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REAL WAGES, GROWTH, INFLATION, INCOME DISTRIBUTION AND POLITICS
IN
PAKISTAN, INDIA, BANGLADESH, INDONESIA

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December 1978
G. F. Papanek

Real Wages, Growth, Inflation, Income Distribution and Politics
in Pakistan, India, Bangladesh, Indonesia*

A. The Effect of the Rate of Growth on Income Distribution and Real Wages

Pakistan's disintegration as a state in 1971 was an occasion for drawing conclusions about the linkage between economic development strategies and political consequences. The argument was made that since the development strategy followed by Pakistan led to political disaster, those who want to avoid these consequences had better avoid the strategy as well.¹ The conclusions drawn by several analysts from the experience of Pakistan, Indonesia and Bangladesh, in somewhat oversimplified form, can be stated as follows:

i) In a mixed economy, with heavy reliance on private enterprise, policies and programs to achieve a high rate of economic growth also result in a deterioration of income distribution and no improvement in the absolute income of the poor.

ii) With the rich becoming obviously richer and the poor experiencing no improvement, political and social tensions are bound to rise, resulting in serious political difficulties for the government in power.

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¹ e.g. K. Griffin and A.R. Khan, Growth and Equality in Pakistan, (McMillan, 1972): ". . .faster growth . . .(in) Pakistan and India, . . .has actually led to an absolute decline in the standard of living of the urban and rural poor." (In Pakistan) ". . .the fact of growing inequality, have led . . .to the declaration of an independent Bangladesh." (pp. ix-x). "The concentration of income and wealth in the hands of the rich has been a key ingredient in (Pakistan's) development strategy" (p. 200). In Pakistan ". . .the standard of living of the majority has declined . . ." (p.204).

1) Destabilizing Growth?

A superficial look at the experience of the four countries supports these conclusions. Riots broke out during the late 1960's in Pakistan and Bangladesh (then East Pakistan), and in 1973/74 in Indonesia, at the end of a period of rapid growth. The riots had economic grievances as a major focus and justification, with criticism specifically centered on neglect of the poor, the presumed deterioration in income distribution and increasing concentration of income, wealth, and power. In India, on the other hand, the Congress Party, which had been in power during twenty-five years of virtual economic stagnation, registered its great electoral triumph at the same time that Pakistan was disintegrating. Indonesia and Pakistan (including Bangladesh) during their periods of stagnation seem to have experienced few political disturbances based on economic grievances.

On the face of it, one can therefore make a plausible case that there is indeed a conflict between economic growth and equity in these important countries. Emphasis on growth seems to have led to neglect of the problems of both absolute poverty and income distribution and therefore to political difficulties.

2) Income Distribution and the Rate of Growth

In fact, the overall indicators of income distribution do not support the argument that the policies and programs which made for rapid growth in these four countries also resulted in less equal income distribution. If anything, they suggest the opposite.

TABLE 1
Changes in Income Distribution with Changes in Economic Growth
(% change in Gini Coefficient)

	<u>Rapid Growth</u> (+4 to +6.5%) (1960's)	<u>Stagnation</u> (+2 to +3%) (1960's):	<u>Deterioration</u> (-4 to +2%) (1970's)
Bangladesh	-10 to -25%		+60%
India		0% to -7%	
Pakistan	-10% to -16%		+3% to +6%

Source: See Tables 1 in Appendix

N.B. A decline in the Gini Coefficient means a more equal income distribution.

Since population growth is between 2.5% and 3%, a growth rate of 2-3% means stagnation in per capita income. Various series show Indian income distribution slightly improved or unchanged over the decade for which data are available, during which per capita income stagnated. Pakistan and Bangladesh show a distinct increase in equality during the 1960's when national income increased substantially more rapidly than population. On the other hand, when per capita income dropped after 1970 in Bangladesh and after 1973/4 in Pakistan, income distribution became distinctly less equal.

But these overall indices are not very reliable. For Pakistan and Bangladesh the conclusion on deterioration in the 1970's is based on a single year and, in the latter case, on rural income distribution only. Since it is

clear that there are annual fluctuations, one year does not provide very persuasive evidence. For India, it is not clear that different series are consistent and the conclusions are heavily dependent on the initial and terminal years selected. (See Appendix Tables 1). For Indonesia there are no worthwhile data on changes in income distribution and even for the other three countries the margin of error is undoubtedly large; the really rich do not answer income questions honestly for fear of the tax collector and the really poor are often not interviewed if they have no stable residence.

Still, these data at worst:

a) do not support the belief that income distribution became less equal in Pakistan and Bangladesh during periods of rapid growth.

b) do not support the argument that income distribution was less equal in Pakistan and Bangladesh than in India at the time of the political disturbances in the late 1960's. (see Appendix Tables 1A and 1B)

c) do suggest that income distribution became less equal during the period when the economy deteriorated in Pakistan and Bangladesh.

So the overall data do not provide support for the widespread belief that there is a negative relationship or trade-off between growth and equality, at least with respect to three large Asian countries.

3) Real Wages and the Rate of Growth

More reliable data, for more years, are available for real wage rates, that is the purchasing power (wages adjusted for changes in the cost of living) of workers. For all countries the wage data cover not only industry, but also wages paid in agriculture and, for some countries, also wages in construction and other urban informal sector activities. Therefore changes in real wages tell something about the income of a large proportion of the

poor. Of course, wage statistics do not directly indicate what happened to the income of welfare-type families (beggars, handicapped), and the important group outside the money economy, but even for the latter they provide an indication of changes in income. In all four countries there is a large group of small-holders in agriculture who cultivate their own land and also work for wages, at least during some seasons. Similarly, some of the self-employed in service or trade occupations will move between self-employment and wage employment in response to differences in income between the two. So if wages go up it is usually an indication that the incomes of small-holder farmers and of other self-employed have also risen, or the wages would rather soon be driven down by the increasing shift of the self-employed to wage employment. The relationship between changes in average product per person in agriculture and changes in real wages, (see below) supports the notion that movements in real wages reflect changes in the incomes of small-holders. Similarly, the consistent movements among wages in urban areas - for instance among construction, casual, and industrial workers - indicates that wages also reflect incomes in the urban informal sector.

The data which follow are largely for the wages of the unskilled and therefore the relatively poor. That fact, plus their widespread coverage (rural, industrial and urban informal) and consistency with other data on the income of the rural small-holder makes it possible to use wage data for inferences on the income of the poor.

Real wages data confirm and strengthen the conclusions one can draw from more scattered income distribution data that rapid economic growth is usually, but not always, favorable for the absolute income of the poor and does not normally result in a decline in their relative income. Real wages generally rise during periods of rapid growth, stagnate during slow growth and drop sharply when the economy deteriorates.

TABLE 2

Changes in Real Wages with Changes in Economic Growth Rates

	<u>Rapid growth</u> <u>(+4 to 8%)</u>	<u>Stagnation</u> <u>(+2 to +3%)</u>	<u>Deterioration</u> <u>(-2 to +2%)</u>
Bangladesh	+11 to +27%	0	-10 to -30%
Indonesia	+54 to 114%	-	-34 to -67%
Pakistan	+6 to +16%	-	-9 to -24%
India	-	-13 to +7%	-

Source: See Tables 2-5 in appendix.

N.B. a) Growth rates are total growth. With population increasing 2.5 to 3%, a growth rate of 2.5 to 3% means stagnation in per capita income.

b) Average wages for several years are compared to minimize random fluctuations. Only major series, not single firms generally used. See Appendix Tables 2-5 for specific years and series used.

Moreover in general the more rapid the rate of growth, the more rapid the increase in real wages. For instance, real wages rose about 2% a year in Bangladesh, where per capita income was increasing only 1.5% per year, while in Indonesia, where per capita income was increasing 5% a year, real wages rose 15% a year. In addition rapid growth in the wage-paying sectors normally also raised employment more rapidly. The manufacturing sector in Pakistan, for instance, increased employment by about 7% a year during its period of rapid growth in the 1950's and by 10% in the mid '60's. When sharply higher wage costs and disturbances occurred in the late 1960's employment declined by 10% in one year, followed by another temporary 15% decline with the disturbances of 1971/72.

Of course, factors other than the growth rate play a role in determining changes in real wages and in employment, among them government policy. As a result of these other factors, discussed below wages seem to have stagnated in Indonesia in the 1970's despite continued rapid growth and rose in Pakistan in the early 1970's despite slow growth. But on the whole it appears that in these four countries the more rapid the rate of growth the more rapid the increase in real wages.

4) "Surplus" Labor and the Average Product in Agriculture

That real wages rise with more rapid growth is surprising, since all four countries are likely to have "surplus labor" and the essence of surplus" labor, in most recent discussions of the phenomenon (the Fei-Ranis model) is that there is an unlimited supply of labor for the wage-paying sector at the prevailing wage. As soon as the wage rises slightly additional workers flood

and prevent a significant or continuing rise in real wages.

But if one accepts the original hypothesis of W. Arthur Lewis one can readily see why rapid growth usually, but not always leads to higher real wages. In the Lewis model surplus workers were family members in agriculture, not needed to produce the output of the family farm, but still fed, clothed and housed by the family. (They received the average product even if their marginal product was close to zero.) They therefore would not take a job for wages unless the pay equalled their self-employment income, that is their share of the product of the family farm, adjusted for differences in the cost of living and for differences in the attractiveness between working for wages or on the family farm. But as soon as the wage rose above their adjusted share on the family farm they would very quickly join the wage labor force. If one accepts this picture, then real wage should rise whenever the average product in agriculture increases. This would happen . if agricultural output increased more rapidly than the number of people who share in it. When the average product in agriculture rises, then the "reservation wage" of the self-employed in agriculture will rise as well: those who share in the income from the family farm will not accept wage employment unless the wage also rises. Any new factories or businesses set up will have to pay a higher wage if they want to attract workers away from family farms, since the workers' income has increased with agricultural output.

