport Equipment		6,183	6,598	7,921
Code	Sub Sector			
3802	Bodies for Vehicles	1,791	1,974	2,182
3805	Motor vehicle manufacture	-	-	800
3806	Motor vehicle spares	924	1,139	1,409
3807	Motor vehicle assembly	800	800	800
3809	Other Transport equipment	2,236	2,236	2,267
3809.1	Accumulators	432	449	467

Census, 293. There are also small workshops which make body-frames and undertake alterations. Enquiries from some establishments show that the employment in 1967 was about 400. This figure has been accepted for the base year, and the output: employment ratio has been used, with a factor of 0.33, for estimating future employment. However, the estimates for 1968 and 1969 may be conservative since there has been a perceptible increase of activity in this area.

Motor Vehicle Manufacture: It is proposed to set up a manufacturing plant in 1972. The estimate of employment was prepared in consultation with the Ministry of Industries.

Motor Vehicles Spare Parts: The Yellow Book figures of output have been used in the Sector Sheets.

Hence the employment figure has also been accepted. The Sector Sheets have estimated additional employment on the basis of productivity of Rs.7,000 per year.

Motor Vehicle Assembly: According to the Sector Sheets, production would start in 1970. However, it has been reported that the Assembly plant has started production from May 1969. To conform to the Sector Sheets, employment figures ascertained from the establishment have been shown in 1970.

Other Transport Equipment, N.E.S.: The base year employment figure has been derived by using a 5 per cent per annum growth rate over the 1963 Census estimates. Subsequent figures have been prepared by using the output: employment ratio with a factor of 0.33.

Accumulators: The Yellow Book relationships of output and employment for 1967 have been used for the projections.

SECTOR 34

	EMP 1963	O/E 1967	EMPLOYMENT 1968	1969	1970	1971	1972
Machinery and Equipment	6,705	-	3,467	3,901	4,930	5,830	6,735

The following items have been aggregated in the above table:

Sewing Machines: The Yellow Book shows the value of output of this sector at Rs 5.8 million. The Sector Committee has revised this figure to include the production of accessories for sewing machines. The Yellow Book employment was 305 persons in this sector for 1967. On consultation with the producers it was revealed that this employment figure includes also those who are engaged in the production of accessories. Hence the Sector Committee output figure of Rs. 11.5 million has been accepted with the Yellow Book employment figure for 1967. Future employment has been estimated on the basis of the employment: output relationship for 1967 and increase in output over the year estimated by the Sector Committee.

Refrigerators and Deep Freezers: The Sector Sheet figure of output for 1967 is Rs. 5 million. This is comparable with the Yellow Book output figure of Rs. 4.9 million. Hence the Yellow Book employment of 258 for 1967 has been accepted.

Agricultural Machinery: The Sector Committee estimate for this sector has been taken from the Yellow Book, which shows Rs. 1.6 million value of output of agricultural trailers in 1967. The employment figure given in the Yellow Book is 103 persons in 1967. These figures were accepted. Future employment has been estimated on the basis of the output: employment relationship for 1967 and the Sector Committee estimates of additional output for the corresponding years.

Machine Tools and Carpentry Machinery: The Sector Committee has not made any estimates of output in this sector so far. No information is available in the Yellow Book nor in any other published document. At present all machine tools are imported. The Ceylon Steel Corporation is scheduled to commence assembly of machine tools in July 1969. The estimated value of output for 1969 is Rs.1 million. 30 persons will be recruited to work in the assembly plant. According to available information there is only one establishment that is producing carpentry machinery and spare parts - Dias Mechanical Engineering Works, Wattala. This establishment went into production in 1968 and the estimated value of output for that year is Rs. 0.18 million. The value of output for 1969 (2nd year of operation) has been estimated at 20 per cent growth rate per annum.

Paddy Processing Machinery: The Sector Committee output figure for this sector has been taken from the Yellow Book which shows Rs. 0.59 million against rice hullers, coffee grinders etc., for 1967. However, in the absence of any other information the Sector Committee figures of output have been accepted with the Yellow Book employment figure.

Tea Machinery:)
Rubber Machinery:)
Wires and Cables:)
Dry Cell Batteries:)

The Sector Committee revised figures of output have been obtained from the Yellow Book and are comparable. Hence the Yellow Book employment figures for 1967 were used with the Sector Committee output figures.

Textile Machinery: All textile machinery is imported except handlooms and certain spare parts which are made locally. Handlooms are made by a large number

of carpenters scattered in the country. No information is available regarding the value of production of handlooms and the number of carpenters engaged in production. However, since carpenters engaged in the production of handlooms have been included in the estimates of employment in the wood-based industries, they have been excluded from here.

Dias Mechanical Workshops have reported production of Textile machinery spare parts valued at Rs.0.16 million in 1968. The employment was 60 persons. These figures have been used in the table.

Other Electrical Goods: The Sector Committee and Yellow Book figures are comparable. Future employment has been estimated on the basis of the output: employment relationship for 1967 and the increases in output estimated by the Sector Committee.

Other Machinery and Equipment for Domestic Use: The Sector Committee and Yellow Book figures were the same for 1967. Future employment has been estimated on the basis of additional output for 1968 and 1969 established by the Sector Committee.

Pumps for liquid and Gases: The Yellow Book and Sector Committee estimates are comparable. Hence the Yellow Book employment for 1967 has been accepted, and the O/E relationship used.

We have accepted the Yellow Book figures of output and employment given against the above-mentioned items. Future output has been estimated on the basis of an assumed rate of growth.

FOOTNOTES

1/ The projections were used in conjunction with data on labour supply to prepare a Manpower Budget which indicated the magnitude of the task of employment creation and provided a quantitative framework for the consideration of employment targets and policies.

2/ Census of Ceylon 1946, Report Vol.I Part II, p.210

3/ Data on the labour force have been reviewed in "Labour Force Projections for Ceylon, 1968-1998" by R.K.Srivastava, Gavin W. Jones and S.Selvaratnam, Ministry of Planning & Economic Affairs, Colombo, June 1970.

4/ Gavin W. Jones and S.Selvaratnam: Urbanisation in Ceylon, 1946-63, Ministry of Planning & Economic Affairs, Colombo, May, 1970.

5/ There has thus hardly been any "Labour reallocation" in Ceylon according to the Fei-Ranis model of Capital Accumulation and Economic Development, J.C.H. Fei and Gustav Ranis, The American Economic Review, Vol.LIII, No.3, June 1963.

6/ S.Selvaratnam & R.K. Srivastava: Employment Trends in Ceylon - A Preliminary Analysis, Ministry of Planning & Economic Affairs, Colombo, August 1968.

7/ Sectoral Output and Employment projections have been prepared for Ceylon by an ECAFE Group of Experts on Programming Techniques. This Group used historical data on output for the period 1959-68 (given in the Annual Reports of the Central Bank of Ceylon) to project future output and estimated employment without any correction for productivity. The resultant employment projections are obviously too high to be acceptable.

See ECAFE: Seventh Group of Experts on Programming Techniques; Sectoral Output and Employment Projections for Ceylon, 1970-80, Paper No. EGPT/WP/1, 14 October, 1969, Bangkok.

8/ Statistical Base for Sector Programming 1965-72, Ministry of Planning & Economic Affairs, UNDP-SF Planning Project, Colombo, September 1969.

9/ Report of a Survey of Employment and Unemployment in Member Estates of the Estate Employers' Federation, 1967. (Restricted).

10/ The estimates of value added per worker given here and in subsequent paragraphs are very approximate because the sector classification is not identical for 1963 and 1968. Price adjustment are also difficult to make. The consequential productivity trends are thus merely indicative of the likely situation.

11/ 'Employment Trends in Ceylon', A Preliminary Analysis, op,cit.

12/ 'Employment Trends in Ceylon' Ibid.

13/ It is estimated the Government recurrent expenditure would grow at 6 per cent per annum (at constant prices) during the corresponding period.

14/ ECAFE: Sectoral Output and Employment Projections for Ceylon, 1970-80 op. cit. Section IV

15/ R.K.Srivastava, S.Selvaratnam and L.S. Fernando: Employment in the Industrial Sector, 1967-69, Ministry of Planning & Economic Affairs, UNDP-SF Planning Project, Colombo, May 1969.

16/ These sector committees participated in the dis-

cussion and preparation of sector output projections summarised in "Statistical Base for Sector Programming", op.cit.

ECONOMIC GROWTH
and
LABOR PARTICIPATION IN IRAN

Ahmed Kooros

I. Labor Participation and Economics Expansion.
II. Urban and Rural Male Labor Force.
III. Urban Rural Female Labor Force.
IV. Conclusions.

The prevailing independent variables in the homegeneous and linear function of economic growth, ever since classical economists conceived of it, has been capital, K, labor, N, and land including all natural resources, L. Capital is accumulated by channelling part of the current output, Y, from present consumption to productive uses. The rate of growth of labor is related to the rate of growth of population. Land and natural resources are distinguished from other factors of production by virtue of the indestructible forces inherent in them. Factors of production are usually regarded as continuously substitutable and all changes in relative prices and in the composition of output, in general, are assumed away. Specifically, $Y = AK^{\alpha} N^{\beta} L^{\gamma} e^{\int_{\alpha}^{t} g(t)dt}$ when α, β & γ are constant elasticities of output with respect to capital, labor and land. As a shift factor, the term A is a constant so that a change in A causes a shift in the curve parallel to itself; the term $e^{\int_{\alpha}^{t} g(t)dt}$ $g(t)\,dt$ stands for the techanical progress factor. In that production function the factor entrepreneurship is omitted. This is a serious but not a fatal omission. Today, the stumbling block in the way of development is entrepreneurship. It can, however, be imported. In a way, one can argue that the techanical progress term in the above production function is inclusive of the entrepreneurial ability. Another serious and fatal omission is the fact that different stages of economic expansion cannot be separated from one another by a reference to the above production function. Rostow, the author of the famous book, The Stage of Economic Development, has divided the process economic development all societies into five stages:

(1) the traditional societies, (2) the preconditions for take-off, (3) the take-off, (4) the drive to maturity and (5) the age of high mass consumption.

Unless one imposes conditions on Y, K, N and L, the above classical-neoclassical production function is, prima facie, inadequate in describing the stages of economic development wherein an economy operates. On the other hand, the advantageous aspect of the stage theory of economic growth is that it forces one to focus one's attention on the requirements needed to move from one stage of economic achievement to another and yet higher ones. For instance, it can be argued that a high level of per capita income is associated with a given educational structure needed to support the avalanche of capital inputs. An educational system and its supply of skilled resources must be attuned to the needs of different stages of economic well-being.

I. LABOR PARTICIPATION AND ECONOMIC EXPANSION

It is only logical to expect that countries with similar economic and cultural backgrounds should have the same pattern of labor participation. Of course, institutional constraints and different habits of thought impede progress and distort labor paruicipation. Empirical evidence demonstrates clearly that labor force participation for different age groups is a function of the degree of economic development, institutional barriers and mental preparedness. Here, we have discerned the pattern of labor participation by examining a number of countries and comparing the results with those in Iran.

Before embarking on a comparison of the figures, the meaning of economic development must be brought into focus. It has, indeed, to be borne in mind that one cannot quite clearly demarcate between a fully developed country and a developing one. Some have contended that a $1,000 per capita GNP is a fair line of demarcation between a hypotensive economy and a mature one. It is not quite clear as to why this level of per capita income should be a relevant measure of development. It appears that any indicator which one takes in order to measure expansion is, in the final analysis, subject to debate. Included in this whirlpool

is the International Labor Office's suggestion that a country with more than 45 per cent of its labor force in agriculture is to be considered developing. 1/ According to this index, Iran is now a developing country. Table I indicates that in 1345, about 46 per cent of Iran's active labor force was in agriculture. But according to the census taken in 1335, this ratio was around 56 per cent. It is not too inaccurate to suggest, that in the very foreseeable future Iran will join the league of the developed nations if this index is an acceptable yardstick.

TABLE I

SECTORAL EMPLOYMENT RATIOS

Major Sectors	1335*		1345**	
	Percent	Number	Percent	Number
Agriculture	56.4	3,330	46.2	3,167
Industry	20.1	1,190	27.1	1,857
Services	23.5	1,390	26.7	1,833
Total.	100 .0	5,910	100.0	6,858

Sources: * The 1335 Census
** The 1345 "

The data on Iran's labor force participation are taken from the 1345 census and are presented for six age groups: 15 - 19, 20 - 24, 25 - 44, 45 - 54, 55 - 64, and finally 65 years and over. Then a la the Ettore Denti 2/ procedure an economic activity rate is computed for each age-specific group and each sex.

1/ See James N.Ypsilanties, World and Regional Estimates and Projections of Labor Force, I.L.O.,Figure I and Table E pp., 14-15

2/ "Sex -Age patterns of labor force participation by Urban and Rural populations," International Labour Review, Vol.98, No.6, December 1968, pp.525 - 550.

The activity rate is defined as the percentage of economically active persons among the population of a given age group. For example, the age-specific activity rate (R) for the 15 - 19 group is calculated by the formula: $R(15 - 19) = \frac{LF\ (15 - 19)}{P\ (15 - 19)}\ 100$

where LF stands for the number of economically active persons in the specific age group and P is the total number of persons in that age group. 3/. Then these rates for different specific age groups for males, females and males females are compared with the comparable results Denti obtained by investigating 40 developed and developing countries. His definition of development, as in this paper, is the percentage of labor force in agriculture.

II. URBAN AND RURAL MALE LABOR FORCE.

The male labour force is the backbone of the labor force within a given country and its characteristics can more readily be relied upon as a basis for comparison. The female labor force's behavior reflects more or less emotionalism and deep institutional idiosyncrasies.

Table II compares Iran's average urban male age specific activity rates with those of some 13 developed countries and 27 developing countries. A quick glance at the figures in this Table indicates that Iran's male activity rates are closer, in general, to the rates for the developed countries than to those for the developing ones.

Specifically, it is interesting to note that the 15 - 19 and 25 - 44 age group rates in Iran are similar to the developed countries rates. The 25 - 44 age group is the pivotal point of the labor force in a given country. If we look back at Table I, it would not be too hard to believe that the labor force in Iran is approaching the stage of maturity which could enable the economy to march ahead towards real development.

3/ Ibid., p. 527

TABLE II

AVERAGE URBAN MALE AGE-SPECIFIC

Activity Rates by Level of Economic Development

Age Group (Years)	Average Activity Rate		
	IRAN+	13 Developed Countries	27 Developed Countries#
15 - 19	48.6	43.3	54.3
20 - 24	85.9	82.3	84.5
25 - 44	96.3	96.0	95.6
45 - 54	91.6	94.1	94.1
55 - 64	74.3	82.9	82.4
65 and over	45.5	36.3	51.6

Sources: + 1345 Census of Iran
Denti , op.cit.,p. 528

Table III compares the same rates for Iran with the rates for some regions. In here, there is no unique pattern. In general, the rates in Iran are closer to rates in the Western European countries than to any other rates. There is no clear-cut and discernible pattern when one compares Iran's experience in labor participation with other regions.

TABLE III

AVERAGE URBAN MALE AGE-SPECIFIC

Activity Rates by Region

Region	15-19	20-24	25-44	45-54	55-64	65 and over
Iran	48.6	85.9	96.3	91.6	74.3	45.5
Africa	44.1	81.2	92.1	89.5	80.7	50.0
North America	41.3	85.4	95.5	93.5	83.6	28.1
Latin America	56.3	87.5	95.8	94.8	87.6	60.6
Asia	48.7	81.1	95.8	93.8	77.3	43.6
Eastern Europe	52.9	83.1	96.7	94.6	79.2	40.4
The Rest of Europe	56.1	81.6	96.6	95.1	83.1	34.2

Source: For Iran,1345 census and for other regions, Denti op.cit. ,p. 530

Table IV, gives the average rural male age-specific activity rates for Iran and 13 developed countries and 27 developing countries.

It is quite obvious that for the first categories of age groups, Iran's rural male performance is similar to that in the less developed countries, but for people over 45 our rural male labor force is not different from that of the developed countries. Apparently, the declining activity rates for working people over 55 in Iran, like those in the developed countries and unlike those of the less developed countries, are due to changes in the social structure of the rural society. There is no doubt that the land reform in Iran has done a great deal in giving the rural people a developing mentality which Iran needs so much.

TABLE IV

AVERAGE RURAL MALE AGE-SPECIFIC

Activity Rates by Level of Economic Development

Age Group (Years)	Average Activity Rates		
	+ IRAN	13 Developed Countries #	27 Developing Countries #
15 - 19	84.7	60.3	79.1
20 - 24	96.-	90.1	93.6
25 - 44	98.2	96.4	97.6
45 - 54	95.3	95.3	96.9
55 - 64	81.7	87.4	91.5
65 and over	47.5	49.2	68.5

Sources: + 2345 Census of Iran
Denti, op.cit.,p. 532

Apparently, the Land Reform has been more influential on the older people in the rural areas than the younger ones.

It is really paradoxical that younger people in rural areas are less responsive to social changes than the older ones. A sociologist can perhaps give an explanation.

According to Table V, the rural male working people in Iran are more similar to those in Eastern Europe and Latin America than to the Asians and African rural male working people.

TABLE V

AVERAGE RURAL MALE AGE-SPECIFIC

Activity Rates by Region

Region	15-19	20-24	25-44	45-54	55-64	65 and over
Iran	84.7	96.0	98.2	95.3	81.7	47.5
Asia	70.9	92.0	97.3	96.2	87.3	56.7
Africa	60.8	85.4	95.3	95.3	90.5	68.8
Eastern Europe	76.8	94.2	98.6	98.1	92.5	71.4
The Rest of Europe	74.7	91.1	97.8	96.6	89.6	49.5
North America	41.7	88.6	92.5	90.5	80.0	30.0
Latin America	80.2	95.3	97.4	96.9	93.5	74.9

Source: Figures for Iran are from Table III and the data for other regions are from Denti , op.cit.,p. 532.

Table VI gives the differences between male age-specific activity rates in the urban and rural areas of Iran. In general, the activity rates are higher in the rural areas than in the urban areas. Secondly, the male workers from 15 to 24 work more in the agrarian setting than in a metropolitan environment. I surmise if one uses the number of hours put in rather than the number of people in a given geographical area, the picture would be different. There are times when for six out of 12 months in a year a rural male worker is out of a job. It is hard to believe that actual activity rates are higher in agriculture than in the cities.

TABLE VI

URBAN-RURAL DIFFERENCES IN MALE AGE-SPECIFIC

Activity Rates in Iran

Age Group (Years)	Male	
	Urban	Rural
15-19	48.6	84.7
20-24	88.9	96.0
25-44	96.3	98.2
45-54	91.6	95.3
55.64	74.3	81.7
65 and over	45.5	47.5

Source: 1345 Census.

III. URBAN AND RURAL FEMALE LABOR FORCE.

The female labor force behaves, generally, according to institutional configurations and mores. It tends to be less forward looking than its opposite sex in a demographic setting. There are those like Madam Simone de Beauvoire, the author of the Second Sex, who feel that history has placed women in the position of the second sex. If, therefore, there is a society which anachronistically advocates patriarchism, one should expect that women, within that framework, would not behave dynamically. Iran had been a patriarchal society for a long time. It is still in the minds of men in our society to have the upper hand. It has been said that the women emancipation movement in Iran has shattered the bounds of the second citizenship. The road is long and arduous for a complete equality of women with men in this society. Unless we accept the very concept of equality and behave accordingly, we will never realize the stage of a mature economy. Real development is not possible in the presence of institutional frictions and barriers.

Table VII gives the urban female activity rates in Iran and in 40 developed and developing countries. The activity rates for different age groups is considerably lower in Iran compared with other countries. Obviously,

one reason is that we do not rely on our female labor force as an active element in the function of economic growth. We still think that the place of a woman is in the kitchen. One cannot expect anything more from our women in the labor force than the rates in Table VII.

TABLE VII

URBAN FEMALE ACTIVITY RATES IN IRAN AND IN 40 SELECTED COUNTRIES

Age Group (years)	Iran rates	40 countries rates
15-19	9.8	31.2
20-24	12.1	40.6
25-44	10.4	33.2
45-54	11.0	31.5
55.64	8.9	23.2
65 and over	5.7	9.9

Source: For Iran 1345 census and for 40 countries Denti, op.cit.,p.537

Table VIII compares the activity rates for the urban women in Iran to those of other countries. It is not surprising, and not coincidental, that the urban female activity rates for Japan, the U.S.A. and the Western European countries are quite high for the 15-19, 20-24 and 45-54 age groups. These comprise the developed nations of our contemporaneous era. Where these rates are low for countries with low urban female activity rates, it is to be argued that economic prosperity is correlative with women participating in the task of economic development. However, let no cause and effect chain be established between the two entities.

Table IX compares Iran's rural female activity rates with those of 40 developed and developing countries; and Table X, gives urban-rural differences in female age-specific activity rates in Iran.