Then there is a rather simple explanation why a rapid rate of growth in the four countries means an increase in the real wage. Agriculture contributed between 30 and 60% of the national product directly and at least another 10-20% indirectly through its impact on trade, services,

construction, government and industry. Therefore, in general, a high growth rate in agriculture, by raising the average product, increases the reservation price of farm family labor and can therefore force an increase in the compensation which the wage paying sector needs to provide to attract this labor.

There is considerable support in the statistical analysis for the argument that changes in the average product in agriculture produce corresponding changes in real wages. (see Section 3c to 3e in Appendix). On the other hand, the statistical relationship between the annual rate of growth (in the National Product) and wages becomes quite weak, and once one has taken account of the effect of rising average agricultural product on wages. It therefore appears that it is primarily the effect of average agricultural product on the supply of labor which affects wages, not the increase in demand for labor, influenced by the rate of growth.

5. The Wages of the Landless and Informal Sector Workers

Even if one accepts that land-owning farm families divided their income among all family members, although the labor of some is not needed, the question remains, what keeps up the income of the landless and the workers in the informal sector (shoe shiners, barbers, hawkers and peddlers, rikshaw pullers, prostitutes, casual workers, scavengers, etc.) If some of them are also "surplus" - contributing little or nothing to output or convenience - why do their wages not drop to equal their (low or zero) contribution to output, until their income becomes so low that Malthusian factors, i.e. starvation, bring a new balance? (That is if their marginal product is close to zero why is their wage not also close to zero?)

There are three possible explanations:

a) The surplus labor phenomenon is limited to land-owning families; the number of landless rural workers and urban informal sector workers is sufficiently limited so they do contribute significantly to output and receive a wage or income equal to their contribution (their wage equals their marginal product).

b) There is a work and income sharing system for the landless and informal sector workers, enforced by social sanctions and informal organization which assures that no one lowers the price of their labor and all share in the income available from their activity (i.e. although their marginal product is close to zero, their income is close to the average product). For instance, there may be 100 landless laborers in a village or rikshaw pullers in a neighborhood, each working an average of 15 hours and earning 40 rupees. All would be quite willing to work 30 hours for 50 rupees, but then half of them would starve. Village custom which attaches particular workers to particular landlords, or the informal organization of rikshaw pullers who all come from the same rural area, assure that all share in work (and income) at the accepted wage of 40 rupees and that no one gets more work for more total, but less average, pay by lowering his price.

c) The landless and informal sector workers have discovered, by trial and error that they will only have a limited amount of work and charge enough per day worked (or shoes shined, or miles travelled) to survive with that amount of work. No one lowers the price, even if there is no informal work and income sharing organization, because they know others will follow suit and the result will be starvation for many, possibly including the one who started the price cutting.

The three explanations are not inconsistent and could operate simultaneously to keep wages or income of landless and urban informal sector workers roughly at the level of the average product in an activity, even if the workers are truly "surplus", that is there are more workers than needed (their marginal product is zero). There is evidence that people in particular occupations tend to come from the same geographic area and have evolved a social mechanism for allocating territory and avoiding clashes, that is for avoiding price competition.¹ The allocation of territory can be physical or a queuing arrangement, which gives everyone accepted a share of the business or activity and therefore a share of the income. The result would be that the earnings of the self-employed, instead of being bid down by competition, are maintained at a level at which everyone earns enough in total (wage times turnover) to survive, or to provide no incentive to return to the family farm. ¹

Then there is another reason why a higher rate of growth can raise the income or wages of the poor in the informal sector: as the total income they share rises, because there is increased demand for their services, their average income also rises under work and income sharing. Moreover, with more jobs in the formal sector there can be fewer sharing the income in the informal sector, again raising the average income in the informal sector. For instance, with rapid growth more persons may patronize rikshaw pullers. If simultaneously some of the pullers have gone off to work in factories, then a smaller number share the increased business and their income will rise for both reasons.

¹ See G.F. Papanek and D. Kentjorojakti, "The Poor of Jakarta", Economic Development and Cultural Change (October 1975).

The landless may benefit from another effect. As average product in -- agriculture increases their wage or income may go up if it is related to the size of the harvest, as it clearly is in some traditional Indonesian harvest practice and reportedly also for the retainers performing traditional services in South Asia.

As the income of the landless and of informal sector workers rises their reservation wage also increases. That is, some will no longer be willing to move into the formal or commercial wage paying sector unless the wage paid there also increases. As long as there is substantial movement among the different labor markets - family workers on farms or in businesses, landless agricultural workers and share croppers, informal sector workers whether self-employed or employees - this movement will, usually with a lag, keep wages and income generally rising and falling together in different activities. The effect of rapid growth in raising the average income, and reservation wage, of landless laborers and informal sector workers, will then tend to raise wages throughout the economy.

6. Other Effects of Growth on Real Wages

Rapid growth (or deterioration) in the economy can also influence real wages for other reasons, especially in the short term:

a) With rapid growth, demand for many products will increase rapidly. If employers consider the increased demand to be permanent, they are likely to hire additional workers at the prevailing wage, primarily increasing employment. However, if employers are uncertain whether the increase in demand will continue, they may prefer to increase the wages of their present workers, paying overtime or bonuses to obtain additional work because:

- there are hiring costs for new workers.
- there are familiarization costs for them.
- it may be difficult to fire them later if demand drops (e.g., for several years the Pakistan Government made dismissals almost impossible).

{ With rapid growth, some employers will always be operating on an overtime basis, raising real wages, while others will be hiring more workers. (The former operate on the inelastic short-run supply curve, the latter on the highly elastic long-run curve).

- b) With increased demand and profits as a result of growth, the cost of strikes, sabotage or just slow work on the part of the workers increases. Therefore employers have a greater incentive to increase wages to avoid such workers' response, even if they can replace the reluctant workers at the prevailing wage. They may prefer to pay somewhat more to avoid labor turnover costs and temporary disruption.
- c) Employees may have in mind a "fair" wage which is related to employers' profits. With higher profits, they may demand a higher wage, either through their trade unions (India) or by pressure without formal unions (in the other three countries, unions were banned or ineffective during periods of rapid growth).
- d) Employers too may believe in a "fair" wage, related to profits, or they may have objectives other than profit maximisation which they can indulge more readily when the enterprise is profitable. Employers may always prefer workers that smile to workers who spit, but when business and profits are bad because the economy is stagnating they may not be able to indulge this preference. When profits are high they can afford to do so and may also feel a moral obligation to have workers share in the good times.

It is difficult to demonstrate the presence of these factors making for higher wages in periods of rapid growth - overtime instead of additional workers, higher wages to avoid disruption, and employer and worker belief in a "fair" wage.

They are all related to profits, not to economic growth as such. One would need data on profits for individual firms to demonstrate that when profits are high wages are raised for any or all of the above reasons and then to show that profits rise with the rate of growth. Both are plausible, but profit data for individual firms are not available to provide empirical support. However, the slight indirect evidence which is available is marshalled in the Appendix.

e) One other relationship between the rate of growth and real wages is more clear cut and demonstrable: when the wage paying part of the economy deteriorates badly, real wages drop. Output declined in Indonesia, from the mid 1950's to the mid 1960's, in Pakistan after 1973/4 and in Bangladesh after 1970/1. In all three countries labor had considerable political and economic strength during the period of deterioration, in part because the populist governments then in power wanted to maintain labor support. Government pressure, or government decisions with respect to public enterprises, could force the hiring of additional workers. In Bangladesh industrial employment was increased by more than 50% in one year (1972/3 to 1973/4) and by a further 20% in the next two years. Even over the previous high water mark the increase was over one third by 1975/6 despite a decline in output over these years. In Indonesia, plantation employment increased by almost 25% from 1955 to 1963 per hectare harvested, by 17% in total. But in neither country, nor in Pakistan, could worker's political power, or government pressure, keep real wages from dropping. The resources were simply not available. }

When the income of the enterprises declined because the needed imported inputs were short, or supplies were disrupted, or management was poor, or demand had declined, or strikes disrupted production, the costs had to be borne either by the public treasury; or by the managers of public enterprises, the owners for private firms; or by the workers; or by all three. Part of the cost was always borne by the public in the form of direct or indirect subsidies (e.g., through constantly expanding credit from the nationalized banks). But when government was unwilling or unable to provide enough of a subsidy, the government managers or private owners usually could defend their interests better than unskilled workers. In all three countries workers eventually saw their wages decline. If government pressure had expanded the labor force the decline in wages was especially severe, since a declining wage had to be shared among more workers.

This decline in real wages could be brutal. In Indonesia plantation employment increased by 17% but real wages declined by over 60%, so the total compensation to labor decreased by almost half.

In Bangladesh, the increase of about 40% in manufacturing employment, accompanied by a 50% decline in real wages, meant an essentially unchanged wage bill. The industrial workers and his family always felt the decline in wages, while the increase in employment might benefit another family. In Pakistan the decline in real wages in industry was "only" a bit over 20%, but employment seems also to have decreased by 6 to 20%. The total wage bill may therefore have decreased by 25-35%.