TABLE VIII

URBAN FEMALE ACTIVITY RATES FOR IRAN
AND SOME REGIONS

Regions and Countries	15-19	20-24	25-44	45-54	55-64	65 and over
Iran	9.8	12.1	10.4	11.0	8.9	5.7
Western Europe	48.8	61.6	39.4	42.2	34.2	8.4
Japan	50.3	66.4	44.1	45.3	34.2	15.2
U.S.A.	30.8	48.3	41.6	50.3	33.3	11.3
Latin American countries	27.9	34.9	30.5	25.2	17.7	9.4
India & Indonesia	17.4	25.0	32.1	30.6	22.3	10.0

Denti , op.cit.,p. 539

TABLE IX

RURAL FEMALE ACTIVITY RATES IN IRAN
AND IN 40 SELECTED COUNTRIES

Age Group (Years)	Iran (Rates)	40 Countries (Rates)
15-19	19.8	33.9
20-24	15.6	36.3
25-44	13.7	33.6
45-54	11.7	34.4
55-64	7.5	29.0
65 and over	3.9	16.5

Denti, op.cit.,p.541

TABLE X

URBAN-RURAL DIFFERENCES IN FEMALE AGE-SPECIFIC ACTIVITY RATES IN IRAN

Age Group (Years)	Female	
	Urban	Rural
15-19	9.8	19.8
20-24	12.1	15.6
25-44	10.4	13.7
45-54	11.0	11.7
55-64	8.9	7.5
65 and over	5.7	3.9

Even in rural areas, there is a vivid difference between Iran's women participation and other developed and developing countries, though there should not be such a difference prima facie. The difference between urban-rural female rates is due to differences in institutions. A woman of 25 on the farm has been imbued with the idea of working for subsistence.

IV CONCLUSIONS.

The very inadequacy of the neo-classical production function is in the fact that the structure of factors of production is taken as given. It is not too appealing to leave the composition of a factor unexplained. In fact, shifts in the production function can occur only when the structure of a given input changes. The shift factor in the neo-classical production function is the constant of integration independent of the very essence of factors, and it is usually assumed to be the technological factor. Kaldor vis-a-vis Solow, has for many years, declared that technology is a built in and inseparable quality of a factor. If this is the case, then the partial derivatives of the production function in terms of inputs cannot be integrated. Ergo, there will be no constant which is to be called the shift parameter. Whence, a change in the very structure of a factor can shift the curve to the right or left in a plan.

I have argued that a change in the pattern of labor participation can modify the economic viability of a factor. And a change in the pattern of labor participation can , a la Rostow, position an economy in a stage of economic being different from the previous one. Of course, one may argue that a given level of economic activity generates, by necessity,its own compatible pattern of labor behavior. Sociologists, and political economists may not entirely agree with this. They define economic status in terms of an economic intelligence, the latter constitutes the very foundation of economic growth. According to our findings on labor participation in Iran, it is possible to ascertain certain patterns in economic activity rates according to the geographical, social and cultural characteristics and the level of economic development of the country. It is noticed that in Iran the male labor force is less influenced than the female labor force by national characteristics. It is also noticed that the pattern of labor force participation fluctuates less in the rural areas than in the urban areas. The oscillatory behavior of female participation is due to institutional expectations. It was also observed that the land reform had a better reception in the rural areas among older people than the younger ones. The Department of Labor in Iran has a formidable task before it insofar as changes in labor force participation are needed for the promotion of our economy.

A REVIEW OF PROJECTED MANPOWER, LABOUR FORCE AND EMPLOYMENT FOR PAKISTAN

Sultan S. Hashmi*
and
Syed Mushtaq Hussain

I. Introduction
II. Problems of Basic Data and Definitions
III. Population Growth, Sex-Age Composition and Manpower
IV. Demographic Review of Projections of Labour Force and Employment
V. Economic Review of Labour Force Projections
VI. Statistical Appendix
VII. References

I. INTRODUCTION

There are three main resources basic to the development of a nation, natural, capital, and human. One of the most serious problems of Pakistan, like many other developing countries, is that concerning human resources. This problem has two aspects: quantitative and qualitative. Quantitatively, Pakistan can be called a labour-surplus country; this is evidenced by the extent of underemployment, unemployment and the low productivity of labour. In terms of quality the country has surpluses in some categories and shortages in others. Due to lack of data and projections of sufficient reliability and detail, both the quantitative and qualitative aspects of human resources or manpower,** and hence the surpluses and shortages

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*At the time he had agreed to prepare this paper he was Research Director at the Pakistan Institute of Development Economics, Karachi, and the views expressed in this paper do not represent those of ECAFE or the United Nations.

**In this paper the terms human resources and manpower, both signifying population of working age, are used interchangeably. Labour force consists of persons who are working or seeking work, and unpaid family workers.

in labour force, are not properly identified and understood. In other words, the scientific base necessary for decision making, guiding policy and planning for the future course of action in manpower and employment, is lacking. Effecting changes in the quantity and quality of the labour force is a gradual and lengthy process. It is obvious that projections based on reliable data and realistic assumptions will play an important role in planning for development in this area. The main object of this paper is to review the problem in the context of the growth of population, and to review the work which has already been done on projections of manpower, labour force and employment in the country so as to throw some light on the problems of manpower planning and of underemployment and unemployment.

II. PROBLEMS OF BASIC DATA AND DEFINITIONS

Population projections by sex and age are basic for making projections of manpower and the labour force. For Pakistan, after the 1961 Census, so far one and half dozen population projections have been undertaken by various agencies and analysts. Similarly, a number of projections of manpower and the labour force have been made.

There are several problems of data and measurement in making projections of population, manpower, labour force and employment.

The first problem is the coverage of population in the 1961 Census which provided the base for various types of projections. The estimates of population size, made for the base year 1960 for various projections which have so far been undertaken, vary between 92 and 101 million. The difference is due to the difference in the amount of adjustment made by various analysts for assumed under-enumeration in the population figure reported in the 1961 Census. This difference and the difference in assumptions for fertility and mortality made by various analysts provide highly variant population estimates for the decade, which according to the high variants range between 123 to 137 million for 1970 and between 167 to 200 million for 1980. According to the medium variants the estimates vary between 123 to 137 million for 1970 and 163 to 191 million for 1980; and the low variants provide the range of variation between 122 to 136 million for 1970 and 158 to 184 million for 1980.

The second major problem, which is related to the first problem as it provides some clues for under-enumeration, is the age reporting. In Pakistan, like many other developing countries, age reporting is highly erroneous. Several reviews of the age data reported in the 1961 Census have been made (3 and 7). Although some attempts have been made to make adjustments in the age data, as the errors are non-random the risk that the adjustments might have compounded the errors cannot be ruled out. Analysis of age data of a panel of females obtained in the Population Growth Estimation (PGE) experiment (1962-1965) shows a great deal of variation in age reporting from one yearly enumeration to another (8). The errors were widespread and beyond the scope of the available smoothing techniques. The PGE experiment was based on a national survey and was well organised. The data produced by this experiment are supposed to be of better quality than the data produced by censuses or other demographic surveys. As age data provide the base for the determination of manpower and labour force participation rates, the problem of errors in age reporting must be fully recognised. If the pattern of errors in the age reporting of the population in the labour force was different from the pattern of age reporting of the general population in the 1961 Census (which is highly likely) the errors in the rates could be compounded.

The third problem is that of definition of concepts, especially of labour force, employment, underemployment, unemployment, unpaid family worker, age limits for labour force participants, treatment of persons with more than one activity, and the reference period. The problem is not merely the definition, per se, but its application in the field by the lay enumerators. Some of these problems have been considered by analysts of labour force data (1, 7 and 9). In the 1961 Census, a person (10 years of age or above) was considered to be in the labour force if he or she was: (i) working for profit or earning a wage or salary; (ii) was helping any member of his family on the farm etc.; (iii) was not working but looking for work (during the last week if a person was a non-agricultural worker/no reference period if a person was an agricultural worker). Students, housewives, beggars, prostitutes, and all other persons who were neither working, nor helping, nor looking for work, were not considered as part of the labour force.

The schedule which was used in West Pakistan had three alternative categories of response for the question on labour force status: (i) working; (ii) not working but looking for work; (iii) neither working nor looking for work. The questions in the schedule used in East Pakistan had an additional category: 'housewife'.

Thus it seems that by definition children under 10 years of age who were actually working, and students who might be working, were excluded. There was no probe with regard to the number of hours worked and the amount of help given by the unpaid family workers. There was more enquiry into the labour force status of females in East than in West Pakistan.

The fourth problem is the identification of the economically active population in relation to time. If a census is taken at the time of planting or harvesting, the size of the agricultural labour force may be over-estimated. Conversely, if a census is undertaken at a time when economic activity in agriculture is slack, the size of the labour force, especially of females, might be under-estimated. The 1961 Census was taken from January 12 to February 1 when economic activity in the country is relatively slow, especially in agriculture.

The fifth problem could be classified as a cultural one. In general, due to cultural reasons some males in the rural areas who are casual or seasonal workers might not admit that they are idle and unemployed. Many males will not admit that their female folks are working or looking for work even if they are, as living on the earnings of females is considered humiliating in the society. Part of the explanation for a high proportion of males in the labour force (56 per cent), and a low proportion of females (9 per cent), and a very low proportion of unemployed (1 per cent) reported in the 1961 Census might be found in the cultural context.

Finally, reliable data on distribution of the Labour force by occupation, education and skill, necessary to provide a basis for determining future requirements, are not available. Within each province administrative areas vary in population size, rate of growth of population, rate of labour force participation, employment, underemployment, unemployment, density of population and conditions of development in general. These

distributional aspects and regional disparities within each province must be understood on the basis of reliable current data and future estimates, for effectively solving the local problems.

All these problems are due to a lack of necessary data, interviewing and response errors, lack of clarity in the definitions and the understanding of concepts by the enumerators, which affect the accuracy and availability of data otherwise necessary for making projections.

III. POPULATION GROWTH, SEX-AGE COMPOSITION AND MANPOWER

The data and indices in this section are mainly based on the population projections used by the Planning Commission of the Government of Pakistan. Although there are several projections of population available, for this paper we thought that a review and analysis of the one which is actually being used in the Fourth Five Year Plan might provide a better illustration. Table I provides estimates of population by sex and broad age groups for 1960, 1970, 1975 and 1980, based on this projection. The base year figures shown in this table i.e., 100.7 million for Pakistan, 55.1 million for East Pakistan and 45.6 million for West Pakistan are higher than the corresponding figures 93.8, 50.8 and 43.0 million, respectively, reported in the 1961 Census. Before preparing this projection the 1961 Census reported figures were revised upward for assumed under-enumeration. The pattern of reported age data provided the main basis for the estimation of under-enumeration. The adjustments were made mainly in the younger age groups, which somewhat altered the reported age composition of the population. As the quality of the age data, inspite of the adjustments, is still questionable, the indices based on such data might not depict the real picture. It is for this reason that the presentation in tables I and II is made in broad age-groups rather than five year age groups.

Estimates given in table I show that at present the size of the country's population is about 136 million,

and during the decade 47 million more persons (22 during Fourth Plan period and 25 million during the Fifth Plan period) will be added. It is also estimated that by 1980 the population of East Pakistan will exceed the 100 million mark and that of West Pakistan the 80 million mark. These figures imply that the population of the country during the past decade was growing at a geometric rate of 3 per cent per annum and it will continue to grow almost at the same rate during the current decade of the 1970's. The figures imply that a reduction in fertility achieved through the family planning programme is likely to be undone by a decline in mortality and therefore the rate of natural increase will not show a change of any significance. The figures reveal a slight rise in the rate of growth for the current decade. The estimated population figures for East and West Pakistan for the past decade show that they were growing at a rate of 3.1 and 2.9 per cent per annum. The estimated figures for the current decade show that the rate of growth in East Pakistan might increase to 3.2 per cent per annum and in West Pakistan it might decline to 2.8 per cent per annum (Table IV).

The age composition of the population as shown in table II reveals an exceedingly high proportion of children under 15 years of age, and this proportion is higher in East than in West Pakistan. The corresponding proportions for Asian countries of the ECAFE region range between 38 to 41 per cent as against 46 per cent for Pakistan. According to the 1961 Census the proportion of children under 15 years was about 44 per cent, and part of the increase is due to the additions made to the younger age groups in the base population for suspected under-enumeration. But the major explanation for the high proportion of children is the high fertility and the extraordinary improvement in the infant mortality rates and hence larger family size. Such a high proportion of children under 15 years reduces the proportion of population in the working age of 15 to 64 years, increases the dependency ratio and accelerates the consumption of goods necessary to meet the growing basic needs of the population. Under the conditions of high fertility, large

family size and low per capita income in the country, personal savings of individuals or families are minimal. The government has to give tax exemption to a large proportion of the population, which reduces national savings. As major investments are necessary for meeting the basic needs like education and training in skills, technology and general welfare are too meagre to improve the quality of manpower and labour force to a desirable level.

Obviously the rapid growth of population in the country is exerting a direct as well as an indirect effect on both the quantity and quality of manpower and labour force, though in different directions. Since persons who will enter the labour force during the next 15 years have already been born and their proportion in the total population is exceptionally high, the rapid increase in manpower and labour force will continue beyond the current decade.

If family planning efforts bring significant declines in fertility, the growth of manpower will be faster than the growth of population. More females, when released of the burden of constantly bearing children, will become available to join the labour force. The projection figures reveal that the rate of growth of populations in the 15-64 years age groups during the decade 1970 to 1980 is likely to be 3.3 per cent per annum as against 3.1 per cent for the total population. In East Pakistan the growth of manpower is expected to be somewhat faster.

Every year, more than four million persons are being added to the labour force. As most of these persons have grown and developed under the conditions of malnutrition, poverty and ignorance, they create imbalances between the quantity and quality of available manpower. For promoting self-sustained economic development it is essential that policy consideration should be given to improving the quality of human life and individual development from the pre-school age. Investments greater than in proportion to the increase of population are necessary to raise the existing low levels of the quality of manpower.

IV. DEMOGRAPHIC REVIEW OF PROJECTIONS OF LABOUR FORCE AND EMPLOYMENT

The review of the prospective labour force and employment status in this section is based on the works of Karwanski (9) and Stern (13). Estimates of labour force employment and unemployment prepared by them are given in table III. These estimates reveal that the labour force grew at 2.7 per cent per annum during the past decade, while the total population grew at 3.0 per cent and the population in the working age, 15-64 years, grew at 3.1 per cent (table IV). The corresponding rates of growth for the Fourth Plan period are 2.9, 3.1 and 3.3 per cent. It seems likely that under the conditions mentioned in Section 2 of this paper, the growth of the labour force might have been under-estimated in the 1961 Census which provides the basis for the labour force projection. Due to the rapid increase of manpower (being the basic determinant of the labour force) and inadequate educational and training facilities (other conditions being the same), growth of the labour force should not be slower than the growth of manpower.

Table V also shows a decline in the labour force participation rates from 1960 to 1975. The decline in the labour force participation rates based on the population in the 15-64 age group is more systematic after 1970 than the rates based on the total population. If the indices shown in table V are somewhere near the true situation their implications for national development are serious.

The dependency ratio shown in table V is a crude measure as the numerator and the denominator are not the actual dependents and supporters, but it is a useful indicator for comparing various populations. The dependency ratios observed for Pakistan, East Pakistan and West Pakistan are exceedingly high. These ratios are higher than the similar ratios (estimated at 82-83) for the Asian countries of the ECAFE region and (at 60) for the developed countries. Again high dependency ratios in Pakistan are the manifestation of high fertility.

The gross dependency load and net dependency load as shown in table V depict a more realistic picture with regard to the ralationship between supporters and dependents. The gross index shows that on the average every person in the labour force in Pakistan, whether employed or unemployed, has to support at least three persons including himself. The net index reveals that every employed person, on the average, has to support around four persons including himself. These are, of course, averages and cloud the fact that a large proportion of the employed persons have to support a larger number of persons. The gross dependency loads are higher in West and the net dependency loads are higher in East Pakistan.

Table VI presents labour force participation rates by sex and broad, rather than detailed, age groups due to limitations of age data. In the labour force projections it is assumed that the participation rates of females as revealed by the 1961 census will not increase over the two decades (9). This appears to be a somewhat conservative assumption. As observed in section 2 of this paper, due to cultural reasons participation of females might be under-reported in censuses and surveys. Secondly, educational facilities for females are increasing at a faster rate than for males. Thirdly, if the family planning activities in the country are successful, more females are likely to join the labour force. Of course, Pakistan is among the few large developing countries which have an established family planning programme, although the effect on fertility is not yet clearly measurable. These arguments might seem to be too optimistic but the possibility of higher female labour force participation rates especially in the agricultural sector cannot be ruled out. On the other hand, participation rates of males, especially in the old age, appear to be exaggerated. While it might be true that many old persons might be working mainly due to poverty or to prove that they are still full of vigor and useful to society, most of them would probably be casual workers.

Table VII presents the problem with regard to the pressure of population on the land resources of the country

and the availability of agricultural land for the agricultural labour force. The population density figures show a somewhat contrasting situation in East and West Pakistan. East Pakistan, with the exceptior of Hong Kong and Singapore, is the most densely populated area of the world. West Pakistan has almost six times the area of East Pakistan, and is much less densely populated. But a large part of the land in West Pakistan is not usable for agriculture. By the end of the current decade East Pakistan, on the average, will have about 2000 persons per square mile. If the population of East Pakistan continues to grow at the estimated rate of 3 per cent per annum beyond 1980, the population figure of 1980 will be doubled in 23 years. In other words, by the end of the century East Pakistan might have a population density of around 4,000 persons per square mile.

The total land area of East Pakistan is 35 million acres. Excluding the area under water it reduces to 33 million acres. The current cultivable land is estimated at 23 million acres and it is likely to increase to 24 million acres by 1980. The ratio of population to land is estimated to increase from the current level of 3.8 to 4.3 per acre by 1980. The estimate for the current agricultural labour force is 20.3 million, and by 1980 it is likely to increase to 26.1 million. Currently only about one acre is available per agricultural worker, and by 1980 it will be less than one acre. After 1980, the demand for land will increase due to a rapid growth of population and the possibility of further expansion of agricultural land is likely to be minimal. As the rural population goes on increasing the supply of agricultural labour force will also grow.

The situation in East Pakistan with regard to the relationship of population and of the agricultural labour force to land has serious social, economic and ecological implications. The high ratio of population to agricultural land reveals a high pressure of population on agricultural resources. It appears that if the population continues to

grow at a rapid rate beyond the current decade, which is likely, agricultural land will begin to diminish. Currently only one acre of cultivable land is available per agricultural worker. Assuming that with the traditional methods of cultivation 2 acres is a minimum requirement for the full employment on an agriculture worker, out of 20.3 million workers at present in the agricultural labour force only 11.4 million could find a full time job. Although it is a conservative assumption it provides an estimate of unemployment of 8.9 million or 44 per cent of the total labour force in agriculture. This is considerably higher than the estimated figures of 6.8 million in the labour force projections. (10 and 13). With this procedure, the figure for unemployment for 1980 could be 14.2 million, which is more than 50 per cent of the total estimated agricultural labour force. Of course, these are all very crude estimates but they do serve the purpose of highlighting the serious problem of the growth of the agricultural labour force in relation to the land resources of East Pakistan. This problem is not so serious at present in West Pakistan, but it should learn from the experience of East Pakistan and take necessary preventive measures.

V. ECONOMIC REVIEW OF LABOUR FORCE PROJECTIONS

Almost all the professional work on labour force projections has been done in Government and foreign-aid institutions, notably by the Manpower Planning Project in the Manpower Section of the Planning Commission.

The most commonly used method in projecting the short and medium term labour force requirements for the whole economy/sectors is the method of average (or marginal) value added per worker. (4, 5, 6, 10 and 12). There is no doubt that the marginal value added/labour ratios are better than the average ratios if they can be estimated.

It must be noted, however, that the sectoral value added/labour ratios are not sufficient, because in a growing economy like Pakistan sectoral distribution is expected to change. In fact, the most dynamic and growing sectors like manufacturing, transport and communications, health

and education, should be divided into subsectors in order to estimate the value added/labour ratios.

In connection with the value added/labour ratios it should be observed that the work done in Pakistan is based on the 1951 and 1961 Censuses and other sources like partial surveys and national income estimates. Besides the limitations of the 1951 and 1961 Census data, the growth experience of the Pakistan economy during 1950-1960 is very peculiar and different from the decade 1960-70. It is, therefore, essential that the estimation of the marginal value added/labour ratios (or investment-labour ratios) should be based on relevant data. This can be achieved by conducting proper censuses of manufacturing industries and partial surveys in other sectors. Intensive sectoral surveys may be useful in this connection.

For the purposes of making long-term projections of manpower and labour force requirements one needs a proper bench mark, labour productivity coefficients and their behaviour pattern, and a proper sectoral distribution of the economy. As to the bench marks used, most research workers make use of the 1961 Census (Volume 4) as the bench mark. The 1961 Census might not be the most reliable source available. Even assuming that the Census information is correct, one should be reluctant to use it for long term projections because prior to the Census progress in the Pakistan economy was made under less sound policies causing a misallocation of resources. For example, in the manufacturing sector development took place under policies such as high tariffs and other kinds of protection, overvaluation of the rupee, cheap capital, and subsidies of many kinds. Furthermore, the industries have been operating under market conditions which lacked competition. In the field of agriculture also, prices of various inputs and outputs were distorted through Government policies in such a way that they failed to reflect the relative resource scarcities.