To some extent the declining wages were compensated by increased services (education, housing, health) provided by the populist governments then in power. Moreover, the times of declining real wages were often also times of greater

opportunities for diversion to personal use of inputs and outputs; secondary jobs could more readily be taken by workers since some had little to do in the overstaffed enterprises except collect their pay; and some workers' families undoubtedly benefitted from an additional wage earner when employment was expanded. But the decline in workers' income nevertheless was a brutal one. A 20% to 30% decline in an already very low income (say \$5 a month for Javanese plantation workers in 1969 prices) is not easy to absorb.

Why then did the workers not return to self-employment, particularly in agriculture, when the wages dropped sharply? There may be a ratchet effect here, with movement into the wage earning sector relatively easy, movement out relatively difficult. Extended families will be more reluctant to see a return to the family farm by the wage earner and his immediate relations, since that depresses everyone's income, than they were to see him leave to take wage employment years ago, with increased income the consequence. Moreover, technology can have changed in the meantime - when the wage earner moved away, a machine may have been substituted for him and even his previous work may no longer be there. Many city families regularly visit their home villages and even work there in some countries.¹ Those who do are usually the urban self-employed often bringing funds from the city. This is obviously quite different from a situation where low wages exert pressure on large numbers of wage earners to move back to their villages requiring full support for extended periods. Finally, there are, for some families at least, severe displacement costs. As wage earners, they have access to schools, health facilities and steady income which self employment does not provide. In Bangladesh there was, in addition to these general reasons, a deterioration in security in the country-side at the same time as the wages declined.

¹See "The Poor of Jakarta" op. cit.

For all these reasons, it is difficult to return to the village, to subsistence agriculture, and to a share of the output of the family farm, when real wages drop in the city, especially if the drop is believed to be temporary. The lag in return movement seems to be even higher than in migration to the city when wages rise. And if the decline in the wage-paying part of the economy is a severe one, the needed reverse migration may be so massive that it just does not occur fast enough to equilibrate real wages and average product in agriculture.

In any case, it is clear that in three of the four countries, very severe reductions in real wages occurred over three to ten years as a result of a deterioration in the economy.

7. Why Does Growth Raise Wages - A Summary, Evidence and Policy Implications

Several reasons have been given why the rate of growth and real wages increase and decrease together:

a) The rate of growth in these four countries depends heavily on the rate of growth of agricultural output; as agricultural output increases more rapidly the average product in agriculture rises, family members who share in the average product of family farms then raise their reservation wage, the income they require to accept wage employment, and reduce the supply of wage labor until wages or income in non-farm occupations rise.

b) Landless laborers and share croppers, to the extent they share in the output of agriculture, also raise their reservation wage when agricultural output per worker increases.

c) More rapid growth can raise the demand, and therefore the income, of the informal sector (eg: peddlers) and decrease the number of people in the sector. As the average income of people in the informal sector goes up, so does their reservation wage - the wage that the formal sector has to pay to attract workers.

d) More rapid growth can increase the demand for the output of the formal sector. If employers are doubtful that the increased demand will continue they will be reluctant to hire additional workers, because of turnover costs and the difficulty of dismissing workers. Instead they may pay overtime and bonuses to get more output from their current workers, raising the average wage.

e) More rapid growth will increase the profitability of many enterprises, and can raise wages because:

- the cost of worker dissatisfaction can be higher
- workers may have a notion of a "fair" wage related to profits and be dissatisfied if not paid more when profits rise
- employers may also feel an obligation to pay a "fair" wage, or may prefer a higher wage for other non-economic reasons, and profitability allows them to indulge that preference.

If wages rise with a rapid rate of growth for these reasons, then it is possible for wages to stagnate despite high growth if:

a) the growth is due to activities which create few jobs, so that most additions to the labor force are not absorbed in the formal sector but are forced into the informal sector. If the number of people in that sector increases more rapidly than its total income, this will drive down the wage or income per person and therefore also the reservation wage.

b) the work and income sharing mechanism breaks down widely, particularly in agriculture. Some landless laborers and sharecroppers, who previously participated in agricultural income although their work was not really needed, would then be forced to join those scrabbling for a living in the informal sector, reducing average income and the reservation wage.

¹An interesting discussion of the work and income sharing mechanism in a different context is in Harvey Leibenstein "X-Efficiency Theory, Conventional Entrepreneurship, and Excess Capacity Creation in LDCs" in Essays on Economic Development and Cultural Change in Honor of Bert F. Hoselitz (ed. N. Nash),

Finally, the relationship between growth and real wages exists also on the downward side. When economies experience severe deterioration in the commercial, wage paying sector, the enterprises in that sector may simply not have the resources to pay the same real wage as before. Their workers may, however, not be able to return to self-employment, especially on family farms, even if the average income there is now higher than their wage. The result can be, and was, a brutal decline in real wages in Indonesia in the early 1960's and Bangladesh and Pakistan in the early 1970's.

Only parts of this description can be supported by the data. A relationship between the average product in agriculture and the real wage is reasonably clearly established, (Appendix sections 3c-e) lending some support to the notion of a reservation wage in agriculture. That a deterioration in the economy leads to a decline in real wages is quite obvious. Rigorous support for the other arguments is generally lacking. However, they are plausible and they do explain why wages did not rise in Indonesia between 1970 and 1976 despite a rise in average agricultural product.

The policy implications of this picture are clear. First, the relationship between average product in agriculture and real wages adds another, and powerful, consideration to other arguments for priority to agricultural development. In the four labor surplus economies examined, wages in many sectors of the economy seem to rise with average agricultural output. Since wage earners are among the lower income groups, if one includes those who work in agriculture, construction and the informal sector, an increase in average agricultural product appears to be an effective means for raising the income of important groups of the poor throughout the economy.

More broadly, rapid growth of the national product appears to be favorable for wage earners while a disruption of the wage economy can seriously hurt workers. In all three instances examined the disruption was due at least in part to populist measures designed to benefit workers. But the wage earners consistently paid a price, at least in terms of wage income, whenever the economy was disrupted by such populist and nationalist policies as widespread and abrupt nationalization, sharp increases in the level and coverage of the minimum wage, the rapid expansion of military expenditures and encouragement of class conflict. Whether the populist and nationalist measures, if consistently carried out over a longer period, would have been beneficial to this group of the poor one cannot say. Nor does this paper examine the benefits to wage earners from other measures of these regimes. the expansion of access to education and health services, land tenure reform, or the important increase in respect and in self respect which some of these government provided. And, of course, there are development strategies which differ from the alternatives examined.

It is not really surprising that in a time of shortage, the managers (whether public or private), the remaining capitalists, the civil servants allocating scarce resources, the professionals, the military, and the land owners were all better able to protect their incomes against deterioration than the workers. Among the workers, the organized ones fared better than the unorganized ones in the modern sector, who in turn fared better than those in the informal sector. But all workers suffered from the deterioration in the economy in countries whose elite was drawn from non-working classes groups. Therefore, at least under the circumstances prevailing in the four

economies, policies which disrupt the economy had a cost for workers, policies which increased the rate of growth generally benefitted them. Rapid growth then was not an alternative, but a contribution, to greater equity.

If, as suggested, real wages are affected by growth in part because wages are influenced by the average product in the informal sector and the strength of the income sharing mechanism in that sector and in agriculture, then several other policies follow:

- the provision of employment in the commercial, modern sector not only increases the income of those who obtain the jobs, but also of those who remain in the informal sector. The fewer the number in the informal sector, the higher their average product, therefore their income and reservation wage. The effect of labor intensive industry, like the effect of increased agricultural output, is therefore felt throughout the economy;

- conversely, if wages in the modern sector are raised by fiat the benefits to modern sector workers need to be measured against the losses of other workers, whose average product and reservation wages will decline if the result is less modern sector employment;

- any policies which undermine work and income sharing will push more workers into activities where work and income sharing continues, lower the average product in these activities and, via the reservation wage, lower wages elsewhere. So a shift from share cropping or harvest sharing to hired labor can have repercussions in large parts of the economy.

B. Inflation and Real Wages

Real wages were affected not only by growth, but also by the rate of inflation. Adjustments in (nominal or) money wages seemed rather consistently to lag behind price changes by about two years, whenever price changes were rapid and unexpected.

1. Reasons for the Effect of Inflation on Real Wages.

There are a variety of plausible reasons why rapid price increases can result in a decline in real wages. Neither employers nor employees can accurately forecast the rate of inflation and it is only in conditions of hyperinflation that money wages are changed as frequently as every month. Normally, many wage rates are changed only once a year at most. Then real wages will decline:

a) in proportion to the rate of inflation if wages are adjusted retroactively at the end of the year/beginning of the next year, to take account of the past year's inflation.

b) in proportion to the acceleration in inflation if wages are raised at the beginning of the year to take account of anticipated inflation, on the assumption that next year's inflation will equal the past year's.

However, if employers and employees attempt to stabilize real wages by anticipating inflation, then real wages should not be affected by the rate of inflation if either (i) they learn from experience and predict accurately (ii) they overshoot or undershoot in a random fashion. (It is only if decision makers are not "rational", but stubbornly assume that the future rate of inflation will be exactly the rate of the past, that wages would always overshoot (real wages rise) when inflation slows down and undershoot (real wages fall) when it speeds up.

The picture is further complicated because price data are available only with a lag, the years for which wage and price series are calculated are not always the same years, and because wages may be adjusted in the 'middle' of a wage or price year (eg. wage statistics may be collected for a July 1 to June 30 year, wage adjustments may be made January 1, based on price changes for January to June of the previous year). It therefore becomes very difficult to specify a model which accurately tests the various hypotheses. It may also be that wages are adjusted only to take account of past inflation when the rate of inflation is low, but that a further anticipatory adjustment is built in when inflation has been high for some time.