The actual method adopted by the Manpower Project of the Planning Commission for projecting long-term manpower and labour force requirements is based on employment

pattern functions from a 40-country model(11). According to Ruud the intercountry model includes developed and developing countries and the estimated employment pattern is thought to be relevant for the Pakistan economy.

In the first instance, it should be noted that the intercountry model is not relevant for Pakistan, because the countries included in the model have an average per capita income of $ 748, with a range of $ 109 to $ 2,295. It is obvious that countries like Pakistan which have an average per capita income of about $ 70 at 1960-61 price level are not included in the model, since countries with per capita income under $ 100 are excluded. Countries with a per capita income between $ 100 and $ 150 are six in number which is only 15 per cent of the whole sample. Thus it can be said that very few countries like Pakistan (as judged by the per capita income level) are included in the model and that the results of the model cannot be regarded as reflecting the structural changes which we are looking for.

Another point worth noting is that the population in these countries, with the exception of the United States, seldom exceeded 60 million; whereas Pakistan's population at present is estimated by the Planning Commission at 136 million. Thus the intercountry model includes very few countries which have a per capita income and population size close to Pakistan's and this raises doubts about the applicability of the model and the results based on it to the Pakistani situation.

STATISTICAL APPENDIX

TABLE I

ESTIMATES OF POPULATION BY BROAD AGE GROUPS AND SEX, 1960-1980

Pakistan, East Pakistan and West Pakistan

(figures in 000's)

Area, age group of population	1960*			1970		
	Both Sexes	Male	Female	Both Sexes	Male	Female
Pakistan:						
Population						
Total	100,741	51,507	49,234	135,514	69,622	65,893
0-14	46,047	23,147	22,900	63,011	32,267	30,744
15-64	30,959	26,239	24,720	69,259	35,560	33,700
65 and over	3,735	2,121	1,614	3,244	1,795	1,449
East Pakistan:						
Population						
Total	55,137	27,895	27,242	74,907	38,206	36,702
0-14	25,753	12,892	12,861	35,619	17,983	17,637
15-64	27,682	14,067	13,615	37,718	19,366	18,352
65 and over	1,702	936	766	1,570	857	713
West Pakistan:						
Population						
Total	45,604	23,611	21,993	60,607	31,416	29,191
0-14	20,296	10,256	10,039	27,390	14,284	13,106
15-64	23,275	12,170	11,106	31,544	16,194	15,350
65 and over	2,033	1,185	848	1,673	938	735

continued...

Area, age group of population	1975			1980		
	Both Sexes	Male	Female	Both Sexes	Male	Female
Pakistan:						
Population						
Total	157,677	81,029	76,649	182,769	93,971	88,798
0-14	72,611	37,259	35,352	82,532	42,364	40,169
15-64	81,537	41,836	39,702	96,304	49,469	46,834
65 and over	3,529	1,934	1,595	3,933	2,138	1,795
East Pakistan:						
Population						
Total	87,872	44,813	43,058	102,632	52,363	50,270
0-14	41,520	21,009	20,511	47,710	24,179	23,530
15-64	44,613	22,857	21,755	52,989	27,121	25,869
65 and over	1,739	947	792	1,933	1,063	871
West Pakistan:						
Population						
Total	69,805	36,216	33,589	80,137	41,608	38,529
0-14	31,092	16,249	14,842	34,320	18,183	16,637
15-64	36,923	18,980	17,944	43,317	22,350	20,968
65 and over	1,790	987	803	2,000	1,075	924

*The 1961 Census reported 93.83 million for Pakistan, 50.85 million for East Pakistan and 42.98 million for West Pakistan. The population figures were adjusted on the basis of assumed under-enumeration in the 1961 Census.

Source: (9, Tables 29-31).

TABLE II

PERCENTAGE DISTRIBUTIONS OF ESTIMATED POPULATION BY BROAD AGE GROUPS AND SEX, 1960-1980

Pakistan, East Pakistand and West Pakistan

Area, age group of population	1960			1970		
	Both Sexes	Male	Female	Both Sexes	Male	Female
Pakistan:						
Population						
Total	100.0	100.0	100.0	100.0	100.0	100.0
0-14	45.7	44.9	46.5	46.5	46.3	46.7
15-64	50.6	50.9	50.2	51.1	51.1	51.1
65 and over	3.7	4.1	3.3	2.4	2.6	2.2
East Pakistan:						
Population						
Total	100.0	100.0	100.0	100.0	100.0	100.0
0-14	46.7	46.2	47.2	47.6	47.1	8.1
15-64	50.2	50.4	50.0	50.3	50.7	50.0
65 and over	3.1	3.4	2.8	2.1	2.2	1.9
West Pakistan:						
Population						
Total	100.0	100.0	100.0	100.0	100.0	100.0
0-14	44.5	43.4	45.6	45.2	45.5	44.9
15-64	51.0	51.6	50.5	52.5	51.5	52.6
65 and over	4.5	5.0	3.9	2.8	3.0	2.5

continued...

Area, age group of population	1975			1980		
	Both Sexes	Male	Female	Both Sexes	Male	Femal
Pakistan:						
Population						
Total	100.0	100.0	100.0	100.0	100.0	100.0
0-14	46.1	46.0	46.1	45.2	45.1	45.2
15-64	51.7	51.6	51.8	52.7	52.6	52.8
65 and over	2.2	2.4	2.1	2.1	2.3	2.0
East Pakistan:						
Population						
Total	100.0	100.0	100.0	100.0	100.0	100.0
0-14	47.2	46.9	47.6	46.5	46.2	46.8
15-64	50.8	51.0	50.5	51.6	51.8	51.5
65 and over	2.0	2.1	1.9	1.9	2.0	1.7
West Pakistan:						
Population						
Total	100.0	100.0	100.0	100.0	100.0	100.0
0-14	44.5	44.9	44.2	43.5	43.7	43.2
15-64	52.9	52.4	53.4	54.0	53.7	54.4
65 and over	2.6	2.7	2.4	2.5	2.6	2.4

Source: Table 1.

TABLE 111

ESTIMATES OF LABOUR FORCE BY AGRICULTURE AND NON-AGRICULTURE SECTOR AND EMPLOYMENT STATUS, 1960-1980

Pakistan, East Pakistan and West Pakistan

Area, sector of labour force	1960			1970		
	Total	Employed	Unemployed	Total	Employed	Unemployed
Pakistan:						
Total	32,624	24,584	8,040	42,390	34,260	8,130
Agriculture	24,419	16,829	7,590	29,914	22,334	7,580
Non-agriculture	8,205	7,755	450	12,476	11,926	550
East Pakistan:						
Total	18,639	12,869	5,770	24,774	17,724	7,050
Agriculture	16,029	10,429	5,600	20,314	13,564	6,750
Non-agriculture	2,610	2,440	170	4,460	4,160	300
West Pakistan:						
Total	13,985	11,715	2,270	17,616	16,536	1,080
Agriculture	8,390	6,400	1,990	9,600	8,770	830
Non-agriculture	5,595	5,315	280	8,016	7,766	250

continued...

Table III continued...

Area, sector of labour force	1975			1980		
	Total	Employed	Unemployed	Total	Employed	Unemploye
Pakistan:						
Total	48,996	42,286	6,710	56,920	-	-
Agriculture	33,520	27,400	6,120	37,715	-	-
Non-agriculture	15,476	14,886	590	19,205	-	-
East Pakistan:						
Total	28,713	22,843	5,870	33,475	-	-
Agriculture	22,970	17,420	5,550	26,110	-	-
Non-agriculture	5,743	5,423	320	7,365	-	-
West Pakistan:						
Total	20,283	19,443	840	23,445	-	-
Agriculture	10,550	9,980	570	11,605	-	-
Non-agriculture	9,733	9,463	270	11,840	-	-

Source: (9 and 13).

TABLE IV

GROWTH RATES OF TOTAL POPULATION, MANPOWER, LABOUR FORCE AND EMPLOYMENT:1960-1980

Pakistan, East Pakistan and West Pakistan

(Geometric Rates)

Type of Population	1960-1970			1970-1975			1975-1980		
	Pakistan	East Pakistan	West Pakistan	Pakistan	East Pakistan	West Pakistan	Pakistan	East Pakistan	West Pakistan
Total Population	3.0	3.1	2.9	3.1	3.2	2.9	3.0	3.2	2.8
Population 15 - 64	3.1	3.1	3.1	3.3	3.4	3.2	3.3	3.5	3.2
Labour Force	2.7	2.9	2.3	2.9	3.0	2.9	3.0	3.1	2.9

Source: (Tables I and III).

TABLE V

ESTIMATES OF LABOUR FORCE PARTICIPATION BY SEX AND DEPENDENCY RATES
1960-1980

Pakistan, East Pakistan and West Pakistan

Area, type of L.F. participation and dependency rates	1960			1970		
	Both Sexes	Male	Female	Both Sexes	Male	Female
Pakistan:						
L.F. participation rate in total pop.	32.4	55.0	8.7	31.3	52.8	8.6
L.F. participation rate in pop. 15-64	64.0	108.0	17.4	61.2	103.3	16.8
Dependency ratio (1)	97.7	-	-	95.7	-	-
Gross dependency load (2)	308.8	-	-	319.7	-	-
Net dependency load (3)	409.8	-	-	395 5	-	-
East Pakistan:						
L.F. participation rate in total pop.	33.8	56.1	11.0	33.1	54.5	10.7
L.F. participation rate in pop. 15-64	67.3	111.3	21.9	65.7	107.6	21.5
Dependency ratio (1)	99.2	-	-	98.6	-	-
Gross dependency load (2)	295.8	-	-	302.4	-	-
Net dependency load (3)	428.4	-	-	422.6	-	-
West Pakistan:						
L.F. participation rate in total pop.	30.7	53.7	5.9	29.1	50.6	5.9
L.F. participation rate in pop. 15-64	60.0	104.2	11.7	55.8	98.1	11.2
Dependency ratio (1)	95.9	-	-	92.1	-	-
Gross dependency load (2)	326.1	-	-	344.0	-	-
Net dependency load (3)	389.3	-	-	366.5	-	-

continued...

Area, type of L.F. participation and dependency rates	1975			1980		
	Both Sexes	Male	Female	Both Sexes	Male	Female
Pakistan:						
L.F. participation rate in total pop.	31.1	52.4	8.6	31.1	52.4	8.6
L.F. participation rate in pop. 15-64	60.1	99.0	16.5	59.1	99.6	16.4
Dependency ratio(1)	93.4	-	-	89.8	-	-
Gross dependency load(2)	321.8	-	-	321.1	-	-
Net dependency load(3)	372.9	-	-	-	-	-
East Pakistan:						
L.F. participation rate in total pop.	32.7	53.9	10.6	32.6	53.7	10.7
L.F. participation rate in pop. 15-64	4.6	106.6	21.0	63.2	103.7	20.7
Dependency ratio(1)	97.0	-	-	93.7	-	-
Gross dependency load(2)	306.0	-	-	306.6	-	-
Net dependency load(3)	384.7	-	-	-	-	-
West Pakistan:						
L.F. participation rate in total pop.	29.1	50.5	5.9	29.3	50.8	6.0
L.F. participation rate in pop. 15-64	54.9	96.4	11.1	54.1	94.6	11.0
Dependency ratio(1)	89.1	-	-	85.0	-	-
Gross dependency load(2)	344.2	-	-	341.8	-	-
Net dependency load(3)	359.0	-	-	-	-	-

Source: (Tables I and III)

(1) Dependency ratio = $\frac{\text{Population (0-14) + (65 and over)}}{\text{Total Population}} \times 100$

(2) Gross dependency load = $\frac{\text{Total Population}}{\text{Population in labour force}} \times 100$

(3) Net dependency load = $\frac{\text{Total Population}}{\text{Number Employed}} \times 100$

TABLE VI

ESTIMATES OF LABOUR FORCE PARTICIPATION RATES BY BROAD AGE GROUPS AND SEX, 1960-1980

Pakistan, East Pakistan and West Pakistan

Area, age group of labour force	1960			1970		
	Both Sexes	Male	Female	Both Sexes	Male	Fema
Pakistan:						
Total	32.4	55.0	8.7	31.3	52.8	8.6
0-14	7.1	11.8	2.3	6.9	11.2	2.2
15-64	54.0	91.1	14.7	52.9	89.5	14.4
65 and over	49.8	80.5	9.4	44.6	73.0	9.5
East Pakistan:						
Total	33.8	56.1	11.0	33.1	54.5	10.7
0-14	8.5	13.8	3.1	6.9	13.4	3.0
15-64	56.3	93.0	18.4	55.8	91.8	18.2
65 and over	51.8	84.5	11.9	47.5	77.2	11.9
West Pakistan:						
Total	30.7	53.7	5.9	29.1	50.6	5.9
0-14	5.2	9.2	1.2	4.9	8.4	1.1
15-64	51.3	88.9	10.1	49.4	86.7	10.0
65 and over	48.1	77.4	7.1	41.9	69.2	7.1

continued...

Area, age group of labour force	1975			1980		
	Both Sexes	Male	Female	Both Sexes	Male	Female
Pakistan:						
Total	31.1	52.4	8.6	31.1	52.4	8.6
0-14	6.3	10.5	2.0	5.8	9.5	1.8
15-64	52.6	88.8	14.4	52.5	88.6	14.4
65 and over	42.3	69.4	9.5	40.2	66.1	9.4
East Pakistan:						
Total	32.7	53.8	10.6	32.6	53.7	10.7
0-14	7.7	12.5	2.7	7.1	11.5	2.5
15-64	55.5	91.0	18.1	51.5	90.6	18.1
65 and over	45.5	73.7	11.9	44.1	70.4	11.9
West Pakistan:						
Total	29.1	50.5	5.9	29.2	50.8	6.0
0-14	4.6	8.0	1.0	4.0	6.9	0.9
15-64	49.2	86.2	10.0	49.2	86.0	9.9
65 and over	39.2	65.4	7.1	36.5	61.8	7.1

Source: (9 and Table I)

TABLE VII

DENSITY OF POPULATION AND LAND AVAILABLE PER WORKER IN AGRICULTURE, 1960-1980

Pakistan, East Pakistan and West Pakistan

Type of density and area	Pakistan			
	1960	1970	1975	1980
Density of population per square mile (total land)	278	374	435	504
Estimate of cultivable land (000 acres)	63,010	76,210	84,110	93,020
Density of population per acre of cultivable land	1.60	1.78	1.87	1.96
Acres of cultivable land available per worker in agriculture	2.58	2.55	2.51	2.47

Source: (9)

continued...

		Square miles	Acres (000)
Total land area:	Pakistan	: 365,529	233,939
	East Pakistan:	55,126	35,281
	West Pakistan:	310,403	198,658

Type of density and area	East Pakistan 1960	1970	1975	1980
Density of population per square mile (total land)	1,062	1,443	1,692	1,977
Estimate of cultivable land (000 acres)	21,640	22,720	23,290	23,860
Density of population per acre of cultivable land	2.55	3.30	3.77	4.30
Acres of cultivable land available per worker in agriculture	1.35	1.12	1.00	0.91

continued...

Type of density and area	West Pakistan 1960	1970	1975	1980
Density of population per square mile (total land)	147	195	225	258
Estimate of cultivable land (000 acres)	41,370	53,490	60,820	69,160
Density of population per acre of cultivable land	1.10	1.13	1.15	1.16
Acres of cultivable land available per worker in agriculture	4.93	5.57	5.76	5.96

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PROJECTIONS OF MANPOWER REQUIREMENTS IN PAKISTAN: A METHODOLOGICAL NOTE

Dr. S. Mushtaq Hussain

I. Introduction
II. Sources and Nature of Manpower Projections in Pakistan
III. Concepts, Bench Marks and Methods Used
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V. Estimating Underemployment in the Agricultural Sector : Changes during 1951-61
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I. INTRODUCTION

In planning for economic development the importance of manpower projections can hardly be overlooked. Labour is an important, multi-dimensional factor of production - not only the quantity of labour is significant, but also its intensity of use and quality are crucial in determining its contribution to the production of goods and services.

Projections of capital requirements are commonly used to estimate the saving and balance of payments gaps as possible serious bottlenecks in the process of development. Just like those for capital, projections on manpower requirements (both quantity and quality) can help identify the various kinds of shortages and surpluses which could become bottlenecks or serious economic and political problems.

Keeping in view the fact that it takes a long 'lead'

time to change both the quantity and quality of manpower, timely projections are essential in identifying shortages and surpluses of various kinds and in taking proper policy and other measures to check them.

In most underdeveloped countries manpower planning and projections are not given adequate attention and treatment. Somehow, one of the factors of production, i.e., capital, steals away the attention of planners. This is an unfortunate tendency and could have very serious consequences in countries like Pakistan where manpower shortages in terms of quality, and surpluses in terms of quantity are substantial and growing.

Some work on manpower projections and planning has been done in Pakistan during the last few years. The basic aims of this paper are to review the available professional work, make some suggestions for methodological improvements, and suggest some tentative policies to overcome the foreseen problems.

II. SOURCES AND NATURE OF MANPOWER PROJECTIONS IN PAKISTAN

Almost all the professional work has been done in Government and foreign-aid institutions. The main source is the ILO/UNDP Manpower Planning Project based at the Manpower Section of the Planning Commission, Islamabad. Under this project, two foreign advisers Messers. K. Ruud and R.A. Karwanski were actively engaged in the preparation of manpower projections of various kinds. They have produced over a dozen pieces of work by using the available and generated data during the last four years.

The work by Mr. Ruud is heavily oriented towards projecting manpower requirements, whereas the work by Mr. Karwanski has been oriented towards projecting manpower availability. The projections cover five year periods from 1970 upto 1990. Further, they have also been extensively involved in projecting manpower skill and educational level requirements.

Work on the lines of the ILO/UNDP Manpower Planning Project was done for East Pakistan by the Planning Department, Government of East Pakistan. This work concentrates on the estimation of the available stock of skilled manpower, covering degree and diploma holders. It also makes projections of skilled manpower requirements and availability for the Fourth Five Year Plan period (1970-75).

Some work was also done by the Planning and Development Department, Government of West Pakistan, mostly in estimating the employment and manpower situation for the year 1968-69. This work does not deal with meidum and long-term manpower projections due to certain reservations about the available data and methodology.

Outside the Government agencies, substantial work on manpower projections and its problems was done in the USAID in the form of various reports and studies by the consultants.

In the time perspective, work by the USAID is the earliest. Then come the works by the ILO/UNDP Manpower Planning Project and the work by the Planning Department of the East and West Pakistan governments.

(a) Concepts, Bench marks and Methods used:

A few words should be said about the nature of the concept of manpower 'requirements' as opposed to manpower 'demand'. The market approach to manpower planning focusses on the demand for and supply of manpower and the balancing of both in the short time periods the market approach is feasible. But as the time horizon is extended, projections of demand and supply become extremely uncertain and lose their usefulness.

On the other hand, for medium and long time periods manpower planning necessitates a structural approach in which the sectoral occupational and educational structures of the labour force and employment are worked out. The structural aspects can be predicted with some reliability even for long time periods. Since it takes a long lead time to influence the structural aspects of manpower, advance knowledge (projections) about them is extremely

useful. Demand and supply are economic concepts and any projections about them must take into account the relevant economic factors.

Requirements and availabilities, on the other hand, are methodological concepts. They essentially work out implications of certain assumptions relevant for the long run behaviour of the economy rather than the market behaviour in the short run. Projections of manpower requirements and availabilities, however, should take into account as many economic factor as possible to make them more useful.

This paper is confined to projections of manpower requirements. Most professional workers are not clear about what they mean by manpower requirements. Since the concept of manpower requirements is methodological, its meaning will vary depending on the methodology used. In general we distinguished between two types of approaches to manpower requirements:

i) Budgetary manpower requirements, and
ii) Optimal manpower requirements.

The budgetary approach is based on the observed (or technologicaly determined) manpower requirements needed to produce a unit of output or to match with a unit of investment. Projections of manpower requirements under this approach extend the bench mark situation with or without certain minor assumptions about the budgetary relationships into the future.

Under the optimal manpower requirements approach, questions are raised as to the optimal nature of output (or investment) - labour relationships, sectoral mix of the economy, etc. If at all levels optimal relationships are used, then the manpower requirements would mean minimum requirements relative to the basic assumptions made.

After making the distinction between the market approach and the structural approach, we proceed to describe the work in Pakistan.

(a) Manpower, Requirements of the Economy and its Sectoral Distribution:

We first begin with projections of manpower requirements for the whole economy and its sectoral distribution. The commonly used technique in this connection is to estimate the output (or gross value added) per worker for the various sectors of the economy and to apply the estimate to the projected sectorwise value added. This method can be regarded as the average output-labour ratio method. The method was used by Dr. Nicholas DeWitt (3) , F.G. Seib (26), Gary G. Hufbauer(7), K. Ruud (18), and the Department of Planning, Government of East Pakistan (4).

The essential step in this method is to estimate, or assume, the sectoral average output-labour ratios. Dr. DeWitt, in the absence of a better alternative, used the Censuses of 1951 and 1961 and the data on gross value added compiled by the Central Statistical Office to estimate the output per worker for the year 1950/51 and 1960/61, the observed an annual rate of productivity decline of 1.4 per cent in agriculture, 0.6 per cent in transportation and 0.9 per cent in trade, utilities and services. Labour productivity increased, however, at the annual rate of 1.8 per cent in manufacturing and mining and at 5.7 per cent in construction (Appendix Table I).

Dr. DeWitt projected employment for the year 1969-70 on the basis of the observed output per worker in 1960-61, (version I), and by assuming increased labour productivity of 20 per cent in manufacturing and of 50 per cent in construction (version II). The assumed increase in the sectoral labour productivity is based on the trend during the 1951-61 period. The observed labour productivity declines between the years 1951 and 1961 in the three sectors were, however, ignored (1, pp. 18-19).

The Planning Department, Government of East Pakistan, recognizing certain target assumptions about the growth of sectorwise value added per worker and taking the estimated sectoral value added in 1970 as the bench mark, projected

employment for the Fourth Five Year Plan (1970-75) (4, pp. 38-39).

Dr. Gary Hufbauer(7) slightly deviated from the above method in arguing that single year estimates of value added (output) per worker are defective in the sense that they indicate average budgetary relationships. What is more appropriate is the marginal value added per worker and this cannot be estimated from a single year aggregative data.

Furtunately, employment and value added data on West Pakistan are available by major sectors for the year 1951, 1955, 1959, 1961, 1963/64 and 1965 which were put through a regression analysis by Hufbauer. Significant relationships between employment and value added were found over time in agriculture, manufacturing, transport and communications, and trade sectors. On the basis of the implied marginal value added per worker, employment projections were made for the years 1966/67 and 1967/68. In the case of those sectors (i.e., mining, construction, public utilities, etc.) for which the relationship between employment and value added could not be estimated due to the lack of data, single year estimates were used.

Dr.Hufbauer's projections for the year 1966/67 and 1967/68 are based on the experience of the recent past (1951-65) and should be regarded as short-term. He did not suggest the use of marginal value added/labour ratios for long-term projections, even though marginal ratios are superior to average ratios. Dr.Hufbauer is wise in doing so because the marginal ratios, though superior estimates, are only meaningful in relation to the growth behaviour and pattern during the period for which they are estimated. Unless one knows enough about the behaviour and pattern of marginal ratios in a growing economy and is reasonably sure about their reliability and stability, long-term projections based on average or marginal value added/labour ratios could be extremely inappropriate.

It is not very encouraging to see that some of the

employment projections made by the Planning Commission for the Perspective Plan period(upto 1985) are based on single year value added/labour ratios and certain untested assumptions on labour productivity changes.

In fact, labour-productivity studies available so far are inadequate to provide suitable information on the elasticity of employment (or labour productivity) in developing economies.

In view of these problems, one is left with two alternatives: i) projections of manpower requirements should only be made for short-term periods, or ii) factual information on employment behaviour in a growing economy should be obtained to form a sound basis for projecting long-term manpower requirements.

Alternative i) was chosen by Dr. DeWitt (3) Dr.Gary Hufbauer(7), and the Department of Planning, Government of East Pakistan (4). Other have argued that alternative ii) must be pursued because of the inevitable need for projecting long-term manpower requirements (18, pp. 10-12).

Given the fact that long-term manpower projections are important but presently lacking, Mr. Ruud makes an attempt at producing a set of such projections. It may be noted that long-term projections made by Ruud are the only ones available in Pakistan outside the work done for the Perspective Plan by Wouter Tims and other at the Planning Commission.

As pointed out earlier, knowledge about employment behaviour in a growing economy is a prerequisite for projecting long-term manpower requirements. For this purpose, the Pakistan experience is limited and not very clear due to the lack of proper data. Hence, Mr. Ruud is tempted to use the results of an intercountry analysis developed by Yves Sabolo (25). Sabolo's work includes 40 developed and developing countries and estimates the relationship between the sectoral employment pattern and economic growth through regression equations. (Table II). The results of the analysis are the following (18m pp. 13-14).

	Sectors	Estimated Functions	R
(1)	$\log \frac{100\ E_o}{N}$	$= 1.783 - 0.106\ (\log Y/N)^2$	.712
(2)	$\log \frac{100\ E_{2-3}}{N}$	$= -0.014 + 0.105\ (\log Y/N)^2$	.825
(3)	$\log \frac{100\ E_3}{N}$	$= -6.045 + 4.206\ (\log Y/N)$ $(\log Y/N)^2$	.826
(4)	$\log \frac{100\ E_5}{N}$	$= -2.193 + 0.581\ (\log Y/N)$	.810
(5)	$\log \frac{100\ E_6}{N}$	$= 0.046 + 0.072\ (\log Y/N)^2$	.827
(6)	$\log \frac{100\ E_7}{N}$	$= -1.124 + 0.487\ (\log Y/N)$	.800
(7)	$\log \frac{100\ E_8}{N}$	$= -0.142 + 0.344\ (\log Y/N)$	.800

Where,

N	=	Population.
Y	=	GDP in 1960 US dollars.
E_o	=	Employment in Agriculture, Forestry and Fishing.
E_{2-3}	=	Employment in Manufacturing and Mining.
E_4	=	Employment in Construction.
E_5	=	Employment in Gas, Water and Electricity Services.
E_6	=	Employment in Commerce.
E_7	=	Employment in Transport and Communication.
E_8	=	Employment in Services.

Regression equations (1) - (7) are based on a non-linear function of the following general form:

$$Y = cx^{(b + a \log x)} + \xi \quad \ldots\ldots\ldots\ldots\ldots (8)$$ 1/

$$\log Y = \log c + b \log x + a (\log x)^2 + \xi \quad \ldots\ldots\ldots (9)$$

In the context of sectoral complement distribution it is given the form:

$$\log \frac{100\ E_i}{N} = b_o + b_1 (\log Y/N) + b_2 (\log Y/N)^2 \quad (10)$$

The explained variable is sectoral employment as a percentage of population in logrithmic form. The explanatory variables are per capita income and per capita income squared, both in logrithmic form. The model essentially relates the relative employment in each of the major sectors to per capita national income. Since the countries included in the model are at different per capita income levels, the estimated coefficients are supposed to reflect a relationship between the pattern of sectoral employment and economic growth. Moreover, the sectoral employment distribution is expressed in terms of population; this helps to estimate the employment distribution as well as the level of employment at various income levels. If the employment distribution were expressed in terms of labour force, then the level of employment could not be estimated.

On the basis of the estimated relationships of sectoral employment and per capita income growth, and by taking 1961 as the bench mark, projections for the year 1970, 1975, 1980, 1985 and 1990 were made. The procedure followed for each sector is as follows:

i) by inserting the value of independent variables for all years of projection, including the base year 1961, estimates of the dependent variables, i.e., 100 E_i/N (sectoral employment as a per cent of population) were obtained;

1/ Chenery proposed a similar relationships for the manufacturing sector (2).

ii) estimates obtained under i) were adjusted by a constant factor which is equal to the difference between the unadjusted estimate of 100 E_i/N for the base-year and its actual (Census) value;

iii) by multiplying the adjusted 100 E_i/N estimates under ii) by the population estimates, employment projections are obtained; and

iv) by adding the unemployment estimates to iii) estimates of labour force requirements are obtained.

Adjustments under ii) show that the application of Sabolo's intercountry model aims at projecting changes rather than levels of sectoral employment.

By adding up the projected sectoral manpower requirements, the total requirements come to 64.7 millions in 1990 against the projected manpower availability of 75.7 millions for the same year 2/. This leaves a manpower surplus of 11 million (East Pakistan: 6.6 million; West Pakistan: 4.4 million) which Mr. Ruud adds to the agricultural sector which, being the traditional sector, is expected to retain surplus manpower in the form of underemployment and unemployment (24, pp. 2.5).

It was estimated that after 1970 if the population growth is reduced from 3.0 per cent to 2.25 per cent there will be no manpower surplus.

The surpluses are also sensitive to the growth of the economy. Mr. Ruud has used the following growth rates for East and West Pakistan.

	1961-65	1965-70	1970-90
East Pakistan	4.5%	5.0%	7.0%
West Pakistan	6.5%	6.5%	6.0%

2/ Manpower (labour force) availability is projected by Dr. R.A. Karwanski (10 ; 11).

In the light of the past growth experience of the Pakistan economy, it seems that the assumed growth rates are quite reasonable. Moreover, a sensitivity analysis could be useful in showing how far the acceleration of economic growth can reduce the projected manpower surpluses in both the wings. But such an analysis was not done by Mr. Ruud.

(b) Occupational Pattern and Educational Levels:

In order to project the manpower requirements with occupational distribution and educational levels, the usual procedure has been to begin with manpower projections for the economy/sectors and to apply the occupational/educational coeffecients.

For example, Dr. DeWitt, after projecting the manpower requirements for the years 1964 and 1970, uses the number of matriculates, graduates and post-graduates per thousand employed in various sectors to estimate the manpower educational level requirements. The educational level coefficients are estimated from the 1951 and 1961 Censuses (Table II). Similarly, the occupational pattern by a few categories is also estimated.

It may be noted that, methods of projections the educational and occupational pattern is comparable with the method of value added-labour ratios used in projecting manpower requirements.

The Department of Plannings, East Pakistan has used more than one method for projecting the manpower occupational pattern and educational levels during the Fourth Five Year Plan. The first method used is to break down manpower into educational levels on the basis of the experience of the Second and Third Plans. For example, in the case of engineers, both the marginal investment-employment ratio and the marginal employment-output ratio for the Second plan were tried. On the basis of the projected need for engineers, requirements for diploma engineers and certificate technicians were estimated at the ratio of 1:3:10 for the manufacturing sector. In the case of teachers and doctors, the teacher-student ratio and population-doctor ratio were applied, respectively.

In the case of agricultural personnel the ideal requirements for an administrative unit, i.e., Thana, were applied. In the case of accountants the ratio of accountants to the gross domestic product was used.

Mr. Ruud has done more elaborate work on projecting manpower occupational patterns and educational levels. He has used three methods. The first method is regarded as the indirect method in which projections of educational requirements are made into two steps: i) sectoral employment estimates are multiplied by the occupational patterns, i.e., relative distribution of employment by occupations within each sector, resulting into employment estimates by occupation, and ii) multiplying i) by the estimates of educational patterns of occupations, estimates of employment by the level of education are obtained.

Under the second method (also called the direct method) employment by the level of education can be estimated in one single step by multiplying the sectoral employment by the educational level patterns of the various sectors.

Information on the first and second methods is built from the employment situation in the base year 1961.

In order to check the estimates of labour force by the education levels, a third method was applied. This method was developed by the Netherlands Economic Institute on the basis of an intercountry analysis (15). The estimated relationships are as follows:-

$$S = 163.7\ (Y.10^{-6})^{1.314}\ (Y/P)^{-0.655}$$

$$G = 5.2\ (Y.10^{-6})^{1.202}\ (Y/P)^{-0.164}$$

where,

Y = GNP in 1957 U.S. dollar

Y/P = GNP per capita in 1957 U.S. dollars

S = Manpower stock educated to second level

G = Manpower stock educated to third level

On the basis of the three methods, Mr. Ruud derives a final set of estimates as a compromise between the three basic estimates.

IV. A CRITICAL REVIEW OF BENCH MARKS AND METHODS USED

The most commonly used method in projecting the short and medium term manpower requirements for the whole economy/ sectors is the method of average (or marginal) value added per worker. There is no doubt that the marginal value added-labour ratios are better than the average ratios if they can be estimated.

It must be noted, however, that the sectoral value added-labour ratios are not sufficient, because in a growing economy like Pakistan the sectoral distribution is expected to change. In fact, the most dynamic and growing sectors like manufacturing, transport and communications, health and education, should be divided into sub-sectors in order to estimate the value added-labour ratios.

Proper sectoral distribution is an essential prerequisite, because the sectoral-labour productivity in an economy like Pakistan varies widely. For example, in 1960-61, the output per worker was Rs.858 in agriculture, Rs.1136 in manufacturing and mining, Rs.2047 in construction, Rs.2693 in transportation and Rs.2181 in trade, utilities and services (Table IV). Since full employment, competitive markets and mobility are lacking for labour, the value added-labour ratios tend to be unequal. The average value added per worker in the non-agricultural sectors is more than twice the labour productivity in the agricultural sector. 3/

Most of the research workers in Pakistan have done very little work on the sectoral distribution of the economy. For purposes of manpower projections, they have

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3/ This difference in labour productivity, among other things, could be due to the difference in the capital used on a per head basis.

borrowed the sectoral distribution from the Planning Commission.

In connection with the value added-labour ratios, it should be observed that the work done in Pakistan is based on 1951 and 1961 Censuses and other sources like partial surveys and national income estimates. The state of data before 1960 is not very good and also the growth experience of the Pakistan economy during 1950-1960 is very peculiar and different from that of the decade 1960-70, and the period after 1970. It is, therefore, essential that the estimation of the marginal value added labor ratios (or investment-labour ratios) should be based on very sound data. This can be achieved by conducting proper Censuses of manufacturing industries and partial surveys in other sectors. Intensive sectoral surveys may be useful in this connection.

Nevertheless, short and medium term projections can be made on the basis of properly estimated sectoral value added (or investment)labour ratios and a proper sectoral mix of the economy.

It should be pointed out that in Pakistan the value added per head has not been estimated from production functions and as such it represent budgetary relationships. Similarly, it is not sure if the sectoral mix used is optimal. From the economic point of view, the methods used are extremely crude. It is suggested that future work on short and medium projections must be based on meaningful relationships between the sectoral value added (or investment) and employment.

For the purposes of making long-term projections of manpower requirements, one needs a proper bench mark, labour productivity coefficients and their behaviour patterns, and a proper sectoral distribution of the economy.

As to the bench marks used, most research workers make use of the 1961 Census (Volume 4). It may be noted, however, that the 1961 Census may not be the most reliable source for succh information but due to the fact that it is

the only comprehensive source available, research workers have tended to use it. Even if we assume that the Census information is correct, one should be reluctent to use it for long term projections, because the Pakistan economy, prior to the Census, made progress under defective policies causing a misallocation of resources. For example, in the manufacturing sector the development took place under policies of high tarrif and other kinds of protection, overvaluation of the rupee, cheap capital and subsidies of many kinds. Furthermore, the industries have been operating under market conditions which lack competition. In the field of agriculture also, prices of various inputs and outputs were distorted through Government policies in such a way that they failed to reflect the relative resource scarcities.

Thus, under a general policy of non-uniform protection and distorted input and output prices, the output and input mix in the production process were bound to be non-optimal. The types of economic activities, the intensity of labour use and the skill and educational mix of the labour force, cannot be regarded as proper in the economic sense. Hence, to use the 1961 observed employment pattern as a bench mark is not very sound. The bench marks used for long-term projections must be related to optimal resource use, because it is likely that during the next 20 years or so, one should expect the economic policies to be more rational. Even if such policy adjustments do not take place in reality, the research workers should assume such adjustments in order to show the alternatives.

Mr. Ruud is conscious of the non-optimal nature of the bench mark used. But be solves the non-optimality and other problems by estimating the sectoral employment with the help of Sabolo's inter-country model and by adjusting projections by the difference btween the model estimates and the actual observations in the bench mark year. The correction is extended to the whole of the projection period, i.e. 1970-90. This implies that after recognising that something is wrong with the bench mark data, he identified the degree of error by the standards of Sabolo's

intercountry model, and made a correction on the assumption that whatever the degree of correction necessary in 1961 it will be sufficient for the next 30 years. Ignoring the fact that the bench mark is non-optimal and may have statistical deviation from the model estimates, the use of Sabolo's intercountry model is not proper for determining the degree of correction required in the bench mark. The assumption of a constant correction factor is a very strong one. We think that the corrections made by Mr. Ruud are not very meaningful since the method of projecting cannot shed light on the optimality of the various projections. Even if there were no difference between the observed employment in the bench mark year 1961 and the model estimates, nothing could be said about the optimality of the bench mark. The model estimates are some kind of average results observed within an intercountry model and, as such they are not optimal in any sense.

Regarding the actual method adopted by Mr. Ruud for projecting long-term manpower requirements, one needs i) a proper bench mark, ii) marginal value added-labour ratios or investment-labour ratios, iii) the long-term behaviour of ii), and iv) a proper sectoral distribution of the economy.

Mr. Ruud solves the problems of obtaining ii), iii) and iv) by borrowing the estimated employment pattern functions from a 40-country model. According to Mr. Ruud the intercountry model includes developed and developing countries and the estimated employment pattern is thought to be relevant to the Pakistan economy.

In the first instance, it should be noted that Mr. Ruud is not quite right in assuming that the intercountry model is relevant for Pakistan, because the countries included in the model have an average per capita income of $ 748, with a range of $ 109 to $ 2295. It is obvious that countries like Pakistan which have an average per capita income of about $ 70(at 1960-61 price level) are not included in the model, since countries with per capita income under $ 100 are altogether missing. Countries with per capita income between $ 100 and $ 150 are six in number which is only 15 per cent of the whole sample (Table II).

Thus,it can be said that countries like Pakistan, as judged by the per capita income level, are very few in the model and that the results of the model cannot be regarded as reflective of the structural changes which we are looking for.

Another point worth noting is that the population in these countries, with the exception of the United States, seldom exceeds 60 million; whereas Pakistan's population at present is over 120 million. Thus the intercountry model includes very few countries which have per capita income and population size close to Pakistan's. In our opinion, the model is not a relevant one and its results could be misleading in indicating the employment pattern and its behaviour for a country like Pakistan which aspires to triple its present per capita income of $70 in the next 20 years, and will have a population of over 210 million by then.

It could be argued, however,that although the model does not include many countries like Pakistan, the estimated relationships can be used to predict the relative employment pattern in the context of a growing economy like Pakistan. This argument needs serious scrutiny, because the proficiency of a model to predict always depends on certain fundamental assumptions. To illustrate the point, the model under discussion has the following estimated functions for the relative employment in the agricultural and manufacturing sectors, respectively:

$$\log \frac{100\ E_o}{N} = 1.783 - 0.106\ (\log Y/N)^2 \quad \text{.....(1)}$$

$$\log \frac{100\ E_{2-3}}{N} = -0.014 + 0.105(\log Y/N)^2 \quad \text{.....(2)}$$

Now supposing that there are two countries, namely, Country "A" and 'B', each having a per capita income of $100, but the population in Country 'B' is 120 million against a population of 20 million in Country 'A'. If Equation 1 & 2 of Sabolo's model are applied, it is obvious that the employment in the agricultural and manufacturing sectors as a percentage of the population will be the same in both countries. But in absolute numbers the employment

in both sectors in Country 'B' will be much larger than in Country 'A'.

The question arises as to the implications of larger employment in both the sectors of country'B' in terms of its feasibility. It is obvious that larger employment in the manufacturing sector means larger production facilities in the same sector. It is quite conceiveable, in view of the nature of manufacturing activities, that at a given level of per capita income more persons can be absorbed in the sector by just increasing the number of production units. This amounts to a horizontal expansion of the sector. There will be implications of such expansion for the supply of and demand for the inputs and outputs of the manufacturing sectors, but the possibilities of international trade and the reproduceable nature of the inputs used make us feel that a substantial horizontal expansion is feasible.

In the case of the agricultural sector, horizontal expansion is not always feasible because one of the main inputs is land, which can be augmented but not reproduced. Thus, a substantial horizontal expansion can only take place if the agricultural resource endowment permits. A country like Pakistan, which has almost 3 to 4 times the population of most countries included in Sabolo's model and one of the lowest land-man ratios, cannot achieve substantial horizontal expansion in a short time (Table V). It is true that by substituting capital for land horizontal expansion becomes easy; but, given the fact that Country 'A' and 'B' both have the same per capita income, one wonders as to the source of supply of physical and human capital. The supply of capital can come from other sectors, but it would affect the expansion of those sectors. Foreign sources of supply can help to solve the problems, but the magnitude in the case of Pakistan is such that one can never be sure of a smooth and substantial horizontal expansion in the agricultural sector to the extent the inter-country model implies.

We feel that Pakistan belongs to a unique group of countries which have low per capita income and very large populations compared to the developing countries of Western

Europe, Africa and Latin America. Proper models can only be built on the basis of the growth experience of countries which are similar to Pakistan. This does not seem possible at this stage.

Regarding, the agricultural sector, we would like to point out another irregularity in the application of Sabolo's model by Mr. Ruud. The model gives a separate and extensive treatment to the employment problems in the agricultural sector. He notes that up to a certain level of development the relative employment in the agricultural sector does not decrease as indicated by Equation (1). Sabolo's Equation (1) only applies to those countries where, with economic development, the relative employment in the agricultural sector begins to decline. Mr. Ruud, without investigating whether Pakistan has reached such a stage or not, applied Equation (1) in order to estimate the relative employment in the agricultural sector. This, we think, is a short-cut to avoid the problems involved in projecting the manpower requirements of this sector.