Clearly if the rate of inflation is low, it makes little difference which adjustment mechanism prevails, the effect on real wages will be small. But if it is high, the losses are significant if one assumes only a retroactive adjustment.¹ With an anticipatory adjustment, the level of inflation does not matter, only its acceleration does. With a mixture of the two, a low and steady inflation will hardly affect real wages, a rapid and accelerating one will have serious effects.

2. Evidence on the Consequences of Inflation

As a matter of fact in Pakistan, where the rate of inflation was very low for all but three years in the 1970's,² the impact of inflation on real wages was not clearly demonstrated in regression analysis. (see Appendix) Moreover, the picture is further complicated because this was also a period when average

¹ eg: If over a year inflation is a steady 1% a month: if next year's wages are increased to take account of the first eight months of the increase for which information is available; then the loss in real wages will be 9%; i.e. wages at the beginning of the new year will go up from 100 to 108, but prices will go from 112 at the beginning to 125.5 at the end of the year; or a loss of 4% at the beginning and of 14% at the end.

² The coefficient of variation of prices was .18; for India, the country with most stable prices of the other three, it was nearly twice as high at .32.

agricultural output had dropped and it is obviously difficult to know whether declining real wages were due to accelerating inflation or declining agricultural production. So statistical tests generally showed inflation as not significant in affecting real wages.

But for the other three countries, and for Pakistan when less rigorous tests are used, the rate of inflation had a significant negative effect on real wages. (Table 3) In India and Bangladesh typically nominal wages rose by only 30-40% as much as prices in the same year and even in the second year had only made up 40-70% of the price rise. Indonesia has had extensive experience with rapid inflation. The only long series available, for plantation workers, showed 60-80% of the price increase made up by nominal wage increases the first year and the remainder compensated for in the second year for the all-Indonesian series. But when inflation reaches several hundred percent, even if wages catch up by 70%, the losses in real terms are still very significant, as the real wage analysis shows. Semi-annual data are available for the 1973-74 inflation in Indonesia, and they show a decline in real wages over 18 months, with another 18 months of increase required to bring real wages back where they were in 1972, or a 3 year adjustment process.

If one isolates the relatively short periods of inflation from longer term trends of growth (or stagnation), one can see that the effect of inflation can be quite dramatic, in fact brutal for the affected workers. Even a 5-10% decline in real wages averaged over a two year period, characteristic of the mild inflation of India, Pakistan and Bangladesh in the mid-1960's, is a blow to a low income wage earner, especially since some groups suffered a 10-20% decline in a single year. The drop of 20-30% in real wages, typical of the more rapid inflation in Indonesia, Pakistan and Bangladesh in the mid-1970's, was obviously even more serious. (see Table 3)

TABLE 3
SHORT-TERM CHANGES IN REAL WAGES RESULTING FROM INFLATION

	Annual Rate of Price Change-percent	Changes in Real Wages With Relatively Stable Prices Rapidly Rising Prices	
<u>Bangladesh</u>			
56/9 to 59/64	1 to 3	+11% to +14%	
61/4 to 64/47	5 to 14		-10% to +7%*
67/71 to 71/75	42 to 49		-32% to -42%
73/5 to 75/7	-9 to -20	+19% to +53%	
<hr/>			
<u>Indonesia</u>			
66/8 to 69/71	9	+86%	
72 to 73II-74I	53		-18%
74I to 1976	12	+28%	
<hr/>			
<u>Pakistan</u>			
62/4 to 64/6	2	+18% to +13%	
64/66 to 66/68	8		-5% to -8%
71/3 to 74/6	23		-24% to -9%
<hr/>			
<u>India</u>			
53/56 to 56/58	12		-4 to -26%
58/60 to 60/62	0	+9 to +16%	
64/6 to 66/8	21		-4 to -5%

* Rise in manufacturing wages, probably as a result of structural change

Note: a) Prices are the average rates of inflation during the period being examined; that is, during the later group of years.

b) Wage Changes show the change between the average for the later period as against the average during the base period. Two or four years are averaged for the comparison to reduce the effect of random, short-term fluctuations.

c) The wages shown are: Bangladesh: Average of three series except for first period when agriculture and manufacturing only; Indonesia: Plantation wages for all Indonesia. Pakistan: manufacturing and textiles. India: Rural, manufacturing, textiles.

Source: Tables 2-5 in the Appendix.

These declines occur even when two or three-year averages have been compared to minimize random fluctuations. If single year changes are compared, the decline in real wages often increases further. For instance, from 6% for Indian rural wages for 66/67 to 67/68 to 10% for 1967 to 1968 alone. Inflation in India, Pakistan and Bangladesh in the mid-1960's, when prices increased by 10% to 20%, generally produced real wage declines of 5 - 10% if two year averages are used and 10 - 20% if one year comparisons are made. The one series for which semi-annual data are available, the Indonesian plantation wages, shows a drop of 25% in the real wage in an 18 month period.

During short periods of inflation the compensating factors are absent which can soften the effect of longer-term wage deterioration: more employment, greater access to government services, more opportunity for secondary and illegal incomes. A 25% decline in purchasing power then becomes a very severe blow.

Since Indonesian semi-annual data and the regression analyses suggest that it takes two to three years before wages catch up again with prices after prices are stabilized, the decline in workers' income can be both quite severe and quite long.

The effect of a given rate of inflation is different for the four countries. For Indonesia a 9% or 12% rate of inflation was accompanied by a rapid increase in real wages; for Pakistan (and Bangladesh) a similar 7 - 10% rate of inflation was accompanied by a decline. There are two likely reasons for this difference:

(i) It has, of course, been argued earlier in this paper that inflation

is not the only factor influencing wages. Changes in average product in agriculture, for instance, may counteract changes in inflation.

(ii) For Indonesia a 9% rate in the late 1960's represented phenomenal stability, since previous rates of inflation ranged between 100% and 1,000% a year. For Pakistan a 7% rate was tripling of the previous experience. Indonesian employers and employees had adjusted to, and were expecting, very rapid price increases. Pakistan's were expecting a much lower rate. The results are therefore quite consistent with the hypothesis that not only the absolute rate of inflation, but also the change in the rate, affects real wages. The complexity of the relationship between prices and real wages is one reason why the results are not always statistically significant. Moreover, some firms, especially if unskilled workers' wages are a small part of total cost, can and do protect their workers against short-term price fluctuations because they wish to keep a stable and contented labor force.

For wage earners as a whole, however, Table 3 makes it clear that sharp setbacks in income, lasting two to three years, can occur as a result of rapid increases in the prices of the goods they buy. Some of the two to three year periods of declining wages have occurred during decades of rapid growth, and succeeded several years when wages were rising quite rapidly. It is plausible that expectations have been raised during periods of rapid increase in real wages. If wages then not only stop rising, but actually fall 5-30%, workers are likely to feel especially disappointed and angry.

Political unrest is a natural consequence of declining real wages. If a sharp drop in real wages over a year or two occurs during a decade or more

of rapid economic growth, the resulting political unrest may then be attributed, incorrectly, to the effects of growth. Sharp economic setbacks as a result of poor weather or changes in the price of export commodities, are inevitable in the vulnerable economies of many less developed countries, even if the long-term rate of growth is high. Since these setbacks usually result in an inflationary episode, which lowers real wages, it is not surprising to find political unrest during periods of rapid economic growth. It can be caused by the serious temporary decline in wages, all the more difficult to bear if it follows on an earlier rapid rise in wages.

3. The Consequences for Policy

Most governments and political leaders are painfully aware that increases in the price of wage goods, principally food grains, will cause political problems. But the magnitude of the effect has often not been realised. The data from the four countries suggest that (a) while a low rate of price increase does affect real wages, because money wages tend to lag behind even these price changes, price increases of 0 - 6% generally have little discernible effect on real wages, but (b) but when prices rise 8 - 20% or when inflation accelerates in countries where such price rises are normal, real wages of some large groups can and do decline by 10 to 20% (or more) in a year or two.

Programs to stabilize the prices of wage goods, through storage or imports or both, therefore can have substantial benefits in stabilizing real wages and in preventing the hardship and unrest which otherwise occur. Storage or import programs have sometimes been opposed by economists because of their cost, but the data for the four countries indicate that

the alternative may be serious declines in real wages for workers in industry, agriculture, construction and other activities, as many wages follow prices only with a considerable lag.

C. The Effect of Minimum Wages, Mandated Employment and Unions

There is rather little one can say about other factors affecting wages because their impact was usually of short duration and uncertain magnitude or because it could not be analyzed with the data available.

1. Minimum Wage Legislation

Some minimum wage legislation was generally on the books in all four countries, but it was ineffective most of the time because it applied only to manufacturing firms above a certain size (generally 10 - 20 workers in South Asia), because for long periods of time employers knew there would be no enforcement action especially for smaller firms, and because the minimum wage was usually adjusted for inflation only with a lag, so that the minimum wage was generally lower than the actual wage in most enterprises where minimum wage legislation applied.

Since most of the data used here consist of averages for many firms and different categories of workers, it is particularly difficult to identify the effect of minimum wage legislation. This is certainly one reason why India shows no effect of minimum wage regulations on the real wage. Moreover, Indian minimum wages were kept quite low and seem to have had little effect for most workers. In Indonesia minimum wage legislation was not effective for much of the period under review and its impact was probably negligible.