A fundamental issue should be raised about the production relationships implied under Sabolo's model. The model is developed on the lines of Chenery's study on the patterns of industrial growth which is based on the basic relationship:

$$V_i = f\ (Y, N) \qquad \ldots\ldots.(11)$$

where,

V_i = value added in the i th sector

Y = per capita income

N = population

Concentrating on manufacturing, construction and a few other sectors Chenery found that the sectoral distribution of national product changes with economic growth, generating certain common, distinct patterns within the inter-country models due to the common universal factors like tastes, technology and prices of internationally tradeable goods.

Sabolo argues that if the sectoral distribution of product changes with economic growth then the sectoral patterns of employment should also change, even if the sectoral labour productivity remains constant. In fact the sectoral labour productivity also changes, further adding to the changes in the sectoral patterns of employment. Thus, he converts the sectoral relationships under (11) into:

$$\frac{E_j}{L} = f_j \ (Y,N) \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (12)$$

where,

E_j = Employment in sector j

L = Total labour force.

It should be noted that, whereas Sabolo recognizes per capita income growth and changes in labour productivity as the main factors influencing the sectoral patterns of employment, he confines himself to the Chenery type model in which changes in labour productivity are not very important. Moreover, Chenery's model is based on a Keynsian type analysis rather than on production functions, which is quite satisfactory in the context of the problem Chenery is analysing. But in the kind of problem Sabolo is analysing production relationships become very important.

Sabolo, instead of using the definition of relative sectoral employment under (12), has used employment as a percentage of population as shown in the following

$$\frac{E_j}{N} = f_j \ (Y) \quad \ldots\ldots\ldots\ldots\ldots\ldots (13)$$

The reason given for using the definition of relative sectoral employment under (13) instead of that under (12) is the lack of data on labour force. But this switch over from $\frac{E_j}{L}$ to $\frac{E_j}{N}$ complicates the problem because the participation rates do not bear a distinct and stable relationship with per capita income. Since Sabolo defined

the employment pattern in terms of sectoral employment as a percentage of population, Mr. Ruud was able to estimate absolute as well as relative employment in Pakistan. But, as pointed out earlier, countries like Pakistan having large populations and low per capita incomes may be suffering from peculiar problems like under-employment.

There are problems in defining as well as measuring underemployment, but we feel that the problem is to vital and of such magnitude that some sort of definition and measurement should be attempted. For illustrative purposes, we attempt to provide in Section V a conceptual and estimation framework covering the decade for which data on rural population are easily available, i.e., 1951-61.

Objections similar to the ones mentioned above can be raised against the professional work done in connection with the long-term projections of occupational pattern and educational levels.

Mr. Ruud and others have used the population Census information as the bench mark. As pointed earlier, due to the government policies and other factors distorting the price of inputs and outputs of most economic activities, the skill and educational level mix cannot be expected to be optimal. Furthermore, the process of industrialization and agricultural development started in the 1950's, but during that period manpower with the necessary education and skills was in extremely short supply due to the inherited initial endowment in this respect. Thus, in the light of the poor initial endowment of skilled and educated manpower coupled with a high protection to the industrial activities and distorted prices, the educational and skill mix is non-optimal.

The non-optimality of the educational and skill mix of manpower can be illustrated by the fact that in 1961 78 per cent of all matriculates and about 87 per cent of all degree holders were employed in the service sector, including public service, trade and utilities (Table IV). This means a virtual starvation of the productive sectors.

Mr. Ruud and others have not made sufficient adjustments to make the bench mark optimal.

Similar objections can be raised against the coefficients and models used for long term projections. Pakistan is a poor country with an extreme scarcity of capital and natural resources. Economic development can only be accelerated by making investment in physical and human capital. The factor proportions are such that Pakistan, like Japan, has to make much more use of human capital compared to the other developing countries of Africa and South America. The intercountry model used by the Netherlands Economic Institute (15) is not a proper guide to the estimated coefficients for projecting educational levels. On the basis of these remarks it can be concluded that the occupational and educational level projections made in Pakistan are not very sound.

V. ESTIMATING UNDEREMPLOYMENT IN THE AGRICULTURAL SECTOR: CHANGES DURING 1951-61.

In the conventional theory underemployment is supposed to exist when the marginal productivity of labour (MPL) is zero, or positive but less than the institutional wage rate. Under this concept the measurement of underemployment is extremely difficult because, as the population grows faster than the employment opportunities in the agricultural sector and outside it, the surplus working age population gets absorbed (disguised) in the same sector and in other sectors. This absorption can take place in the form of i) reduced intensity of labour to provide room for the surplus working population, ii) reduced productivity of labour, iii) increased cultural and social activities, and iv) a movement towards cities for regular/irregular work. It may be noted that underemployment can take any one or more of the above forms, and with observed data it would be very difficult to find out if the MPL is zero in a sector stricken with underemployment. But if we accept the possibility that surplus working age population can mostly be found in the form of disguised unemployment rather than open unemployment in the subsistence agricultural sector, than we must measure the extent of underemployment

over time. Since censuses of population are available for the years 1951 and 1961, it is proposed to use these points of time for comparison purposes.

East Pakistan:

Let us start with the case of East Pakistan, which is much more simple for measurement purposes. The rural population in 1961 was 48.20 million as compared to 40.11 million in 1951 (6,p.11-16). This implies an increase of 20 per cent (8.1 million). The relevant question is whether the employment opportunities in the rural sector increased to the extent necessary to absorb the addition to the working age population.

In East Pakistan the main occupation in the rural sector is farming. Employment opportunities can increase only if i) the area under cultivation increases, ii) cropping pattern changes in favour of labour intensive crops, iii) a shift from non-irrigated farming in favour of irrigated farming takes place, and iv) technological changes take place to make farming methods more labour intensive (use of fertilizers, pesticides, high productivity seeds etc.).

During the decade 1951-61, we find that the area under cultivation in the peak farming season (i.e.,March-September during which Aus and Aman rice crops and jute are grown) increased by 5.4 per cent. If other crops of the same season, like sugarcane, tea, cotton, maize and barley, are added then the increase in the area under cultivation comes to 6.3 per cent. If we take the area under cultivation for the whole year, then the increase is about 6 per cent (Table A).

It is common knowledge that the use of fertilizers makes farming more labour intensive. In East Pakistan, by the year 1961, estimated consumption of fertilizers was about 18,700 nutrient tons (5, p.82). We assume that 40 per cent of total fertilizers consumed are applied in the peak farming season (March to September), and if about 28 nutrient lbs. are applied to an acre it results in a 10 per cent increase in labour use. On the basis of these

assumptions, it is estimated that the impact of fertilizer use is equivalent to an addition of 60,000 acres to the area under cultivation. This makes for an increase of 6.1 per cent in the area under peak season cultivation instead of a 5.4 per cent increase.

Thus, it can be said that, in view of the increased area under cultivation and fertilizer use, the labour requirement could have created about 6 per cent more employment opportunities compared to the base year 1951. As noted above the population increased by 2 per cent (8 million), during the decade 1951-61, implying that about 14 per cent of the working age population could not be absorbed. By assuming that the working age population is about 36 per cent of the total rural population (7, p. 97), the estimated underemployment comes to 2.91 million persons.

It may be noted that we have not yet taken into account the employment opportunities which could have been created through more labour intensive technological and other changes. In the context of East Pakistan, we do not find any substantial changes in the cropping pattern (technological changes) which may force us to believe that employment opportunities on these counts increased very much during the decade 1951-61.

Now the next question is that the estimated underemployment of 2.91 million persons could have been reduced by a movement towards other activities in the same or other sector. Our definition of the underemployment concept is based on the 1951 structure of employment in the rural sector and also assumes the 1951 technology. If there is a change either in the pattern of employment or technology resulting in the creation of more employment opportunities, then we must make some allowance for that. But it seems highly unlikely that such technological and structural changes will take place in the rural sector of the economy. The only outlet is employment in the non-agricultural sector.

In the urban sector there was an increase of 8 million

persons, of which about 30 per cent must be regarded as the working age population. This means an addition of 2.4 million persons in the urban sector. In the light of the industrial and other developments that took place during the decade 1951-61, it seems highly unlikely that employment opportunities could have grown so substantially as to absorb more than 2.4 million persons. Thus, one can safely say that approximately 2.9 million underemployed persons of working age, as estimated above, were added to the rural sector of East Pakistan. It may also be noted that this estimate of underemployment relates only to an increment in the 1931 level. In actual fact, the extent of underemployment could be higher than this number, depending on the degree of underemployment in the bench mark year of 1951.

West Pakistan:

A similar exercise was done for West Pakistan where the area under cultivation during the peak farming season (i.e., Kharif) increased by 13 per cent. Added to this is the impact of fertilizer use and expansion in irrigation facilities. If both of them are taken into account when the acreage increase comes to 16.0 per cent (Table B). In addition, the cropping pattern changed in favour of more labour-intensive crops like rice and sugarcane. If we make an allowance for the changes in the cropping pattern and assume that the cultivation of rice and sugarcane is about 25 per cent more labour intensive than the cultivation of other crops like maize, cotton, jowar and barley, then the acreage increase comes to 18.0 per cent. There was also a modest increase in crop yields, for which we raise the area increase by 15 per cent , which will make the acerage increase around 20 per cent. This means that employment opportunities increased by 20 per cent whereas the rural population increased by 19.3 per cent. This implies the possibility that the agricultural sector expanded to an extent which could absorb the increase in the rural population.

Institutional factors, like private holdings, lack of mobility, lack of information about employment opportunities

and, in many cases, considerations of private profitability, may reduce the possibility of absorbing the additional population in the expansion of aggregate employment opportunities. In reality many bottlenecks will prevent the underemployed and unemployed persons from being absorbed in areas where employment opportunities are growing relatively faster. This kind of possibility is very much expected in West Pakistan where areas experiencing expansion in acreage, irrigation facilities, the use of fertilizers and changes in the cropping pattern, may have less population per acre. The phenomenon will result in the use of tractors and other machinery, because family labour may not be sufficient on farms where technology and inputs requiring more labour are being used.

In the light of these possibilities, one should be cautious to conclude on the basis of our estimates that underemployment did not increase in West Pakistan during the decade 1951-61. In fact, due to the institutional and other obstacles mentioned above, underemployment can exist in some areas side by side with labour shortage in certain other areas.

VI. SOME SUGGESTIONS FOR IMPROVEMENT IN METHODOLOGY

The first and foremost step is to begin with a proper bench mark. It is obvious that the 1961 Census information cannot be used as a proper bench mark. Thus, there are two alternatives: i) that the 1961 Census information should be substantially improved and adjusted for serving as a sound basis, and ii) that new information should be collected/generated in such a way that it could become a proper bench mark. Since the next Census of population is due in less than a year's time, it may be a good idea to wait a little while and collect most of the necessary information on labour force, occupations, educational and skill mix in the economy. This information should be further verified by conducting Censuses or partial surveys for the various sectors and sub-sectors of the economy.

In order to make the 1961 or any other bench mark

optimal the crucial question is what the employment situation would be if price of inputs or outputs reflected the relative scarcity of resources, and technological alternatives were sufficiently rich to suit the social objectives of the society and the resources endowment of the economy. These questions are difficult to answer, but what we can do is to identify substantial discrepancies between the situation in Pakistan and what should have been the question if proper prices and technological alternatives were effective.

Many improvements can be introduced by proper international comparisons. For example, let us make the employment situation in the textile industry of Pakistan. It is expected that the industry will compete in the international market and create as much employment as possible and desirable under the objectives of growth and distribution of income laid down. This means that the textile industry should be as efficient as the leading textile exporting countries of the world, and also create employment consistent with its resource situation and economic objectives. For the purposes of efficiency we can perhaps use the factor mix, i.e., capital-labour ratio,output-labour ratio and educational and skill mix prevailing in the leading textile exporting countries as a guidline. Supposing there is more than one textile exporting countries with which we have to compete, then we should choose that country which has a resource endowment more like that of Pakistan. In other words, if the choice is between USA and Japan, we would choose Japan for guidance. Further adjustments can be made to allow for the differences in factor prices, technological possibilities and social objectives. It must be kept in mind that it is not easy to improve upon the information collected on the basis of observed data when the employment situation, in terms of relative factor intensities and in terms of educational and skill mix, is non-optimal.

One of the obstacles to arriving at the nature and degree of adjustments is the fact that economic development is taking place in Pakistan with borrowed modern technologies and distorted prices. Countries like Pakistan have not made a conscious effort to develops the technological alternatives suitable for the economy, and pricing and other policies

have been such that market forces have not forced the producers to move towards suitable technologies. Maximum efforts should be made to indicate the direction and magnitude of the adjustment required. In connection with the educational and skill requirements, suitable international comparisons would be helpful. As pointed out earlier, the productive sectors are hopelessly short of educated and skilled manpower. The less intensive use of educated and skilled manpower may have led to (or have keen forced by) the excessive use of capital (14). If attention is given to the factor endowment and the supply conditions of various resources, one reaches the conclusion that we should have been using more labour and human capital relative to physical capital. A.R. Khan's study (14) has shown that capital intensity in the manufacturing sector is quite high in Pakistan compared to many other countries. It is obvious that, both in terms of the intensity of labour use and of the educational and skill levels, the manufacturing sector of Pakistan has behaved contrary to the optimal pattern. We believe that in the context of projecting demand for educated and trained manpower, the bench mark must be adjusted before venturing into long-term projections. Similar problems exist for the agricultural and service sectors.

After making proper corrections in the bench mark, one needs a basis for projecting manpower requirements. There are three alternatives left to solve the problem:

i) Another inter-country model should be built on the basis of production relationships and by including countries which have per capita income, population and resource endowment similar to Pakistan. But this seems extremely difficult as growth experience of countries like Pakistan is not available either over time or at the cross-sectional level, or

ii) the other alternative is to build models about Pakistan itself in which one could project the sectoral distribution on the principles of consistency and optimization; and on the basis of the sectorwise marginal value added per

worker and its possible future behaviour long-term projections of requirements can be made. Such models are badly needed, and with some conscious and extra efforts they can be built for Pakistan. Mr. Ruud made projections for a 30 year period. It may not be possible to develop the kind of models suggested under (ii) for such a long period. As a solution, the period for projections can be cut to 10-15 years which is quite sufficient to bring about changes in the demand for manpower.

iii) Still another alternative is to give up the idea of building models for the whole economy and to deal with certain sectors individually in the framework of an overall production model.

We prefer this approach (iii) due to its workability and reasonably sound nature. Brief details are in the following:

a) Projections of working age urban population should be made in order to compute the increase over the bench mark.

b) Estimates of employment opportunities should be made in the non-agricultural sectors like manufacturing, construction, transport and communications, trade and other services, etc. For these sectors facts like value-added (investment) - labour ratios, etc., can be collected and once a proper sectoral distribution is available, estimates of employment opportunities are possible.

c) Compare (a) with (b) and if we find (b) to exceed (a), then the non-agricultural sectors can absorb working age population other than (a).

d) Projections of working age rural population should be made in order to compute the increase over the bench mark.

e) Balance of (b) - (a) should be deducted from (d). This will indicate the manpower to be absorbed in the agricultural sector.

f) Taking the same bench mark as under (d), estimates should be made for the increase in employment opportunities over the bench mark from the following sources:

i) increase in the area under cultivation;
ii) changes in the cropping pattern;
iii) changes in the techniques of production;
iv) changes in the inputs used (i.e., seeds, fertilizers, water, pesticide machines etc.); and
v) changes in crop yields.

The information needed for i) - v) could be easily available from the observed data and specially designed surveys.

g) On the basis of e) and f) estimates can be made on the magnitude of working age rural population that remains unabsorbed.

h) Adjustments should be made in g) for the institutional and other obstacles in the way of mobility and absorption of the available manpower in the farming activities.

This will provide the estimated surplus of working age population that remains unabsorbed at the bench mark level of living. But through time the level of living of the population must rise, which means that the productivity of labour must be higher than the bench mark level. For this another adjustment is needed which will raise the extent of surplus.

i) If under h) a surplus of working age population is available, then estimates should be made about the expansion of other employment opportunities in the rural sector i.e., livestock, forestry, cottage industry, education, health, etc.

This comparison will give us the extent of unemployment and underemployment in the economy. Focussing on the outcome, development efforts should be made to minimise the extent of unemployment and underemployment.

In Pakistan the exercise should be done on a regional and broad sectoral basis: distinction between the agricultural and non-agricultural sectors is essential. The other important aspect of manpower projections is the educational and skill mix of manpower. For this we believe that proper international comparisons coupled with information on the intersectoral and subsectoral patterns within Pakistan can help a great deal.

The kind of projections made by Mr. Ruud which extend to thirty years are unnecessary and hardly satisfactory. We should go along with Dr. Hufbauer's suggestions (7, 14-18) that by keeping trace of what happens to the graduates of our universities and colleges in terms of employment, one can identify the areas of manpower surplus and shortage, so far as the educated personnel is concerned. Similar surveys and other sources of information can help us to identify the other areas of serious shortages for skilled manpower. On the basis of such information we can adjust our educational and training programmes in a way that shortages are removed and surpluses are reduced. It makes no sense to project how many graduates will be needed unless we know the degree of shortage/surplus by type of graduates. Thus the approach should be pragmatic in this connection, specially when requirements cannot be projected on the basis of available information and the possibilities of substitution exist for the various types of educated and trained manpower.

VII. POLICY PROBLEMS: SOME OBSERVATIONS AND SUGGESTIONS

In this part we would like to make some observations on the employment situation in the country. It is well known that there exists a high degree of underemployment in the agricultural sector and some of the service sectors. Open unemployment exists in some cities, and takes the shape of landless labour in the rural areas.

The other main problem is the surplus of the educated young who, after coming out of colleges and universities, expect to be absorbed in the economy but fail to find suit-

able jobs. On the other hand, there are serious shortages of certain skills and types of education which the educational system has not been able to remove. Thus the main problems of Pakistan are underemployment and unemployment of unskilled workers and serious surpluses and shortages for the educated and skilled manpower.

In order to solve these problems, concerted efforts must be made in the agricultural sector which is the largest employment creating sector and will remain so far a couple of decades to come. This can only be done if proper price policies are adopted and technological alternatives broadened. The present policies of subsidizing inputs like capital must cease and, instead, encouragement through price and other policies be provided to the use of labour to a greater extent. It can be helped by extending irrigation facilities and changing the cropping pattern in favour of labour-intensive crops whereever it is socially profitable. It is important to increase the area under cultivation through increasing the intensity of cultivation as well as by bringing new lands under cultivation. Water is an extremely scarce resource in agriculture. By making a proper and fuller use of water, cultivable land resources can be increased in the short-run. The next area of attack should be to discourage the use of machinery which displaces labour relatively more than it raises productivity in the agricultural sector. Policies designed to bring private profitability closer to social profitability will help a great deal in creating employment opportunities. Policies should also be designed to increase the mobility of farmers and farm-labour within Pakistan. The break up of one unit should not result in another obstacle to the mobility of farmers.

There are two other subsectors in the agricultural sector which need special attention. Firstly, the development of livestock and poultry in areas where cultivation of crops is not a very attractive alternative. This can help to generate income as well as employment. Secondly, the service sector in the rural areas provides a substantial potential for creating employment opportunities. The

most important service subsectors are transport and communication, storage and marketing of agricultural produce, health, education, extension service, law and order, repair and maintenance of capital etc. The development of these services will require a large number of skilled and semi-skilled workers. It is our belief that on enormous capacity to absorb educated and skilled manpower exists in the above mentioned sub-sectors. At present the agricultural sector is making very little use of educated and skilled manpower.

It is to be emphasized that the success in solving employment problem will only come through the success in creating employment opportunities in the agricultural sector over the next 1-2 decades. In the non-agricultural sectors, employment opportunities can be created by further growth of the manufacturing sector, services, trade and utility sectors. It is well known that due to the nature and rigidity of modern technology, employment opportunities in the large-scale manufacturing sector cannot be created to an extent sufficient to solve the employment problem. Uptil now, direct employment created in the large-scale manufacturing sector does not exceed 2 million persons. It is almost unimaginable that most of the unemployed can be absorbed in this sector. The expansion and rationalization of this sector can, however, help to create enormous employment opportunities for the educated and skilled manpower. In order to achieve it, policies should be adopted to improve efficiency and competition within the manufacturing sector. This can be achieved by reducing and rationalizing the level of protection given to industry, and by introducing competition through open imports or through concentrating on a few industries. The price policies should also be adjusted to make the market prices for inputs reflect relative social scarcities. Outside the large-scale manufacturing sector substantial employment opportunities can be created in the small-scale and cottage industries. Special attention should be paid to the development of such industries, and obstacles like the lack of technical know-how and credit facilities should be removed. In the service sectors like transport, communications, trade, utilities etc., efforts should be made to create employment opportunities. This can be done again by adopting proper price policies and by

making efforts to adopt labour intensive technologies. In the field of transport such efforts are urgently needed.