In Pakistan and in Bangladesh, there were several years when a major increase in the minimum wage was decreed, setting the minimum wage

substantially above the wage actually paid to the great majority of workers, and dramatically raising the real wage. The first year when this occurred was 1969, following the rioting and strikes which began in (West) Pakistan, spread to East Pakistan (now Bangladesh) and led to the ouster of President Ayub Khan. In Pakistan there was another effective increase in 1972/73, but subsequent increases were less than the rate of inflation. In both Pakistan and Bangladesh the impact of minimum wages in the few years when they were effective is picked up by the statistical regression analysis in a significant (dummy) variable for various series of wages in manufacturing.

It is logical and supported by these results, that government is able to raise real wages for organized sector workers in large enterprises. What is more surprising is that in the years when minimum wage legislation was effective, the real wages of some workers outside the organized manufacturing sector also rose.¹ The explanations for this are conjectural: this was a period of labor unrest, of strikes and of demonstrations, when government was clearly anxious to pacify workers. Employers with a regular labor force, not one hired by the day and changing from day to day, may have considered it wise to raise wages rather than face strikes or demonstrations, and workers may have demanded wage increases, even if minimum wage legislation did not apply to their firms.

2. The Effect of Minimum Wages and Government Policies on Employment

But the conclusion is clear: government can raise real wages substantially for a large proportion of the organized urban labor force, with some effect on other workers as well, by a massive increase in the (nominal)

¹For instance, in Pakistan the minimum wage variable was significant for the small cold storage unit and construction labor, but not for casual workers.

minimum wage. One consequence is likely to be reduced employment, if managers are free to reduce their labor force. Obviously, as real wages rise, the employment of labor becomes less profitable and fewer workers will be employed. But there are two factors which work against this effect of increased real wages. First, many employers may be earning abnormal profits because of a variety of distortions in the economy -- eg: an import licensing system that gives windfalls to those awarded licenses; government protection against foreign or domestic competition for monopoly producers; indirect subsidies via cheap credit. Then there may be no strong pressure to reduce the labor force, even if wage costs increase, especially if the share of unskilled labor in total costs is small. Increased wages may mean only negligible reductions in profits, and therefore produce no noticeable decline in employment¹ if managers are more interested in avoiding trouble than in a small increase in profits. However, while employed workers may not lose their jobs, at least in the short run, higher real wages will undoubtedly reduce the new employment created.

Second, decreased employment can be prevented, and even increased employment can be made to accompany rising real wages, by government fiat. A government concerned with the income of workers in the organized sector can increase the number of jobs available to them as well as their wages, especially if a substantial proportion of the organized sector is under public ownership and management. But this is a costly proposition for the economy and the government, and in fact higher government mandated wages usually meant less employment.

¹E.g., one firm in Indonesia indicated that all labor costs were only 10% of total costs. Costs of unskilled labor, potentially affected by minimum wage legislation were probably less than 3% of total costs. A 20% increase in real wages then would be such a negligible share of total costs that it did not cause any change in employment for a firm with ample profits.

TABLE 4
RELATIONSHIP OF EMPLOYMENT AND WAGES

Indonesia			Pakistan			Bangladesh		
Years	Changes In Wages	Changes In Employment	Years	Changes In Wages	Changes In Employment	Years	Changes In Wages	Changes In Employment
1955-1963	-52%	+17%	1966/68-1968/71	+25%	-8%	1968/69-1969/70	+14%	-47%
1963-1966	+18%	-6.5%	1968/71-1972/73	+18%	-14%			
1966-1972	+66%	-19%	1972-1975	-35%	+17%			

Note and Sources: Indonesia: Plantation wages and employment for all Indonesia from Appendix Tables 4.
Pakistan and Bangladesh: all of manufacturing from Appendix Tables 3 and 2 for wages; employment from Statistical Yearbooks and Bulletins.

Sharply higher wages imposed by fiat quickly raise costs for most enterprises. The governments did subsidise public enterprises. But private firms usually did not receive subsidies and when wages were increased they had to find some way to shed workers, to lower real wages or to shut down. Even for public enterprises, constraints on the budget limited subsidies. When no further increase in subsidies was forthcoming, public enterprises faced the same alternatives. There is no inherent reason why governments cannot continue to subsidise more workers or higher wages than needed by the organized, modern, politically important sectors. But in fact, in the countries under review where resources are severely limited the three governments that actively pursued policies

designed to benefit workers in the organized sector rather quickly seem to have found the costs excessive and accepted lower wages or less employment.

3. The Effect of Unions

The effect of trade union activity over time is even more difficult to trace than the effect of government intervention. Strikes were prohibited and/or union activity severely curtailed in Bangladesh and Pakistan during much of the 1960's, and in Indonesia from the mid-1960's on. At other times unions were operative in only some industries and within industries in only some plants, and even where unions existed they were often ineffective, especially for the unskilled workers whose wages are primarily under study. Of course, the changes in wages over time, which are being analysed, do not give any indication whether there is a difference in the wages of unionized and non-unionized workers in the same activity, but there is some slight evidence for three propositions:

a) Unions may have been quite effective in maintaining or raising wages in capital intensive units, where labor costs are a small fraction of total costs, potential labor power is high and workers are more likely to be organized. The evidence for this contention is impressionistic, stemming mainly from differences in wages between labor intensive and capital intensive units observable when individual firms were interviewed in Pakistan and Indonesia, plus statements by a few managers of such units that a union was active. While the conclusion is plausible and has been shown to apply elsewhere, this study really provides no significant evidence for it.

b) Worker power did raise wages in the short term in industry in several instances. For instance, in Pakistan and Bangladesh the increase

in real wages in the late 1960's, and in the early 1970's for Pakistan, was almost certainly affected not only by the minimum wage, but also by strikes and other forms of workers' action. Workers' actions also were a major reason for sharp increases in the minimum wage. Since both occurred in the same years, the separate effects cannot be distinguished. However, increased wages in these years in some fields where the minimum wage was not effective suggest that workers' action had an independent effect and it certainly was crucial in pressuring governments to raise the minimum wage. So the highly significant variable for government intervention to raise the minimum wage really represents in large part the effect of direct and indirect workers' action.

c) Over the long term, wages declined most in the three countries other than India when workers' pressure and political power were greatest, rose when it was weaker. This apparent paradox stems from the relationship between the rate of economic growth and real wages discussed earlier. Labor power was greatest under governments that were little concerned with economic efficiency or production, when economies stagnated. Wages declined, despite labor's strength, because labor power was inadequate in a labor surplus economy to protect workers' interests in a situation of declining per capita resources. Without labor power, the negative effects on real wages might have been even greater. Governments at the time were also concerned to solidify and increase their political support by increasing the number of workers given jobs in the organized sector, over which government had extensive control. Whatever resources were available to pay wages, therefore, had to be shared among a larger number of workers.

In these four poor, labor surplus economies, the effectiveness of the normal economic weapons of trade unions in mixed economies is bound to be limited. It proved simply inadequate to obtain for labor a constant absolute wage in circumstances where the total income of many enterprises was declining and usually had to be shared among an expanding labor force.

D. The Political Consequences of Changes in the Real Wage

It is difficult to provide convincing evidence on the political consequences of changes in real wages, because no good index exists of support to government or conflict with employers in these four countries. The usual index of labor dissatisfaction, the number of days lost in labor disputes, of course, cannot be used for unorganized workers who do not usually engage in formal strikes and whose disputes are not recorded. Moreover, strikes were illegal for long periods in three of the four countries, so an index of man-days lost is more an indication of the legal status of strikes and the enforcement of anti-strike legislation than of worker dissatisfaction.

An index of riots proved impossible to obtain for most countries and their incidence also depends as much on the effort at suppression as on discontent. Moreover, it is impossible to distinguish riots caused by religious, language, political or regional disputes from those based on economic grievances. For instance, riots in Bangladesh increased by more than 50% from 1970 to 1972 and all crimes by over a third, while real wages dropped by 20-35% and these two facts were certainly related. But the increase in riots also had something to do with the ending of martial law, the independence of Bangladesh and so on.

Therefore, the best that can be done is to list the major civil disturbances that occurred in the four countries and, conversely, those electoral triumphs of government that seemed to reflect some genuine support, rather than outright manipulation, and compare them with changes in real wages at the time. This is not very accurate, but it is quite suggestive.

TABLE 5
POLITICAL EVENTS AND REAL WAGES

	<u>Changes in Real Wages</u>
1. Election confirming Ayub Khan as President of Pakistan (incl. present Bangladesh) 1964-65. (61-63 compared to 63-65).	Agric. +10% (Bangladesh) Manuf. + 8% (Bangladesh) Manuf. +14% (Pakistan)
2. Riots leading to ouster of Ayub Khan, 1967/68. (64-66 compared to 66-68) (N.B.: Riots doubled during this period, from 3,500 to 8,000 or more).	Agric. -13% (Bangladesh) Manuf. 0 (Bangladesh) Manuf. - 5% (Pakistan)
3. Riots/elections in favor of autonomy of Bangladesh and ouster of military regime in Pakistan 1970-71 (66-68 compared to 68-70).	Agric. +11% (Bangladesh) Manuf. +14% (Bangladesh) Manuf. +13% (Pakistan)
4. Ouster of Bangladesh Awami League Government, 1975 (69-71 compared to 73-75).	Agric. -37% Const. -29% Urban -28% Manuf. -60%
5. Election confirming President Ziaur Rahman as President of Bangladesh, 1978 (74/5 compared to 76/7) (N.B.: Crimes also decreased by 20%)	Agric. +53% Const. +53% Urban +31% Manuf. +47%
6. Demonstrations/riots supporting ouster of Soekarno as President of Indonesia 1966-67 (60-61 compared to 66-67)	Plantations -25% (Indonesia) -25% (Java)
7. Demonstrations/riots stressing economic grievances, Indonesia 1973-74 (Plantations 72-I to 72-II/74 -I Public Works 71/72-I to 72-II/73 Industry 72-73)	Plantation -24% (Indonesia) -27% (Java) -28% (Sumatra) Pub. Works -39% (Sumatra) Industry -17% (Indonesia)
8. Failure of student demonstrations in Indonesia to gain wider support, 1977 (74-I compared to 76).	Plantation +28% (Indonesia) +19% (Java)
9. Electoral success of Indian Congress 1971 (67/69 to 69/71).	Rural 0 Industry +7% Textiles +7%

Sources: Appendix Tables 2-5 for real wages.

There was one clear instance where political dissatisfaction occurred despite economic improvements for wage earners, who nevertheless participated actively in anti-government action: the riots, demonstrations, and elections in Pakistan in 1970-71. They resulted in the election of opposition candidates and contributed to the independence of Bangladesh in the former East Pakistan and the ouster of the military regime in the former West Pakistan. But in all other political development listed, increases in real wages preceded and accompanied electoral success, while declines in wages accompanied riots and demonstrations. Some of the elections cited involved government pressures against the opposition, but to a degree they still reflected popular views and are therefore mentioned as examples of economic benefits leading to political support for the government.

In all of the political events economic factors were, of course, only partially responsible. In the 1970-71 riots and election in Pakistan/Bangladesh, political factors were clearly decisive, but the interaction of politics and economics may just be more difficult to disentangle in other instances. Certainly it would be naive to argue that the ouster of Soekarno as President of Indonesia was simply or even primarily due to economic deterioration. But it is also plausible that the widespread discontent mobilized by anti-Soekarno groups to press for his ouster, was strengthened by economic deterioration over a decade, of which the 25% decline in real wages over the mid-60's was only the last stage. Almost certainly a major factor in the riots of late 1973 and January 1974, was the universal and very steep decline in Indonesian wages, which began in late 1972 and lasted through early 1974. That it was a temporary

set-back after a period of substantial improvement may only have increased the discontent. On the other hand the improvement in the years just before the Indian election of 1971 may have helped the government, although it occurred in the middle of a period when wages had essentially stagnated for some 15 years. The ouster of Bangladesh's Awami League, the party of independence, was undoubtedly the result of many factors. But the reported widespread support for the 1975 coup was probably related to the economic disaster over which it had presided, reflected in a 40% decline in real wages in three years. In contrast, the new government of Ziaur Rahman undoubtedly gained support from the improved economic situation, reflected in real wage rises of 20-50%, primarily due to a 45% decline in the rice price.

In short, almost universally, lower real wages seem to have contributed to political difficulties, rising wages to political support.

E. The Combined Effect of Growth, Inflation and Other Factors on Real Wages and Politics.

Before summarizing and interpreting the conclusions on different factors affecting wages it is necessary to stress that this paper is apparently the first attempt to analyze how and why wages change over time in less developed countries. As a result, the analytical framework is still quite primitive. Moreover the data used to test various hypotheses are not very reliable. Finally it is probable, as discussed earlier, that non-economic and non-quantifiable factors affect wages. As a result there is a good deal of noise in the data. For all these reasons the statistical tests of the quantifiable factors do not provide unequivocal support for the conclusions reached. The results are interesting to the extent that they break new ground, but they are clearly not conclusive. The hypotheses tested require

further elaboration, the data need to be extended for a longer time period, additional data need to be collected, and the statistical analysis needs to be refined. But some interesting preliminary conclusions emerge.

The two major factors which, it was argued, affect real wages, the average product in self-employment and especially agriculture, and the rate and acceleration of inflation, are both in turn affected by:

- weather
- some other exogenous influences, such as changes in the price of exports (e.g.: rubber, jute, cotton) and the resulting capacity to import
- government policies

Since both major factors which affect real wages are influenced by the same events they sometimes move together and then cause major changes in wage levels. For instance, when poor weather or government policies reduce per capita agricultural output this can simultaneously:

- decrease the rate of growth in National Income, with effect on the profitability of many enterprises and the demand for labor
- reduce the average agricultural product, and thereby the reservation wage (supply price) of agricultural labor
- increase the rate of inflation by reducing the domestic supply of wage goods
- reduce exports and therefore the capacity to import food-grains and other wage goods, further contributing to inflation

As a result of all four interrelated factors real wages would drop. In three of the four countries, one can distinguish periods of several years when several factors combined to make for declining or rising real wages.

1. Growth Oriented Development Strategies and Rising Wages.

Indian development Strategy was relatively consistent over the 20 years under review, but in the other three countries one can distinguish sharp breaks. In Pakistan (then including what is now Bangladesh) in the 1960's, and in Indonesia late in the decade, the emphasis was on rapid growth in national income. Average agricultural output increased. Prices were stabilized by increased output, by more imports, especially of food, partly financed by aid, and by conservative fiscal and monetary policies.

In terms of the mechanism sketched earlier, with limited empirical support, rapid growth with relatively stable prices resulted in rising real wages because:

- a. The reservation wage of 'surplus' self-employed agricultural labor increased as the average income from agriculture rose,
- b. Similarly, increased demand for informal sector services, and lessened pressure on that sector as people found employment in the formal sector, increased the average product and therefore the reservation wage of informal sector workers.
- c. More enterprises were profitable and with profit, non-economic reasons for raising wages increased in force:
 - (i) Employers' ability to pay higher wages increased.
 - (ii) Their willingness also increased to pay higher wages for non-economic reasons.
 - (iii) Employees may have revised upward their definition of a "fair" wage and pressed for higher incomes.
- d. With greater demand and profits, it also made economic sense for employers to increase wages to:
 - (i) increase the supply of work without hiring more workers, to avoid hiring and firing costs

- (ii) reduce the chances of labor strife, which had become more costly.
- e. That money or nominal wages tend to lag behind prices mattered less when prices rose little, and resulted in increased wages when prices fell. (This refers to the rate of price change).
- f. With a slowing in the rate of inflation, an attempt to compensate for future inflation will actually raise real wages. (This refers to a change in the rate of price change).

For most or all of these reasons, real wages in all the three countries rose when development strategy was growth-oriented, despite the governments' neglect of distributive policies and the undermining of labor power.

Rapid growth can also increase employment in the high wage, modern sector -- especially industry. It thereby increases the speed with which workers could move from self-employment, where 'surplus' workers contributed little or nothing to family income, to better paying wage employment. With higher real wages and greater productive employment, wage earning groups were clearly better off in absolute terms during these periods of rapid growth than during periods of stagnation or decline in the economy. Since wage earners include those employed in agriculture and in the unorganized sector, they encompass a substantial proportion of the poor. This relationship of real wages with growth and price stability helps explain why income distribution does not seem to have necessarily deteriorated during periods of rapid growth.

2. Rapid Growth and Stagnant Wages - A Possible Caveat

A warning note needs to be sounded about the relationship of a rapid rate of economic growth and rising real wages. In Indonesia real wages may

have stagnated from 1970 to 1976, despite a very rapid (8%) rate of growth because:

- growth was concentrated in the capital intensive sectors which provided few jobs for unskilled workers
- jobs were simultaneously lost in traditional industry, transport and trade, partly because of competition from imports and government supported capital-intensive industry, and partly as a result of policies which restricted labor intensive occupations
- work and income sharing policies may have become less powerful as a result of population pressure, technical change, commercialization and a different political environment
- rapid inflation, concentrated in the prices of wage goods, reduced real wages between 1972 and 1974 and the subsequent rise to 1976 only made good the earlier loss.

The Indonesia experience is not conclusive,¹ because the period of analysis is short and greatly affected by an exogenous inflationary spurt that may have had a temporary effect on wages. But it does suggest that the mechanism relating wages and growth described earlier can result in a situation where stagnant wages accompany rapid growth, although more generally rapid growth leads to rising wages. However, the Indonesian experience may differ from that of other countries because Indonesia is more dualistic than the other three and government adopted some policies that strengthened dualism and that may have reduced the average product per worker in the informal sector and thereby the reservation wage.

¹It is analysed in more detail in my 'The Effect of Growth and Inflation on Worker's Income' in Essays on the Economy of Indonesia (forthcoming).

But even in Indonesia rapid growth meant a dramatic increase in real wages during its initial phase and workers were clearly better off with growth than with a stagnant economy which resulted in reduced wages.

3. Populist Development Strategies and Real Wages.

The alternative, populist, strategies pursued in Indonesia from the early 50's to the mid-60's, and in Pakistan and Bangladesh from the early to the mid-70's, neglected growth but did not really emphasize income distribution either. They were "populist" in the sense that they curtailed the power of the largest business houses and families, increased the power of the state and the organized workers, and tried to raise the income and increase jobs for the latter. They also tried to increase the availability of education, health and other government services to the great majority of the population. In all three countries, the central hallmark of the populist strategies, however, was not a different set of priorities or policies with respect to economic issues but an emphasis on political objectives and a neglect, bordering on contempt, for economic objectives or performance. In India the changes in strategy were always far more limited. Just as there never was a consistent growth-oriented strategy in India, so there was not a consistent populist one.