Among the service sectors the most neglected one has been the social sector: education and health. Efforts should be made to extend education and health facilities whereever they are needed. Such services are badly needed in the rural areas. It is needless to say that there is a great need for adjustment and re-orientation in the education and health systems.

At the end, we would like to make a few observations on the two important policies adopted by the Martial Law Government in the recent past, namely, the education policy and the labour policy. The education policy as adopted by the government is designed to improve and extend the educational facilities to the nation. We believe that the extension of education and training facilities as envisaged in the policy is more or less satisfactory. The improvements in the educational facilities, however, have not been up to the mark. There is a great need to increase the investment component of education directly related to production. It is the necessity of the day that our educational system should stop producing products which are not needed by the economy. Instead the education system should be geared to make its products more productive and suitable in the kind of envorinment in which they are going to live and work. We wish that the New Education Policy will succeed in producing more productive people and will eliminate wastes from the educational system.

The other important policy which will affect the future growth of the economy and the employment situation in the country is the New Labour Policy. Among other things, one of the important features of the New Labour Policy is the minimum wage legislation introduced in the large-scale manufacturing sector. The minimum wage level has been determined in relation to a desired subsistence level for the unskilled workers. The fact remains that the level of minimum wages has been fixed above the market wage rate as well as the opportunity cost of labour in the non-manufacturing sectors. The net results of the legislation are,

obviously, to discourage the use of labour as an input. This is contrary to what we would like to see in order to solve the employment problems of Pakistan. This can, however, be prevented by raising the price of other inputs so that they reflect the social scarcities, and by compensating employers for the excess of minimum wage over the shadow price of labour. These steps have not been undertaken so far and the New Labour Policy, as such, is adversely affecting the employment situation in the country. It is hoped that more serious attention will be given to this issue and proper policies will be designed to encourage an optimal use of all the factors of production.

There is no guarantee that if proper policies are followed all the manpower in the working age group will be gainfully absorbed in the economy as technological possibilities are a serious constraint on the full absorption of available manpower.

The existing technology in most of the countries has been developed in the light of the factor endowments in those countries. Countries like Pakistan, China and India are unique in the sense of having a very large population. It is important that efforts should be made to develop technological alternatives which will allow the absorption of available manpower into gainful employment. It is on this front that Pakistan should make the maximum effort. Suitable technological alternatives are of great immediate importance in the agricultural sector. It may be a good idea for Pakistan to collaborate with other countries which have a large population in developing suitable technologies. It is our belief that in the long run our success in solving employment problems depends on our success in adopting proper price and other policies and in developing technological alternatives consistent with our resource endowments and social objectives.

STATISTICAL APPENDIX

TABLE I

TOTAL OUTPUT, EMPLOYMENT, AND OUTPUT PER WORKER IN PAKISTAN, 1950-51 AND 1960-61.

Sector	1950-51			1960-61			1950-51 - 1960-61
	Gross Value Added (Million 1960-61 Rs.)	No. of persons Employed (000)	Output per Worker (1960-61 Rs.)	Gross Value Added (Million 1960-61 Rs.)	No. of Persons Employed (000)	Output per Worker (1960-61 Rs.)	Labour Productivity Trend (Average Annual Rate)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Agriculture	16,140	17,124.7	942	18,465	22,644.5	815	Decline 1.4
Mfg.& Mining	1,605	1,409.4	1,122	3,307	2,477.2	1,335	1.8
Construction	240	180.0	1,333	804	346.6	2,320	5.7
Transportation	1,337	314.0	4,258	2,094	523.9	3,997	Decline 0.6
Trade, Utilities, and Services (including Public)	5,564	2,474.9	2,243	8,175	3,962.1	2,063	Decline 0.9
Gross Domestic Prod.	24,886	21,524.0	1,156	32,845	30,206.0	1,087	Decline 0.6

Notes: Exclusive of rents and other revenue from lease of housing and real estate
Columns 2 & 5: C.S.O. New Series in 1959-60 Prices on National Accounts converted to 1960-61 prices.
Columns 3 & 6: Employment by sector from the 1951 and 1961 Censuses of Population
Column : Computed from (4) and (7)

Source : DeWitt, N."Pakistan's High Level Manpower And Human Resource Development Planning", A Report Submitted to U.S.A.I.D./Pakistan. Mimeographed. Feb.1965,pp. 14-16.

TABLE II

DATA FOR SABOLO'S INTER-COUNTRY ANALYSIS

Country	Year	Per Capita Income	Per Capita Investment
Morocco	1960	137	16
Mauritlus	1963	215	45
Barbados	1960	119	86
Canada	1961	1,844	472
Costa Rica	1963	266	40
Chile	1960	471	59
Equador	1962	186	27
Honduras	1961	356	25
Jamaica	1960	402	90
Panama	1960	361	66
Peru	1961	183	38
Puerto Rico	1960	749	176
El Salvador	1961	136	21
Trinidad	1960	554	164
United States	1960	2,295	477
Uruguay	1963	558	78
Venezuela	1961	633	131
Cyprus	1960	481	93
Israel	1961	1,120	417
Japan	1960	404	173
Jordan	1961	195	32
Philippines	1960	109	14
Korea	1960	120	16
Thailand	1960	126	19
Austria	1961	923	228
Belgium	1961	1,212	244
Denmark	1960	1,611	326
Spain	1960	365	82
Finland	1960	847	227
France	1962	1,825	374
Germany (F.R.)	1961	1,889	457
Greece	1961	364	101
Ireland	1961	766	142
Italy	1961	885	248
Luxembourg	1960	1,535	388

continued....

Country	Year	Per Capita Income	Per Capita Investment
Norway	1960	1,487	499
Netherlands	1960	1,267	325
Portugal	1960	318	59
Turkey	1960	259	39
United Kingdom	1961	1,505	276
Australia	1961	1,580	407
Average		747.75	175.53

Source: Sabolo, Yves, "Sectoral Growth of Employment" Mimeographed, ILO, Geneva 1968.

TABLE III

NON-AGRICULTURAL LABOUR FORCE IN PAKISTAN 1961

(10 years & above) By Industry
Group and Education Levels

Industry Sectors	Total (000)	High Level Manpower per 1000 Employees	
		Matrics	Degree Holders
(1)	(2)	(3)	(4)
Total Non-Agri Labour	7,764.2	67.5	13.2
Agri., Forestory & Fisheries	202.7	9.4	Negligible
Mining	23.0	52.2	8.6
Manufacturing	2,454.2	23.4	2.8
Construction	346.2	27.9	4.6
Transportation and Communications	523.9	75.8	7.4
Public Utilities	35.5	194.4	19.7
Trade	1,447.2	43.3	4.1
Finance & Insurance	27.3	461.5	128.2
Services (Total)	2,452.1	122.5	31.4
Education)	216.7	345.6	117.8
Health)	101.1	237.4	50.4
Religion/Arts)	96.4	70.5	19.7
Post & Telegraph)	39.8	366.8	32.6
Govt. Management)	421.4	280.5	64.1
Personal Services)	1,204.8	4.6	Negligible
Others, Defence)	363.7	134.5	42.6
Not working, but looking for work	251.8	125.9	10.3

Source: DeWitt, N.,"Pakistan's High Level Manpower And Human Resource Development Planning," Report Submitted to U.S.A.I.D./ Pakistan, Feb'65.

TABLE IV

WEST PAKISTAN AVERAGE AND MARGINAL PRODUCT PER EMPLOYED WORKER IN MAJOR SECTORS, 1951-65

Sector	Average Value Added at 1959-60 Prices					
	1951	1955	1959	1961	1963/64	1965
Agriculture	903	990	971	858	891	911
Mining	3,364	2,526	16,750	2,700	7,533	6,400
Manufacturing	938	850	986	1,136	1,442	1,381
Construction	3,339	553	1,070	2,047	3,817	1,969
Public Utilities	1,261	1,600	2,200	3,300	2,491	9,250
Transport & Communication	4,850	2,746	2,631	2,695	3,479	1,756
Trade	1,993	1,680	1,352	2,181	2,361	2,062
Services (Excluding Defence)	1,460	951	1,167	1,071	1,150	1,555
Total	1,078	1,091	1,133	1,139	1,254	1,261

Source: Hufbauer, Gary C., "West Pakistan Employment and Manpower", Occasional Paper No.9, Planning and Development Department, Government of West Pakistan, Lahore. Sept.1969, p.5-6.

TABLE V

LAND RESOURCE AND POPULATION FOR SELECTED COUNTRIES

	Country		Agricultural Land (000 Hectares) Arable Land & Land Under Permanent Crop.	Permanent Meadows & Pastures	Forested Land	Total (2)+(3)+(4)	Population (000) (1967)	Agricultural Land per person (Hectares)
	1		2	3	4	5	6	7
	Morocco	(1966)	7,858	7,650	5,337	20,845	14,140	1.47
	Maruitius	(1966)	92	28	45	165	794	0.21
1960	Barbados	(1960)	26	4	-	30	249	0.12
	Canada	(1966)	43,404	20,957	443,094	507,455	20,441	24.83
1963	Costa Rica	(1963)	622	923	2,981	4,526	1,580	2.86
	Chile	(1965)	4,511	10,083	20,686	35,280	8,970	3.93
	Equador	(1964)	2,894	2,200	14,845	19,939	5,508	3.62
	Honduras	(1963)	823	3,413	3,019	7,255	2,445	2.97
	Jamaica	(1965)	241	247	208	696	1,876	0.37
	Panama	(1961)	564	831	6,092	7,487	1,329	5.63
	Peru	(1965)	2,701	27,330	87,000	117,031	12,385	9.45
	Puerto Rico	(1966)	267	314	118	699	2,697	0.26
	El-Salvador	(1961)	648	604	226	1,478	3,151	0.47
	Tobago & Trinidad	(1963)	139	6	232	377	1,010	0.37
	United States	(1964)	176,440	259,173	296,135	731,748	199,118	3.67
	Uruguary	(1961)	2,252	13,847	593	16,692	2,783	5.99

continued....

1		2	3	4	5	6	7
Venezuela	(1961)	5,219	16,706	47,970	69,895	9,910	7.05
Cyprus	(1966)	432	93	171	696	614	1.13
Isreal	(1967)	411	822	101	1,334	2,669	0.50
Japan	(1967)	5,753	948	25,558	32,259	99,920	0.32
Jordan	(1965)	1,140	212	67	1,419	2,080	0.68
Philipines	(1966)	8,330	2,988	14,6[illegible]3	25,921	34,656	0.75
Korea,Rep.of	(1967)	2,312	6,618	6,616	8,946	29,930	0.38
Thailand	(1965)	11,415	-	27,354	38,769	32,680	1.19
Austria	(1967)	1,670	2,257	3,225	7,152	7,323	0.98
Belgium	(1967)	895	739	601	2,235	9,581	0.23
Denmark	(1967)	2,700	323	472	3,495	4,819	0.72
Spain	(1967)	20,482	13,707	11,240	45,429	32,140	1.41
Finland	(1967)	2,760	91	21,761	24,612	4,664	5.28
France	(1966)	20,214	13,632	12,714	46,560	49,866	0.93
Germany (F.R.)	(1967)	8,185	5,797	7,178	21,160	57,699	0.37
Greece	(1966)	3,851	5,239	2,608	11,698	8,716	1.34
Ireland	(1967)	1,194	3,589	194	4,977	2,899	1.72
Italy	(1967)	15,213	5,166	6,107	26,486	52,334	0.51
Luxemburg	(1967)	66	67	86	219	335	0.65
Norway	(1967)	845	145	7,026	8,026	3,785	2.12
Netherlands	(1967)	922	1,317	294	2,533	12,598	0.20

continued....

1		2.	3	4	5	6	7
Portugal	(1963)	4,370	530	2,500	7,400	9,442	0.78
Turkey	(1967)	26,250	26,135	12,578	64,963	32,710	1.99
United Kingdom	(1967)	7,416	12,127	1,790	21,333	55,068	0.39
Australia	(1966)	39,797	447,208	35,151	522,156	11,751	44.44
Pakistan	(1965)	28,214	-	4,185	32,399	120,185	0.27
India	(1965)	162,434	14,809	61,170	238,413	511,625	0.47
Ceylon	(1967)	1,875	13	3,325	5,213	11,701	0.45
Indonesia	(1954)	17,681	-	90,825	108,506	110,899	0.98

Source: Columns (2) (3) and (4) : F.A.O., Production Year Book.
Column (6) : 1968 Round.
Column (7): (5): (6) : 1969, pp.3-7 and 15-19.

TABLE A

Part I: Area under cultivation (000 acres)

A. Major crops (Whole year):

	1950-51		1960-61	
	3-years average	% of Total	3-years average	% of Total
Rice	19,945	90.31	21,333	90.84
Jute	1,684	7.63	1,651	7.03
Tea	75	0.34	79	0.34
Sugarcane	229	1.04	283	1.20
Maize	11	0.05	17	0.07
Barley	83	0.38	74	0.32
	22,082	100.00	23,483	100.00

Percentage increase in the area under major crops (whole year) = 6.3%

B. Major Crops (Peak Season: March-Nov.)

	1950-51 3-year average	1960-61 3-year average
Rice (Aus)	5,127	6,040
Rice (Aman)	13,995	14,316
Jute	1,684	1,651
Total	20,806	22,007

Percentage increase in the area under major crops (Peak Season) = 5.8%

Part II: Effect of Fertilizer use on Labour Intensity

		Nutrient Tons
i)	Fertilizer consumption 1951 1961	18,700
ii)	Assumed fertilizer use per acre	28 nutrient lbs.
iii)	Assumed fertilizer consumed in the peak Farming Season	40% of (i)
iv)	Assumed increase in labour intensity with fertilizer use under (ii)	10%
v)	Acreage impact compared to 1951 level.	10% (18,700 x 40% x 2240 ÷ 28)= 60,000

TABLE B

Part I: Area under cultivation (000 acres)

A. Major Crops (Kharif season)

	1950-51		1960-61	
	3 years average	% of Total	3 years Average	% of Total
Rice	2294	21.37	2964	24.44
Cotton	3026	28.18	3321	27.38
Sugarcane	492	4.58	1012	8.35
Bajra	2263	21.07	1963	16.18
Maize	965	9.00	1182	9.75
Barley	452	4.21	496	4.09
Jowar	1245	11.59	1190	9.81
	10,737	100.00	12,128	100.00

Percentage increase in the area under major crops (Kharif season) = 13.0%

Part II: Effect of Fertilizer use on labour intensity:

		Nutrient tons
i) Fertilizer consumption	1951	-
	1961	29,400
ii) Assumed fertilizer use per acre		28 nutrient lbs.
iii) Assumed fertilizer consumed in the peak farming season		50% of (i)
iv) Assumed increase in labour intensity with fertilizer use under (ii)		10%
v) Acreage impact compared to 1951 level		10% (29,400 x 50% x 2240 ÷ 28)= 118,000 acres

Part III: Area Irrigated:

		(000 acres)
i)	1950-51	21,409
	1960-61	23,354
ii)	Increase in the irrigated area	1,945
iii)	Kharif season irrigated acreage 2/3 of (iii)	1,204
iv)	Assumed differential of labour intensity on irrigated land	25%
v)	Acreage impact	302

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PROSPECTIVE GROWTH OF NON-AGRICULTURAL EMPLOYMENT IN TURKEY 1972-1982

Merih Celasun

I. Scope and Approach
II. Population, Urbanization and Non-agricultural Labor Force
III. Possible Economic Growth and Demand for Non-agricultural Labor.
IV. Confronting Supply of and Demand for Non-agricultural Labor
V. Possible Evolution of Urban/Rural Income Differentials : Some Crude Estimates
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I. SCOPE AND APPROACH 1/

This paper attempts to examine the outlook for employment in the non-agricultural part of the economy ever the ten year period following the terminal year of the Second Plan (1968-1972), which is currently under implementation. The main aim is to develop a rough perspective on the scale of the non-agricultural unemployment problem in the Third and Fourth Plan periods and the sensitivity of that problem to various hypotheses about future developments as regards the supply of and demand for non-agricultural labor

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1/ The views presented here are those of the author and and not necessarily those of the Turkish State Planning Organization, where he was formerly the Head of the Economic Planning Department.

The employment situation and prospects in the agricultural sector are not considered in the paper, as the peculiar features of agricultural employment require a special pattern for projection studies. In this respect the present study assumes, a priori, that there will not be severe shortages of agricultural manpower in the next decade as a result of the expected pace of rural/urban migration. This assumption appears to be acceptable as a tentative working hypothesis in view of the probable growth of agricultural incomes in 1972-1982 (within the range of 3.2 to 3.7 per cent per annum), the prevalent predominance of rural inhabitants (almost identical with the agricultural population) in the total population (about 68 per cent of the total in 1967), gross underutilization of agricultural manpower during the greater part of the year, and considerable scope for further mechanization in the future. In any case, in seasons when the demand for agricultural labor is high, there will certainly be some temporary inflows of labor from the urban areas, where the unemployment and underemployment ratios will most likely assume increasingly greater proportions. At a later stage, in order to evolve a consistant view of the long-term structure of employment for the entire economy, possible growth in demand for agricultural labor will also have to be assessed on the basis of the projected growth of output and anticipated changes in the technology and composition of production, and be integrated with the labor supply/demand situations and other developments in the non-agricultural sectors.

The employment projections presented here are based, to some extent, on the findings of a series of studies undertaken in early 1969 at the Turkish State Planning Organization (SPO), with the aim of exploring the long-term growth prespects of the Turkish Economy (1972/1982), reassessing the relevant options in development policy, and establishing a generally agreed upon macro economic development perspective with respect to which detailed long-term studies could be designed and carried out for the key sectors of the economy. These macro studies also proved to be useful in providing a broad frame of reference for considering some of the implications and effects (particularly on the future balance of payments structure) of

Turkey's possible entry, in the early 1970's, into the second stage of her association with the European Economic community (EEC), where Turkey is expected to make definitive commitments in the way of liberalizing her trade regime and providing special facilities and concessions towards EEC based imports, while securing in return further advantages for her EEC bound exports.

The employment forecasting (or planning) problem, particularly in less developed areas, is surrounded by a host of still unresolved conceptual, measurement and methodological difficulties such as deficiencies in population and potential labor force data, definition of the minimum duration of work by those who will be considered participants (i.e., members of the labor force), and measurement of labor efficiency for given levels of capital intensity, technology and occupational structure of the labor force 2/. It is no wonder that employment forecasts (or targets) are repudiated, more often than not, by the actual course of events 3/ . Being aware of these general difficulties, and because of the absence of adequate data, an essentially simple and straight-forward approach has been adopted in our study. The main propositions and assumptions that helped to simplify the approach are stated as follows:

(i) The condition of homogeneity is assumed to hold for the labor force, which is measured simply by the number of participants. Adhering to the implicit convention of the Second Plan, employed labor is treated in terms of full time equivalents. The residual item, i.e., the difference between the total labor force and employed labor is then defined as "unemployment". The assumed use of full-time equivalents in the measurement of employment is quite arbitrary because the recorded statistics do not differentiate between fully and partially employed labor. Partial employment is certainly widespread in the service sectors.

2/ See G.Myrdal, "Asian Drama", Vol.II Ch,21, Pantheon, New York, 1968.

3/ For example, the actual increase in labor demand for the entire economy was 1.2 million between 1962-1967 while the First Plan target was an increase of 2.1 million.

(ii) Due to lack of relevant data, the multi-sector model used for economic projections steered away from the analysis of possible substitution between capital and labor through the use of marginal capital/labor ratios. The demand for labor is treated essentially as a variable derived from output projections using exogenously determined average productivity figures. It is possible, however, to assume alternative levels of average productivity and to analyse their consequences for a given macro-economic solution. It should also be noted that the marginal capital/labor ratios are themselves not entirely independent of growth in the labor force, for they depend on the relative scarcity of labor as a factor of production.

(iii) Although the non-agricultural part of the economy is divided into eleven different sub-sectors in the multisector model analysis, the scarcity of data on sectoral labor productivities and their probable growth in the future made is extremely difficult to calculate the demand for labor at the sub-sector level. Instead, the non-agricultural demand for labor is treated as a single variable derived from total non-agricultural output projections by the use of alternative hypotheses on the growth rate of average non-agricultural productivity.

(iv) The emigration of Turkish workers to fill jobs abroad is likely to continue in the 1970's. It is assumed that this form of migration is not of a permanent nature but effected by the trade cycle and other short term factors. Accordingly, it was preferred to treat this factor as operating on the demand rather than on the supply side. Thus, domestic demand for labor should be coupled with external demand to arrive at the (net) unemployment rates for a given size of the labor force.

Having made a set of simplifying assumptions at the outset, the work was then carried out in four successive stages; (i) derivation of the most reasonable estimates of relevant variables for the base year, 1972, (ii) study of labor supply possibilities in the non-agricultural sectors, (iii) derivation of demand for non-agricultural labor on the basis of carefully selected economic growth alternatives

and assumptions on the growth of productivity, and (iv) contrasting supply and demand for various combinations of alternative assumptions made in the supply and demand projections. The projections are given in the paper only for the years 1977 and 1982, which are the terminal years of the Third and Fourth Plans, respectively.