The short-term consequences of the populist strategies in the other three countries differed. In Pakistan the new government inherited a quite well functioning, rapidly growing, economy and a relatively efficient government machinery and initially adopted some effective economic policies. As a result, agricultural output remained high, prices rose only moderately, foreign resource inflows accelerated and the economy

continued to function quite well until 1973/74. (The initial effect of minimum wage legislation and greater worker power, therefore, was a further increase in real wages. But over the longer term the deterioration of the economy, which resulted in part from the strategy pursued, affected real wages by the mid-1970's. In Indonesia and Bangladesh with economies debilitated by civil war and war, and with a weak government machinery, the further deterioration in the economy as a result of populist policies very quickly reduced real wages.

The reasons for a decline in real wages in stagnating or declining economies were simply the mirror image of the effects of rapid growth. a declining average product in agriculture (and other self-employment), high and accelerating inflation, declining profit and demand. Government, by raising the minimum wage, and workers, by using their greater political and economic power, may well have dampened the effects of other factors on the wages of a minority of workers, particularly the labor aristocracy in large-scale manufacturing enterprises. But in the three economies, these actions could not fully offset the pressure on wages from a deteriorating economy and they never helped much the great mass of unorganized workers. Real wages for workers as a whole deteriorated. If government then forced enterprises, especially public enterprises, to hire more workers in the face of declining demand, the real wages dropped quite sharply. "Surplus" workers were in the process transferred from self-employment to wage employment, but in a declining or stagnant economy they remained "surplus", not contributing to real output.

GROWTH, INFLATION AND REAL WAGES
(Percentage Changes)

	Time Period	GNP/GDP Growth	Average Agricultural Product	Prices	Wages
Bangladesh	50's	2.1	-1	2.5	0
	60's	4.2	0.5	5.3	11
	70's	-3.9	-7.4	38.6	-29
Pakistan	50's	3.3	3.1	1.2	(4)
	60's	6.4	3.4	3.3	10
	70's	3 to 2.1*	-2.8	15.5	6 to -20*
Indonesia	58-67	2.0	N.A.	190.3	-53
	67-75	8.0	N.A.	36.6	47
India	50's	3.6	0.7	5.0	(-26)
	60's	3.4	0.5	7.0	0
	70's	3.0	-2.6	(5.4)	(2)

Notes: a) All figures, except for real wages, are annual rates of change

*b) For Pakistan in the 1970's the 6% increase in wages and 3% in GDP is for all of the 70's. Deterioration in the economy began in 74. GDP between 74 and 77 increased by 2.1% according to official figures, but in fact the rate was less (see Appendix). In these years wages declined by 20%.

c) The Time periods are:

Bangladesh: 49/50 - 59/60, 60/61 - 69/70, 71/72 - 74/75 for wages, 70/71 included also for other columns. Real wages are for agriculture; so are prices.

Pakistan : 53/54 - 59/60; 62/63 - 69/70; 70/71 - 75/76.

Indonesia : Years as indicated.

India : 52/53 - 59/60, 60/61 - 69/70; 70/71 - 72/73. Real wages are rural except for last year, where increase in textile wages was (illegitimately) spliced on; therefore, in parentheses. Prices are rural, again except for last year.

d) Real Wages comparisons are averages for longer periods:

50's - Average for second half compared to first half

60's - Average for decade compared to second half 50's

70's - Average compared to 60's

For Indonesia : Average 58-67 compared to 53-57 and average 69-75 compared to 58-67.

The figures in parentheses indicate that only 5-6 years' data available, so may be dealing with random fluctuations.

Source: Tables 1 - 5 in Statistical Appendix.

The decline in income of the poorer group was less than the decline in real wages because government sometimes succeeded in temporarily increasing employment and in all cases provided more free services, especially education. These benefits, however, seem to have been far outweighed by the losses due to declining wages.

4. The Political Consequences of Economic Setbacks

When real wages declined as a result of a development strategy which produced stagnation in the economy, the government in power sooner or later faced political problems in many cases (see Table 5). But political problems also occurred during periods of rapid growth, when there were temporary episodes of declining real wages as a result of brief periods of economic deterioration. The temporary economic declines were due to:

- a. Bad harvests, resulting in a lower average product in agriculture, high and accelerating inflation, and lower growth (profits).
- b. Reductions in foreign aid, curtailing the supply of wage goods and investment goods, thereby increasing prices and reducing growth.
- c. Rapid expansion in the money supply, increasing inflation.
- d. Deterioration in the terms of trade, again raising prices and lowering growth.
- e. Deterioration in confidence, with the same effects.

Since these recessionary episode took place during or after a period

of growth, the political effects were likely to be especially severe. Growth and rising real wages had raised hopes and expectations. When these seemed to be suddenly and cruelly disappointed, that may be more difficult to accept than a long period of stagnation or minimal increase in real wages, which did not raise expectations. The political consequences were compounded if conspicuous consumption continued unabated, so that wage earners, contrasting their sudden suffering and disappointed expectations with the continued affluence of the rich, concluded that sacrifices were only imposed on them.

This describes the situation in Pakistan, Bangladesh and Indonesia. By the mid-60's in the first two countries, real wages had been rising for several years (15 - 30% over the late 50's -- see Table 3) and then quite abruptly declined (-5 to -15%). The rise in Indonesian wages from the mid-60's to the early 70's had been even more dramatic (nearly 100%) as was the fall in 1973/74 (-7 to -50%). It was during these periods of declining wages, following on a period of significant rise, that political difficulties occurred in all three countries and led to erroneous conclusions about the destabilizing effects of rapid growth.

5. Is Growth Necessary and Sufficient?

All of this sounds like an argument for a return to the development strategies of the 50's and early 60's: emphasizing growth, avoiding government intervention to improve equity, in the expectation that growth would automatically benefit the poor as well as the rich (later somewhat pejoratively but appropriately called the "trickle-down" approach). That is not the case:

a. The Four countries under review are different from many other less developed countries in that they:

- (i) Had a relatively egalitarian income distribution with Gini coefficients around 3 - 3.5 as against 4 - 5 in much of Latin America. In a more dualistic, less egalitarian society, a higher proportion of the benefits of growth may accrue to those within a small, modern enclave.
- (ii) Were heavily agriculture-dependent, so rapid growth of the economy meant rapid growth of agriculture, which raised real wages throughout the economy, probably via the reservation price.
- (iii) Were labor surplus, dooming to failure attempts to raise incomes of the poor by minimum wage legislation or union action. Surplus labor means that wages remain low for the bulk of the labor force even if they are raised by fiat for a small, skilled or protected, organized sector.

For countries with different characteristics, the effect of a growth oriented strategy on wages might well have been quite different.

b. This paper does not really analyze in any depth the effect of development strategy on growth and equity; the trade off, if any, between growth and the absolute income of the poor. Only in the first section of the paper were such issues discussed briefly, and that section does not explore how particular policies and programs affect growth, income distribution and the absolute income of the poor. Another paper, in preparation addresses some of these issues in greater depth.

c. Nor does the paper really deal with all possible alternative strategies. It does not examine the alternatives of rapid growth versus a somewhat lower growth with a more equitable distribution of income in an economy efficiently managed to achieve these objectives. In fact, in three of the countries the alternative to rapid growth was a populism that neglected efficient economic management and emphasized political goals. Given the political and social circumstances of these countries, the actual alternatives seemed to be (i) high growth with little deliberate intervention to improve equity, or (ii) low growth, with intervention designed to benefit the political elite and the elite of the wage earners, plus limited benefits for the poor through modest land reform and improved government services.

Given these alternatives, the poor who worked for wages were clearly better off in terms of income with more rapid growth. The choice between reasonably rapid growth with neglect of equity and stagnation with almost equal neglect of equity is obviously not a difficult choice -- if one is concerned only with direct economic consequences. The extent to which populist governments gave many of the poor hope, dignity, a feeling of participation and power is, of course, not measured by a study of real wages. Nor is the trade-off in the minds of the poor majority between these difficult-to-measure objectives and higher incomes. And, of course, this study did not address the question whether in these

countries the only choice available is between broadly political and narrowly economic benefits. In a neighboring country, Sri Lanka, the choice really seems to have been between growth and equity, as the government intervened effectively to distribute income. But one conclusion can be drawn: the widespread belief that rapid growth brings no benefits to the poor majority is not supported by the evidence the growth-oriented strategies generally raised real wages, the neglect of economic performance lowered them, and often quite brutally.

But stagnant wages could coexist with rapid growth if the pattern of growth required little unskilled labor. More important, during periods of rapid growth, the inevitable setbacks to the economy, caused by weather or other outside factors, also caused severe declines in real wages and consequent political troubles. Therefore it apparently is not enough for a government to achieve a high rate of growth if it wants to avoid political problems. It needs also to pay attention to the labor-intensity of growth and it needs to cushion the wage earners against the inevitable rise in wage goods prices. Finally it probably should be sensitive to the potential for creating political friction of continuing conspicuous consumption during periods of declining or stagnant real wages.