It is obvious that the projections made in our study are neither forecasts (where predictions are made with calculable statistical precision) nor plan targets (where certain objectives are fixed and appropriate measures are determined. They merely represent the working out of the implications of a series of conditional statements on the future possibilities. This sort of approach may become particularly useful in contrasting different assumptions on a particular fact of the problem while maintaining all other assumptions constant. Special care is taken in the presentation of results so that meaningful contrasts of assumptions may be made in several ways. In our view, the alternatives selected for presentation in this paper are realistic and likely to cover all reasonable outcomes in the period considered. Furthermore, to have fair play the better guesses of the author are indicated in the final confrontation of the supply and demand, and thus some broad conclusions are drawn for future plans and policies.

II. POPULATION, URBANIZATION AND NON-AGRICULTURAL LABOR FORCE

In preparing the Second Plan, an elaborate endeavor was made in working out population projections covering the twenty-year period (1965-1985) after the last census year 1965. Along with these projections, changes in the age structure (by 5 year cohorts) and sex composition are also estimated. On the basis of the new census of 1970, the population projections will certainly be re-assessed, and possibly revised, in the process of preparatory studies for the Third Plan (1973-1977). Thus, no attempt was made in our work to reconsider the available population projections. Table I to VIII in the Appendix summarize the main characteristics of the Turkish population as observed in the recent past and projected into the future.

The rate of population growth recorded in the last two decades has been quite high and far exceeds the rates observed in 1930's and 1940's. The growth rates during the periods 1950-1955, 1955-1960, 1960-1965 were 2.78, 2.85 and 2.66 per cent,respectively. In recent years some decline has been observed in fertility mainly due to the relatively small size of the fertile female population of the 1960-1965 period, reflecting population shifts (a fall in the birth rates) during the years of World War I and the War of Independence.

For the purposes of the long-term projections to be included in the Second Plan, an estimate has been derived, on the basis of the 1960 census and a sample of the available results of the 1965 census, for the age and sex adjusted birth rate for the 1960-1965 period. This figure has been calculated to be 4.13 per cent, and assumed to remain at this level for the duration of the projections (1965-1985) in the high-fertility case. In the medium and low fertility cases, this rate has been lowered by 5 per cent and 10 per cent, respectively, for each 5 year period in 1965-1985. In all three cases, the same sets of mortality assumptions have been used.

In this study, only the high and medium fertility projections are considered. In our view, it is reasonable to expect some decline in fertility in the coming decade due to the rapid pace of urbanization, and the improved and extended family planning practices. The assumptions made for the decline in death rates appear, however, to be rather optimistic and the projected death rate may prove to be an underestimate. Thus, the most likely outcomes will be within the range of high and medium fertility projections.

The implications of the high rates of population growth realized in the last two decades are serious and manifold. If the pace of economic growth cannot be accelerated in a radical way, urban unemployment on an unprecedented scale should be expected in the late 1970's and beyond, with the resultant social tensions and economic pressures. If a much faster growth in agriculture cannot be achieved the rapidly rising domestic demand, due to

population and income growth, will severely limit the expor capacity in this sector where significant comparative advantages are present. Continually high levels of the dependency ratio (Appendix Table V) will certainly restrict the scope for increasing the propensity to save. The demand for public consumption and investment in social overheads will certainly rise with rapid urbanisation and the growing school age population, thus limiting the public savings that can be channeled into fixed capital formation in the directly productive sectors.

Recognizing the potential pressure of population growth on economic development, a family planning program has been initiated in the First Plan period covering mainly the urban areas and using existing health facilities. The Second Plan target is to cover two million women by family planning services by 1972.

The pace of expansion of family planning activities has been considerably slower than the targets chosen in the programs. While 1 million women were the target to be covered by contraceptive medication and training between 1965-1968, the actual number affected was less than 180 thousand 4/. It is obvious that a much higher priority will have to be assigned to family planning in the future State programs and plans.

Urbanization:

The increase in the urban population, called"urbanization" for our purposes, has been very rapid in the last two decades. It is the result of rural/urban migration rather than the difference between births and deaths. The population size of 10,000 has been taken as the limit differentiating rural and urban settlements. Appendix Table VIII shows the growth of the urban population and its relative share in the total as recorded in 1950-1965 and projected for the Second Plan period. The rate of urbanization has been around 6.5 per cent in the 1950-1965 period, 5.1 per cent between 1960-1965 and is estimated to reach 5.8 per cent in 1967 and 6.5 per cent in 1972. Thus,

4/ 1970 Annual Program, SPO, pp.487

the ratio of urban population to total population is expected to increase to 38 per cent in 1972 from the actual ratio of nearly 30 per cent in 1965.

The discussion of the possible causes of the urbanization process as experienced in Turkey is clearly beyond the scope of this paper. In Section VI, some crude estimates are derived to depict the possible evolution of urban/rural income differentials in the 1972-1982 period.

It is to be noted that urbanization has two main implications in the context of long-term employment projections. First, it affects the rate of population growth, for urban crude birth and death rates are different from those in the rural areas. (See, e.g., Appendix Table VII for child/women ratios in both areas). A decline in fertilityis expected to accompany urbanization. Secondly, the size of the total labor supply is affected by urbanization, because participation rates for women are lower in the urban areas.

As a working hypothesis, the Second Plan estimate of urban population in 1972 was taken as a base year figure for the projections between 1972 and 1982. For the rhythm of urbanization in 1972-1982, three alternative assumptions have been made (as shown in Table I) which will be referred to as Urbanization, A, B and C. Urbanization A assumes a 6.5 per cent rate of growth throughout the ten years period, which is a very rapid pace and, in our view, the least likely outcome. As will be seen later, it gives rise to excessive urban unemployment rates in the late 1970's. Urbanization B and C imply gradually decreasing rates of rural/urban migration.

The urban/rural division of the total population is projected for Urbanization A, B and C under both the high fertility and medium fertility assumptions. Table 2 contrasts the urban population ratios for various combinations of assumptions. At the outset of the 1980's the relative shares of urban and rural populations in the total population will be roughly equal for most of the combinations considered.

TABLE 1

ALTERNATE PROJECTIONS FOR RATES OF URBANIZATION
(1972-1982)

	Urban Population (Millions)			Annual Rate of Urbanization (%)	
	1972	1977	1982	1972/1977	1977/1982
Urbanization A	14.2	19.5	26.7	6.5	6.5
" B	14.2	19.0	25.4	6.0	5.5
" C	14.2	19.0	24.2	6.0	5.0

TABLE 2

THE RATIOS OF URBAN POPULATION TO TOTAL POPULATION

(percentages)

	Actual	High Fertility	Medium Fertility
1965	29.9	-	-
1972	-	37.6	38.0
Urbanization A			
1977		44.9	45.9
1982		53.0	55.5
Urbanization B			
1977		43.7	44.7
1982		50.4	52.7
Urbanization C			
1977		43.7	44.7
1982		48.0	50.2

Non-agricultural Labor Force:

A thorough treatment of non-agricultural labor force

estimation would entail the consideration of the following factors for the duration of the projections.

(i) estimation of the age and sex composition of the urban population resulting from the natural growth of the previously urban population and rural/urban migration; the age/sex characteristics of the migrating rural population are likely to differ from those of the total rural population; changes in the age composition within the (15 and over) age group need to be carefully traced out;

(ii) projection of the age and sex specific participation rates for the urban population (assuming that the basic definitional issues on the types of economic activities to be covered and the minimum working period for workers are resolved); these rates are governed by diverse factors such as prolonged education, army withdrawals, further emancipation of women, retirement schedules, etc,;

(iii) making "proper" allowances for agricultural employment of the urban population and non-agricultural employment of the rural population.

In the preparation of the Second Plan, a systematic study was made for the estimation of the age and sex distribution of the urban population resulting from netural growth and rural/urban migration. The participation rates of .85 and .22 were applied to the projected working age (15-64) male and female populations, respectively. The estimates for these rates were derived from the results of a special survey and judgments on future army and educational withdrawals. Then, the resulting urban labor force was multiplied by a spread coefficient, presumably to calculate the entire non-agricultural labor supply. In Table 3 the Second Plan projections for the urban population and the non-agricultural labor force are shown.

It is observed in these projections that the non-agricultural labor force/urban population ratio (r) is around .40 throughout the Second Plan period.

In the absence of new statistical material, the non-agricultural labor force has been projected for the 1972-1982 period by taking the Second Plan 1972 estimate as a

base figure and assuming that the ratio (r) will be between .40 and .41 throughout the duration of the projections. Thus, two alternative projections are made for the non-agricultural labor force estimate as shown in Table 4.

In our view, the ratio (r) is likely to be greater than .40 in the 1972-1982 period, mainly because of the gradually increasing share of the working age (15-64) group in the total population (particularly in the medium fertility case which is more relevant to the urban population growth, Appendix Table III), further emancipation of women, reduced size of the army in relation to the total population, and improved organization of the labor markets, etc. Our assumptions in this domain need to be checked, however, as soon as the new census data become available.

TABLE 3

PROJECTIONS FOR NON-AGRICULTURAL LABOR FORCE IN THE SECOND PLAN (1968-1972)

(million)

	Urban Population	Non-agricultural labor force: Second Plan Estimate	r=.40	r=.41
1967 Base year	10,490	4,200	4,200	4,300
1968	11,120	4,450	4,450	4,560
1969	11,810	4,730	4,720	4,840
1970	12,560	5,040	5,020	5,150
1971	13,360	5,370	5,340	5,480
1972	14,220	5,730	5,690	5,830

Note: Figures are rounded to the nearest 10 thousand;

"r" is the labor force/urban population ratio

TABLE 4

PROJECTIONS FOR NON-AGRICULTURAL LABOR FORCE
(1972-1982)

(thousands)

	r=.40	r=.41
1972	5,680	5,820
Urbanization A		
1972	7,800	8,000
1982	10,680	10,950
Urbanization B		
1977	7,600	7,790
1982	10,160	10,410
Urbanization C		
1977	7,600	7,790
1782	9,680	9,920

Note: Figures are rounded to the nearest 10 thousand; "r" is the labor force/urban population ratio.

III. POSSIBLE ECONOMIC GROWTH AND DEMAND FOR NON-AGRICULTURAL LABOR

Possible Economic Growth:

As already indicated in the introductory part of this paper, a series of marco economic studies were undertaken in the SPO for the 1972-1982 period covering the Third and Fourth Plan 5-year intervals. The overall aim was to focus on the basic determinants of future growth and to narrow down the wide range of possibilities to a few relevant growth alternatives for further elaboration and refinement at the sectoral level. With the help of the input-output technique , the implications of decomposing final demand in various ways were explored for each relevant growth option. In the interest of brevity, we shall confine our remarks in this paper only to the statement of the general approach used and the major results which emerged from these long-term exercises.

The first step in the process was to derive a set of estimates of the main macro economic maguitudes for 1972, the base year for the period of the 10 year projections. On the basis of the latest data available in early 1969, the second year of the Second Plan (1968-1972), some of the official plan estimates were modified. The average growth rate was reduced to 6.8 per cent from the plan target of 7.0 per cent, mainly on the account of the recent shortfalls in agricultural output. Although it is too early to make more definitive forecasts at this time, the actual growth may perhaps materialize at a somewhat lower level if the sluggishness of agricultural performance continues, and the recurrent balance of payments difficulties are not, at least partially, relieved. Along with the modification of the target growth rate, some changes were also made in the balance of payments figures and the relative shares of expenditure in GNP. The growth rate of consumption was increased to 6.0 per cent from the Plan target of 5.8 per cent per year. (Appendix Tables X and XI).

Of the many constraints to be faced in accelerating economic growth in the 1970's, three seem particularly crucial in the context of long-term projection studies: Shortages in (i) foreign exchange, (ii) domestic savings, and (iii) effective limits on the growth of agricultural output. The latter (third) constraint will have a more important bearing on the aggregate growth in the first half of the projection period than in the second half, due to the gradually diminishing share of agricultural income in GNP. If the currently observed marginal savings propensities are projected into the future, shortage of domestic savings will become the main bottleneck in the growth process only if the growth rate target of 7 per cent or more is set on the basis of extremely optimistic export projections or external aid inflows. Under moderately optimistic hyptheses about (i) the future aid inflows and their terms of repayment, and (ii) the growth of exports and invisible receipts, the scarcity of foreign exchange will be the most effective limit on economic growth. Given the present debt service obligations and the disturbingly low level of foreign exchange reserves, Turkey will be facing serious risks in financing imports at levels adequate for a sustained growth of around 7 per cent per annum in the 1970's.

Upon establishing the magnitude of the main macro economic variables likely to materialise in 1972, the second step was to exogenously project, for the 1972-1982 period, the most likely figures for capital flows and invisibles in the balance of payments, so as to estimate the maximum allowable trade gaps that can be sustained under the equilibrium conditions. In the past, the common approach was to determine the aid requirements endogenously from the target for imports, exports and invisibles, consistent with a pre-determined rate and direction of development. In view of the recent developments in the international aid milieu, a more realistic approach appears, at least in the context of long-term projection exercises, to be to fix exogenously the possible aid inflows (together with other items that are usually determined exogenously also), and then to explore what sort of growth can be achieved with varying combinations of exports and imports consistent with the maximum allowable trade gaps. Using a computer program, this can be repeated for different values of the exogenous variables (e.g., by varying the amounts as well as the terms of external aid inflows).

The selection and elaboration of a few growth alternatives (consistent internally and externally) was the third step in the process. At this stage, the consequences of alternative sectoral export and import patterns were analyzed using sectoral capital/output ratios.

In the Appendix Tables X and XI, the balance of payments and resource-expenditure projections are given for a case with a set of moderately optimistic assumptions. The incremental saving rates and capital/output ratios for alternative combinations of overall growth and consumption rates are also presented in the Appendix XIV. A close scrutiny of these tables would give an idea of the order of magnitude of the relevant range of growth possibilities in the 1972-1982 period. The broad conclusions emerging from all these exercises may be summarized as follows:

(i) The annual growth rates of import of roughly 6.0 and 6.5 per cent are feasible for export growth rates of 7.0 and 8.0 per cent, respectively, in the 1972-1982

period under a set of moderately optimistic expectations for capital inflows and invisibles. The feasible rates of development corresponding to the above two sets of trade projections are 6.5 and 7.0 per cent per year, respectively, provided the elasticity of imports with respect to the GNP can be lowered to below 1.0 . Thus, even if exports grow at 8.0 per cent per year in 1972-1982 (whereas the same rate is estimated around 6.0 per cent in 1967-1972), substantially intensified import replacement activity will be required to achieve at 7 per cent rate of development. Thus, a mere reliance on export growth will not be sufficient in the Turkish case, and export promotion will have to be complemented by industrialization in several selected manufacturing branches.

(ii) The manufacturing sub-sectors with favorable comparative advantage and export potential are mineral processing, forest products, textiles, food processing and leather products, at least for the Third Plan period. These sectors together with tourism and the primary production of livestock, fruits and vegetables, industrial crops, forestry and mining will make up the following export base of the economy. Studies are being carried out to narrow down the range of investment possibilities.

(iii) Industries producing intermediate goods (chemicals, petroleum products, paper, etc), machinery and equipment sectors and basic metal processing industries are the main manufacturing branches where major advances are likely to be made in terms of value added increases and foreign exchange savings. Industrialization in depth rather than in breadth will be required, however, to develop the competitive strength of the home industries. Roughly 70 per cent of the manufacturing income growth will be realized in these industries, with an import replacing bias initially in the Third Plan and, subsequently, with a growing export orientation. The vital issue will, therefore, be the choice of specific industrial investments so as to envolve in a reasonable period of time an economically viable industrial structure.

(iv) The make-up of the additional value added, forthcoming in the period considered, is approximately as follows: 15 per cent from agriculture, 40 per cent from

industry (90 per cent of which is from manufacturing) and 45 per cent from services. Considering the spread effect of industry in the service sectors, it is evident that industry will be the main engine of aggregate growth. Improved performance of agriculture will be equally vital to feed the growing population and to supply exportable products.

(v) There is a case for supporting a policy of restrained growth of total consumption (e.g., around 6 per cent) and a relatively high marginal saving rate (28 per cent or higher) so as to restrict the import demand on the one hand, and to finance investment programs which increasingly emphasize social overhead projects (thus resulting in a higher overall capital/output ratio), on the other. The latter development will have a salutary effect on the redistribution of income, particularly between the rural and urban areas.

(vi) If population grows in the 1972-1982 period along the lines of the medium fertility projections, the expansion of per capita consumption in 1972-1982 can be maintained at the same pace as in 1967-1972 with a moderately restrained policy of total consumption growth at 6.0 per cent per annum, which is feasible with the rate of development around 6.5 per cent. If high-fertility projections materialize, however, to maintain the pace of per capita consumption growth expected in 1967-1972 in the preceding ten year period the total consumption will have to grow at 6.3 per cent per year, which is feasible only if the annual rate of development approaches 7 per cent. These relationships are shown in Table 5.

Having broadly outlined the possible range of prospective economic growth in the 1972-1982 decade, we can now indicate the basic growth alternatives relevant to our labor demand projections.

The range of possible agricultural growth has been assumed to be between 3.2 and 3.7 per cent per annum. Then, for the lower limit of agricultural growth, the rates of development at 6.0 and 6.5 per cent, and for the upper limit of agricultural growth, the rates of development of 6.5 and

7.0, have been postulated. Thus, for the purposes of this study, four basic development variants, referred to as growth Alternatives I to IV, have been defined (Tables 6 and 7).

TABLE 5

PROSPECTIVE GROWTH OF GNP AND CONSUMPTION PER HEAD (1967-1982)

(Annual Rate of Growth %)

	GNP per head		Consumption per head	
	High Fertility	Medium Fertility	High Fertility	Medium Fertility
1967-1972*	3.9	4.1	3.2	3.4
1972-1982				
GNP growth rate				
.06	3.0	3.4		
.065	3.5	3.8		
.070	4.0	4.3		
Consumption growth rate				
.057			2.7	3.1
.060			3.0	3.4
.063			3.2	3.6

* Second Plan official estimates are revised in these calculations (see Appendix Table XI).

TABLE 6

ESTIMATED SECTORAL GROWTH IN THE SECOND PLAN

(1967 prices)

	Billion TL		Rate of Annual Growth (%)	
	1967 Actual	1972 Estimate	1967-1972 Estimate	1962-1967 Actual
Agriculture	28.4	33.7	3.5	3.3
Non-Agriculture	66.7	97.8	8.0	8.5
GNP	95.1	131.5	6.8	6.7

TABLE 7

SECTORAL GROWTH ALTERNATIVES (1972-1982)

(1967 Prices)

	Billion TL		Rate of Annual Growth(%)	
	1977	1982	1972-1977	1977-1982
Growth Alternative I				
Agriculture	39.4	46.1	3.2	3.2
Non-agriculture	136.6	189.4	6.9	6.8
GNP	176.0	235.5	6.0	6.0
Growth Alternative II				
Agriculture	39.4	46.1	3.2	3.2
Non-agriculture	140.8	200.8	7.6	7.4
GNP	180.2	246.9	6.5	6.5
Growth Alternative III				
Agriculture	40.4	48.4	3.7	3.7
Non-agriculture	139.8	198.5	7.4	7.3
GNP	180.2	246.9	6.5	6.5
Growth Alternative IV				
Agriculture	40.4	48.4	4.7	3.7
Non-agriculture	144.0	210.3	8.1	7.9
GNP	184.4	258.7	7.0	7.0

Demand for Non-agricultural Labor:

In preparing the Second Plan projections for labor demand in the non-agricultural sectors, sectoral employment elasticity coefficients (obtained from the censuses of 1955 and 1960) were used. It is now generally agreed that the plan projections somewhat overestimate the labor demand, because the implied productivity increases are very low (e.g., 2.2 per cent per year for manufacturing, almost nil for construction and services, and about 1.0 per cent for the entire non-agricultural sector.). Therefore, the first task was to revise the official Plan estimates. Revisions have been made (using the modified output figures) assuming, on the average, a 2 per cent annual increase in labor productivity for the entire non-agricultural sector (shown in Table 8).

For the 1972-1982 period two hypotheses have been used for the rate of productivity growth(of non-agricultural labor), namely 2.5 and 3.5 per cent per annum. These are not rigorously derived from the Turkish empirical data, and are expected to define the range of possible productivity growth in the decade ahead.

Then,as shown in Table 9, the demand for non-agricultural labor has been projected for each Growth Alternative, using two hypotheses on the labor productivity growth. These projections clearly indicate the high sensitivity of labor demand to changes in productivity increases.

TABLE 8

ESTIMATED DEMAND FOR NON-AGRICULTURAL LABOR IN THE SECOND PLAN PERIOD

(thousands)

	Non-agricultural Labor	
	Demand	Supply
1967 Plan Estimate	3,800	4,200
" Revised Estimate	3,730	-
1972 Plan Estimate	5,260	5,730
" Revised Estimate	4,950	-

TABLE 9

PROJECTIONS OF DEMAND FOR NON-AGRICULTURAL LABOR (1977-1982)

(thousands)

	Rate of Annual Productivity Growth (1972-1982)			
	.025		.035	
	1977	1982	1977	1982
Growth Alternative I	6,110	7,490	5,820	6,790
" " II	6,300	7,940	6,000	7,200
" " III	6,250	7,850	5,950	7,120
" " IV	6,440	8,320	6,130	7,540

IV. CONFRONTING SUPPLY OF AND DEMAND FOR NON-AGRICULTURAL LABOR

Having obtained, along the lines indicated in the preceding parts of this paper, projections of the supply of and the demand for non-agricultural labor, we are now ready to compare these projections to find unemployment rates and to study the relevant sensitivities.

In the first phase, the foreign demand for labor is not integrated into the problem. It is found instructive to contrast projections under the same economic growth assumptions. To make presentation brief, only Growth Alternatives II and IV are considered as they seem to be the more relevant options corresponding to the lower and upper limit of agricultural growth.

As observed in Tables 10 and 11, keeping other assumptions the same, unemployment rates are extremely sensitive to variations in the rates of projected productivity growth, especially in the latter part of the projection period. This is significant both for the future orientation of projection work and for the choice of technologies in planning and policy making. It is also clear that the pace of urbanization will have an important bearing on the labor supply particularly in the longer run. Unemployment rates are only moderately sensitive to labor force/urban population ratios.

If all assumption, except those on growth, are kept the same unemployment rates are found to be not highly sensitive to variations in the growth rate of non-agricultural income of the order of magnitude of 0.5 per cent per year, particularly in the 5 year intervals. For a ten-year period, however, a sustained change in the growth rate does matter, especially in cases where the growth rate of labor productivity is lower.

In the second phase, to have a more realistic view of the unemployment problem, the implications of Turkish workers going abroad are explored. As indicated in the first part of this paper, it is preferred to treat the emigration of workers as a temporary process which is closely related to

TABLE 10

PROJECTIONS OF UNEMPLOYMENT IN THE NON-AGRICULTURAL SECTOR*, 1977-1982 (GROWTH ALTERNATIVE II)

(thousands)

	Rate of Annual Productivity Growth			
	.025		.035	
	1977	1982	1977	1982
Urbanization A (r=.40)**				
Supply	7,800	10,680	7,800	10,680
Unemployment	1,500	2,740	1,800	3,480
Rate of Unemployment(%)	19	25	23	33
Urbanization A (r=.41)				
Supply	8,000	10,950	8,000	10,950
Unemployment	1,700	3,010	2,000	3,750
Rate of Unemployment(%)	21	27	25	34
Urbanization B (r=.40)				
Supply	7,600	10,160	7,600	10,160
Unemployment	1,300	2,210	1,600	2,950
Rate of Unemployment(%)	17	22	21	29
Urbanization B (r=.41)				
Supply	7,790	10,410	7,790	10,410
Unemployment	1,490	2,460	1,790	3,200
Rate of Unemployment(%)	19	24	23	31
Urbanization C (r=.40)				
Supply	7,600	9,680	7,600	9,680
Unemployment	1,300	1,740	1,600	2,480
Rate of Unemployment(%)	17	18	21	26
Urbanization C (r=.41)				
Supply	7,790	9,920	7,790	9,920
Unemployment	1,490	1,980	1,790	2,720
Rate of Unemployment(%)	19	20	23	27

* Foreign demand for non-agricultural labor is not considered.

** "r" is the labor force/urban population ratio.

TABLE 11

PROJECTIONS OF UNEMPLOYMENT IN THE NON-AGRICULTURAL SECTOR*, 1977-1982 (GROWTH ALTERNATIVE IV)

(thousands)

	Rate of Annual Productivity Growth			
	.025		.035	
	1977	1982	1977	1982
Urbanization A (r=.40)**				
Supply	7,800	10,680	7,800	10,680
Unemployment	1,360	2,360	1,670	3,140
Rate of Unemployment(%)	17	22	21	29
Urbanization A (r=.41)				
Supply	8,000	10,950	8,000	10,950
Unemployment	1,560	2,630	1,870	3,410
Rate of Unemployment(%)	19	24	23	31
Urbanization B (r=.40)				
Supply	7,600	10,160	7,600	10,160
Unemployment	1,160	1,840	1,470	2,620
Rate of Unemployment(%)	15	18	19	26
Urbanization B (r=.41)				
Supply	7,790	10,410	7,790	10,410
Unemployment	1,350	2,090	1,660	2,870
Rate of Unemployment(%)	17	20	21	28
Urbanization C (r=.40)				
Supply	7,600	9,680	7,600	9,680
Unemployment	1,160	1,360	1,470	2,140
Rate of Unemployment(%)	15	15	19	22
Urbanization C (r=.41)				
Supply	7,790	9,920	7,790	9,920
Unemployment	1,350	1,600	1,660	2,380
Rate of Unemployment(%)	17	16	21	24

* Foreign demand for non-agricultural labor is not considered.

** "r" is the labor force/urban population ratio.

the business cycle in the external world and operating on the demand side of the problem. One thorny issue in this context is the differentiation between urban and rural based labor going abroad. As a tentative hypothesis, we may adopt the view that the predominant portion of the foreign demand for labor will be met by the working age population in the urban areas.

Table 12 portrays the effects of various levels of foreign demand on the unemployment rates. In the 1961-1968 period, about 250 thousand workers went abroad (mainly Europe) to accept jobs unfilled by the highly trained residents of the receiving countries. For the 1972-1982 period, a range of 300 to 700 thousand is arbitrarily considered as the probable level of foreign demand for non-agricultural labor.

In Table 12, the unemployment rates are calculated and contrasted for various levels of foreign demand for labor under both the growth alternatives considered. To make these contrasts meaningful, other assumptions are kept constant in all cases. Reflecting the author's own expectations, Urbanization B, labor productivity growth rate of 2.5 per cent per annum and the labor force/urban population ratio of 41 per cent are assumed in all projections given in Table 12.

It is obvious that the foreign demand for labor will greatly alleviate the unemployment problem, while the workers remittances also improve the country's balance of payments position. The adverse effect of this process will be increasingly felt, however, in the supply and demand balances of some categories of skilled labor.

V. POSSIBLE EVOLUTION OF URBAN/RURAL INCOME DIFFERENTIALS: SOME CRUDE ESTIMATES

An attempt is made in this paper to give a very rough indication of comparative trends in the growth of urban/rural populations and non-agricultural/agricultural incomes as observed in the 1950-1965 period and as expected in the 1967-1982 interval. For future estimates, Growth

TABLE 12

PROJECTIONS OF UNEMPLOYMENT IN THE NON-AGRICULTURAL SECTOR FOR ALTERNATE LEVELS OF FOREIGN DEMAND FOR LABOR (1972-1982)*

(thousands)

	Level of Foreign Demand for Non-agricultural labor		
	300	500	700
1972 Level of unemployment **	570	-	-
" rate of " (%)	10	-	-
Growth Alternative II			
1977 level of unemployment	1,190	990	790
" rate of " (%)	15	13	10
1982 level of unemployment	2,360	2,160	1,960
" rate of " (%)	23	21	19
Growth Alternative IV			
1977 level of unemployment	1,050	850	650
" rate of " (%)	14	11	8
1982 level of unemployment	1,790	1,590	1,390
" rate of " (%)	17	15	13

* Non-agricultural labor supply projections are based on the assumptions of Urbanization B and labor force/urban population ratio being equal to 41 per cent.

** Using the assumptions in (*), the supply figure for 1972 is 5,820 thousands whereas the plan estimate is 5,730.

NOTE: For all projections of employment, annual rate of productivity growth between 1972-1982 is assumed to be equal to .025.

Alternative II, Urbanization B and medium fertility assumptions have been adopted.

Table 13 shows that agricultural output growth will be approximately the same in two consecutive periods, while in the 1967-1982 period rural population will remain at the same level and enjoy a steadily rising per capita income.

TABLE 13

INDEX NUMBERS OF RURAL URBAN POPULATIONS AND AGRICULTURAL AND NON-AGRICULTURAL INCOMES, ACTUAL 1950-1965 AND PROJECTED 1967-1982

	Rural Population	Rural Population	Agricultural Income	Non-agricultural Income
1950-1965				
1950	100	100	100	100
1955	110	137	123	145
1960	120	191	152	192
1965	129	244	157	260
1967-1982 (1)				
1967	100	100	100	100
1972	103	135	119	147
1977	104	181	139	211
1982	101	242	162	301

(1) Growth Alternative II, Urbanization B and medium fertility assumptions are employed in the index number projections.

Setting aside the problem of allocating agricultural and non-agricultural incomes to the rural and urban populations in a precise way, we have derived extremely crude estimates for the ratio of urban income per head to rural income per head by simply assigning all the agricultural income to rural and all the non-agricultural income to urban inhabitants. This procedure is likely to underestimate such ratios because, in the Turkish context, agricultural income

accruing to the urban population is quite significant. The crude ratios nevertheless indicate the relevant trends in the urban/rural income differentials. The great disparities in per capita income levels have apparently been one of the major factors stimulating the rural/urban population movements. By 1982, some decline in the per capita income ratios will take place but the disparities will still be very high. With an unemployment ratio of at least 15 to 20 per cent probably prevailing in the urban areas, it is extremely difficult to project the possible rates of urbanization in the decade of the 1980's.

TABLE 14

APPROXIMATE RATIOS OF URBAN/RURAL INCOMES PER HEAD

	Urban/Rural Incomes per head
1950-1965	
1950	6.0
1955	5.7
1960	4.8
1965	5.1
1967-1982*	
1967	5.0
1972	4.7
1977	4.4
1982	3.9

* Growth Alternative II, Urbanization B and medium fertility assumptions are used in the 1967-1982 projections.

VI. CONCLUSIONS

Of the many conclusions that emerge from the analysis presented in this paper, the following ones seem to be particularly relevant to Turkey's development policy:

1. Even under moderately optimistic assumptions about economic growth (6.5 per cent rate of development per annum)

Turkey cannot expect to resolve the urban unemployment problem in the Third and Fourth Plan periods. In fact, the problem is more likely to grow steadily worse if the pace of urbanization does not decline significantly. The urban unemployment rates projected for 1977 and 1982 are around 13 and 21 per cent, respectively, under rather optimistic assumptions on the foreign demand for non-agricultural labor. This order of magnitude is very high compared to the present unemployment rates, and will likely to give rise to an unprecedented increased in social tensions and economic pressures in the urban areas.

2. The currently official conception that rapid urbanization has intrinsic virtues from the development point of view, and urban unemployment can somehow be resolved by industrialization will have to be critically analyzed and reassessed. A special emphasis will have to be given to those programs which aim at a faster growth in agriculture, so that the pull of the urban areas in somewhat countered.

3. The expansion of the country's foreign exchange earning capacity is the main precondition for achieving adequate rates of growth (6.5 to 7.0 per cent per annum) and thus avoiding staggering problems of urban unemployment.

4. The demand for labor is highly sensitive to variations in the rate of growth of labor productivity. Concerted efforts should be made for the development and adoption of labor-intensive technologies, particularly in construction, forest development, agriculture and some export oriented industries.

5. An increasing awareness needs to be created in the processes of economic management of the possible distortions in the structure of factor prices prevalent in the economy. In particular, the wages of unskilled labor in the non-agricultural sector should not be allowed to rise above their real value by unduly supporting and encouraging union movements and social security legislation.

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STATISTICAL APPENDIX

TABLE I

CRUDE BIRTH AND DEATH RATES

Actual 1935-1960 and Projected 1965-1985

(Per thousand)

	Crude Birth Rate	Crude Death Rate	Rate of Natural Increase	Rate of Population Increase Between Census
1935-1940 Actual	38.3	19.4	18.9	19.6
1940-1945 "	37.1	27.2	9.9	10.6
1945-1950 "	38.8	17.6	21.2	21.7
1950-1955 "	42.2	14.1	28.1	27.8
1955-1960 "	44.0	12.6	31.4	28.5
1965-1970 High Fertility	35.5	9.9	26.6	
1970-1975 "	35.9	8.4	27.5	
1975-1980 "	36.7	7.3	29.4	
1980-1985 "	37.5	6.2	31.3	
1965-1970 Medium Fertility	34.8	9.7	25.1	
1970-1975 "	34.5	8.4	26.1	
1975-1980 "	32.4	7.2	25.2	
1980-1985 "	32.2	6.3	25.9	

TABLE II

GROWTH OF THE TURKISH POPULATION

Actual 1935-1965 and Projected 1970-1985

(millions)

	Actual	Projected High Fertility	Projected Medium Fertility
1935	16.2		
1940	17.8		
1945	18.8		
1950	20.9		
1955	24.1		
1960	27.8		
1965	31.4		
1970		35.8	35.5
1975		41.0	40.4
1980		47.4	45.8
1985		55.3	52.0

TABLE III

DISTRIBUTION OF THE THREE MAIN AGE GROUPS

Actual 1960-1965 and Projected 1970-1985

(percentages)

	1960	1965	1970	1975	1980	1985
0-14						
Actual	42.8	42.5	-	-	-	-
High Fertility	-	-	41.8	40.8	41.0	41.8
Medium Fertility	-	-	41.4	39.9	38.9	38.7
15-64						
Actual	53.6	53.5	-	-	-	-
High Fertility	-	-	53.8	54.6	54.4	54.2
Medium Fertility	-	-	54.1	55.4	56.3	57.1
65+						
Actual	3.6	4.0	-	-	-	-
High Fertility	-	-	4.4	4.6	4.6	4.0
Medium Fertility	-	-	4.5	4.7	4.8	4.2

TABLE IV

SEX-AGE DISTRIBUTION OF THE POPULATION

Actual 1960-1965 and Projected 1970-1985
(Female percentage within each age group)

	1960	1965	1970	1975	1980	1985
0-14						
Actual	48.0	48.1	-	-	-	-
High Fertility	-	-	48.8	49.1	49.1	49.0
Medium Fertility	-	-	48.9	49.2	49.1	49.1
15-64						
Actual	49.0	49.0	-	-	-	-
High Fertility	-	-	48.9	48.8	49.0	49.1
Medium Fertility	-	-	48.9	48.8	49.0	49.1
65+						
Actual	60.4	57.3	-	-	-	-
High Fertility	-	-	55.7	54.3	53.2	53.1
Medium Fertility	-	-	55.7	54.3	53.2	53.1

TABLE V

CHANGES IN THE DEPENDENCY RATIO

Actual 1960-1965 and Projected 1970-1985

(percentages)

	Actual	High Fertility	Medium Fertility
1960	81		
1965	85		
1970		86	85
1975		83	80
1980		84	77
1985		85	76

TABLE VI

AVERAGE LIFE EXPECTANCY AT BIRTH

Actual 1935-1965 and Projected 1970-1985

	Male	Female	Both
1935-1940 Actual	42.3	47.3	44.9
1940-1945 "	33.5	35.6	34.5
1945-1950 "	42.2	50.4	46.3
1950-1955 "	50.7	54.8	52.7
1955-1960 "	53.7	56.6	55.7
1960-1965 "	56.1	59.2	57.6
1965-1970 Projected	58.8	62.0	60.4
1970-1975 "	61.5	64.9	63.2
1975-1980 "	64.1	67.6	65.8
1980-1985 "	66.5	69.9	68.2

TABLE VII

CHILD WOMEN RATIOS

(Per thousand)

	Urban*	Rural**	Average for Turkey
1955	566	812	752
1960	585	825	762
1965	553	791	718

* Places with population over 10,000

** Places with population less than 10,000

TABLE VIII

URBAN POPULATION RATIOS

Actual 1950-1965 and Projected 1967-1972

	Urban Population (millions)	Urban Population as (%) of total	Rate of Urbanization (%)
1950 Actual	3.8	18.5	-
1955 "	5.3	22.1	6.5
1960 "	7.3	26.3	6.5
1965 "	9.4	29.9	5.1
196, Projected	10.5	31.8	5.8
1972 "	14.2	38.0	6.5

TABLE IX

SECTORAL DISTRIBUTION OF THE EMPLOYED POPULATION

(of 15 years and older), 1955-1967

(thousands)

	1955	1960	1965	1967 (Plan Estimates)
Agriculture	9,446	9,738	9,768	9,940
Industry	805	977	1,197	1,429
Construction	200	290	379	472
Trade	341	404	471	498
Transportation	190	247	301	339
Services	496	677	936	1,066
Total	11,478	12,333	13,052	13,744

TABLE X

BALANCE OF PAYMENTS PROJECTIONS (1967-1982)

A Case of Moderate Estimates

(millions*)

	Actual	Projected		
	1967	1972	1977	1982
I. CURRENT ACCOUNT				
A. FOREIGN TRADE				
Exports (FOB)	523	700	981	1377
Imports (CIF)	-685	-1030	-1379	-1846
Trade Gap	-162	- 330	- 398	- 469
B. INVISIBLES				
Interest on Debts	- 34	- 73	- 72	- 56
Tourism (Net)	- 14	40	150	250
Workers' Remittances	93	145	200	300
Profit Transfers	- 25	- 40	- 66	- 112
Others	15	15	30	55
Total	35	87	242	447
C. INFRASTRUCTURE AND OFF-SHORE RECEIPTS	14	10	10	100
D. BALANCE ON CURRENT ACCOUNT	-113	- 233	- 146	- 22
II. CAPITAL MOVEMENTS**				
Debt Payments***	- 98	- 87	- 110	- 133
Imports with Waiver	12	22	32	47
Private Foreign Capital	17	55	90	160
External Assistance	246	258	120	--
Total	177	248	132	74

* All estimates are in 1967 constant prices

** Reserve and short-term capital movement estimates are not included in this table

*** Debt service estimates are based on the data of existing debts and exogenously projected program of external assistance, presumably to be agreed upon in 1968-1973, the pipeline of which will extend to 1978

TABLE XI

PROJECTIONS FOR RESOURCES AND USES (1967-1972)

A Case of Moderate Estimates

(Billion TL**; 1967 Prices)

	Actual	Revised	Projection		Annual Rate of Growth(%)		
	1967	1972*	1977	1982	1967/1972	1972/1977	1977/1982
RESOURCES	96.1	133.6	181.5	247.5			
1. GNP	95.1	131.5	180.2	246.9	6.8	6.5	6.5
2. Import Surplus	1.0	2.1	1.3	0.2			
USES	96.1	133.6	181.5	247.1			
1. Total Investment Expenditure	19.0	30.4	43.4	62.3			
a. Fixed Capital Investment	16.8	28.4	40.7	58.6	11.1	7.5	7.6
b. Stock Increases	2.2	2.0	2.7	3.7			
2. Total Consumption Expenditure	77.1	103.2	138.1	184.8	6.0	6.0	6.0
Total Investment/GNP (%)	20.0	23.1	24.1	25.2			
Fixed Capital Investment/GNP(%)	17.6	21.6	22.6	23.7			
Domestic Savings/GNP(%)	18.9	21.5	23.4	25.1			

* Second Plan estimates are revised.

** U.S. $ 1: 9 TL

TABLE XII

POSSIBLE GROWTH OF IMPORTS FOR ALTERNATIVE EXPORT PROJECTIONS (THIRD PLAN)*

(percentages)

	1972-1977 Annual rate of growth (%)	
	Exports	Imports
i)	6.0	5.2
ii)	7.0	6.0
iii)	8.0	6.5

* In all variants, estimates for capital movements and invisibles are unchanged, and maximum possible rates of import growth consistent with balance of payments equilibrium are then determined for alternative rates of export growth.

TABLE XIII

POSSIBLE GROWTH OF IMPORTS FOR ALTERNATIVE EXPORT PROJECTIONS (FOURTH PLAN)*

(percentages)

	1977-1982 Annual rate of growth (%)	
	Exports	Imports
i)	7.0	5.5-6.0
ii)	8.0	6.5

* Same as the Appendix Table XII, note (*), and Fourth Plan projections are based on 7.0 per cent export and 6.0 per cent import growth in the Third Plan period.

TABLE XIV

VALUES OF INCREMENTAL CAPITAL-OUTPUT AND SAVINGS RATIOS

(for Selected Solutions)

	ICOR	ISR (%)
SECOND PLAN (1967/1972)		
I. GNP Growth Rate: 6.8%		
a. Consumption Growth Rate: 6.0%	3.20	28.8
THIRD PLAN (1972/1977)		
I. GNP Growth Rate: 6.5%		
a. Consumption Growth Rate: 6.0%	3.64	28.3
b. Consumption Growth Rate: 6.3%	3.52	24.2
II. GNP Growth Rate: 7.0%		
a. Consumption Growth Rate: 6.0%	3.54	34.0
b. Consumption Growth Rate: 6.3%	3.44	30.2
FOURTH PLAN (1977/1982) (*)		
I. GNP Growth Rate 6.5%		
a. Consumption Growth Rate: 6.0%	3.88	29.9
II. GNP Growth Rate: 7.0%		
a. Consumption Growth Rate: 6.0%	3.70	35.6
b. Consumption Growth Rate: 6.3%	3.61	31.8

* Fourth Plan Projections are based on the Third Plan growth solution (Ia) in the above table

** Import Surplus is around 3.3 and 0.2 Billion TL in 1977 and 1982, respectively, in all the solutions.