**METHODOLOGICAL AND STATISTICAL
 APPENDIX TO**
REAL WAGES, GROWTH, INFLATION, INCOME DISTRIBUTION AND POLITICS
IN
PAKISTAN, INDIA, BANGLADESH, INDONESIA

Gustav F. Papanek

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Page

- 4 Table 1B - Source: "World Tables, 1976", The World Bank, 1976.
- 9 Table 2A - Sub-heading should read: Wages in 1969/70 Prices.
- 17 Table 4B - 1976 I, Sumatra wages: 6961 should be 4961.
- 20 Table 4D - Title - FARM should be replaced with ELECTRICITY.
- 23 Table 4F - Dates in title should be 1951 - 1976.
- " " - 1972-74, Wages, Household Servants: -51.0.
- " " - Sources and Notes: *The unclear figure is 210%.
- 34 Table 6 - Pakistan - All W₁, 19) Urban Casual: $R^2 = 0.27$,
F = 7.28, DW = 1.8.
- " " - Second line of 19) Urban Casual omitted; should read
as follows: C (2.0), P₁ (2.7)
- 37 Table 7 - India - All W₁, 24) Rural - aggregate: C = 0.0

1. Income Distribution and Growth Rates

Data on income distribution are notoriously unreliable. There is no question that in the four countries under review all income distribution data are seriously affected by undercoverage of the richest and poorest groups in the population. The rich, afraid of the tax collector, often refuse to answer, and if they do answer, generally give largely fictitious figures. One only needs to compare the use of consumer doubles, especially automobiles, and the income that this implies, with reported income to be convinced on this point. The poorest are underenumerated because surveys generally use a sample of residences and omit those with no fixed residence, who sleep under bridges, in doorways or on the street. As a result, the absolute reliability of income distribution data is low.

But this is not a decisive problem if one is concerned with relative data. Underenumeration will not necessarily change systematically over time. So a comparison of Indian data for 1968/9 with Indian data for 1958/9 is more reliable than a comparison of Indian income distribution statistics with those for Germany. Fortunately three of the four countries shared the same statistical system and had similar sample designs, questionnaires and definitions until 1947. Two of these countries had the same system until 1971. Therefore comparisons among India, Bangladesh and Pakistan are much more reliable than is usual in inter-country comparisons.

The fourth country, Indonesia, not only has a different system, but the only data which lend themselves to income distribution analyses are of little value for that purpose. The SUSENAS surveys seem to exclude such a large share of income and vary so from year to year in coverage and definition that it is very doubtful any meaningful conclusions on income distribution can be drawn. (cf. David Dapice, "Income

Distribution" in G. F. Papanek, ed. Essays on the Economy of Indonesia in the 1970's, manuscript). Therefore Indonesian income distribution data have not been used in this study. The one data point cited, the Gini coefficient for 1971, shows Indonesia as less egalitarian than the other three countries, which seems consistent with observation.

In addition to Gini coefficients of inequality over time for the three South Asian countries (Tables 1A and 1B), the share of the top 5% and bottom 20% in 1960 and 1970 is shown (Table 1C), as is the change in shares in Pakistan during its period of rapid growth (Table 1D).

When these indexes of income distribution are compared with the rate of growth in the four countries (Table 1E) there is no support for the belief that rapid growth is accompanied by a less egalitarian income distribution. In Pakistan and Bangladesh the available indicators all show an improvement in income distribution during the 1960's, the period of rapid growth, and a deterioration in the spotty data available for 1971/2 and 1973/4 respectively, periods of decline in per capita income in both countries. During the brief period when the series overlap (1963/4 to 1968/9) income distribution in relatively rapidly growing Pakistan and Bangladesh improved, while in more slowly growing India income distribution in rural areas became less equal, in urban areas more equal. Moreover, if one looks at absolute figures rather than at change over time, income distribution was more egalitarian in Pakistan and Bangladesh in the 1960's than in India.

None of these figures are very significant, as already mentioned. Moreover, it is clear that there are substantial fluctuations from year to year, so individual year comparisons are even less useful. Finally data generally are in nominal, not real terms. Since prices indices

Table 1A

TRENDS IN INCOME DISTRIBUTION - INDIA, PAKISTAN, BANGLADESH
(Gini Coefficients)

	1) India		2) Pakistan		3) Bangladesh	
	<u>Rural</u>	<u>Urban</u>	<u>Rural</u>	<u>Total</u>	<u>Rural</u>	<u>Urban</u>
1958/59	.340	.348			.38	
1959/60	.314	.357			.38	
1960/61	.321	.350			.38	
1961/62	.312	.357				
1963/64	.297	.360	.339	.347	.33	.41
1964/65	.294	.349			.33	.39
1966/67			.313	.342	.31	.38
1967/68	.293	.345				
1968/69	.310	.350	.261	.326	.27	.37
1969/70			.292	.323		
1970/71			.284	.315		
1971/72			.293	.332		
1973/74					.44	

- Sources: 1) National Sample Survey data cited by P. K. Bardhan in T.V. Srinivasan and P. K. Bardhan, Poverty and Income Distribution in India.
- 2) Nasim H. Sadiq, "Statistics of Income Distribution in Pakistan" cited by S. Guisinger and N. Hicks (unpublished).
- 3) M. Alamgir, "Bangladesh: A Case of Below Poverty Level Equilibrium Trap. Some Analysis of Distribution of Income, Consumption, Saving and Poverty in Bangladesh" Bangladesh Development Studies, Volume 2 No. 4, October, 1974 (Bangladesh Institute of Development Economics).

Table 1B

A COMPARISON OF INCOME DISTRIBUTION TRENDS
IN ALL FOUR COUNTRIES
(Gini Coefficients: Households)

	<u>India</u>	<u>Pakistan</u>	<u>Bangladesh</u>	<u>Indonesia</u>
1953/57	.34			
1960	.47			
1963/64		.37	.37	
1964/65	.42			
1966/67		.36	.34	
1967/68	.48			
1968/69		.38		
1969/70		.37		
1970/71		.36		
1971				.46

Source: Sheil Jain, "Size Distribution of Income," The World Bank, 1975.

Table 1C

TREND IN INCOME SHARES - THREE COUNTRIES

<u>Income Shares of</u>	<u>India</u>	<u>Pakistan</u>	<u>Bangladesh</u>
Lowest 20% - 1960	4%	7%	7%
1970	5%	8%	9%
Highest 5% - 1960	27%	20%	19%
1970	25%	18%	17%

Table 1D

TREND IN INCOME SHARES - PAKISTAN

	<u>Top 20%</u>	<u>Middle 40%</u>	<u>Bottom 40%</u>	<u>Bottom 10%</u>
1963/64	36.5	37.5	26.0	5.8
1966/67	34.6	38.0	27.4	5.5
1968/69	33.0	38.5	28.5	5.7
1969/70	33.5	38.7	27.8	5.7
1970/71	32.5	38.1	29.4	6.4
1971/72	37.0	36.1	26.9	5.7
Annual Average	34.5	37.8	27.7	5.8

Source: Calculated by M. Arif from 'Household Income and Expenditure Surveys,' (Central Statistical Office, Government of Pakistan) in M. Arif, 'Growth, Redistribution and Basic Needs: A Case Study of Pakistan,' (Unpublished Ph.D. Dissertation, Boston University, 1978).

Table 1E

GROWTH IN GNP or GDP - FOUR COUNTRIES
(annual percent change)

	<u>Pakistan</u>	<u>India</u>	<u>Bangladesh</u>	<u>Indonesia</u>
1950's	3.3	3.6	2.1	
1960's	6.4	3.4	4.2	58-66 2%
1970's	3.0(or 2.1)*	3.0	-3.9	67-75 8%

Sources: Official Statistics, such as Economic Surveys, Statistical Yearbooks, Statistical Pocketbooks.

Notes: *For Pakistan the official statistics show a 3% rate from 1969/70 to 1976/77, and 2.1% from 1974/75 to 1976/77, the latter a period of declining wages. Both figures are probably overestimates, based on dubious estimates of growth in 'services'. Over the seven-year period as a whole, the two goods-producing sectors for which reasonably accurate data are available increased by 0.5% (major crops) and by less than 1% a year ('large scale industry'), while 'services' are shown increasing by a unbelievable figure of more than 4% a year. During the 1974/75 to 1976/77 period the annual change was only 0.4% for crops and -1.1% for industry with 'services' again substantially raising the official growth rate.

A 2% rate of growth has been used throughout as the maximum consistent with the growth rate of the sectors with reasonably reliable data.

For Indonesia estimates were used since National Accounts are not available for some of the period

Time periods: Pakistan : 53/54 - 59/60; 59/60 - 69/70; 69/70 - 76/77
 India : 51/52 - 59/60; 60/61 - 69/70; 70/71 - 72/73
 Bangladesh: 49/50 - 59/60; 59/60 - 69/70; 71/72 - 74/75

for different income groups do not move together this can introduce another source of error. So these trends should not be taken seriously, but at the very least one can conclude with a verdict of "not proven" on the undesirable distributive effects of rapid growth.

2. The Data Base - Real Wages, Prices and Agricultural Output Changes

a) Reliability of Nominal Wages

The wage data were collected from a wide variety of sources, including some primary data gathering in the case of Pakistan. The emphasis was on wages of unskilled labor, the lowest income group among wage earners. The problem of underestimation is much less serious for wages than for income distribution. The very poor, with no fixed residence, are generally not wage earners, nor are the very rich. So the two groups that cause the most problems on income studies are not of importance. The problems of definition, forgetfulness, and valuation which plague income estimates are also much less important. (E.g., for incomes there are such problems as the distinction between net and gross for the self-employed, estimating the income from vegetable growing and other minor activities, and how to handle services provided in kind.)

Still the nominal wage data have some problems. Wages paid in kind are pretty universally supposed to be included in reported wages, but valuation presents a problem. And while underreporting to escape taxation is hardly a problem, overstatement of wages occurs as employers try to reduce tax liability and to demonstrate compliance with minimum wage legislation.

Structural changes are another problem. For instance "manufacturing" wages in a rapidly developing country are likely to have a secular upward

trend simply because:

- workers wages rise in a given job as they gain experience
- the labor force is likely to be increasingly skilled within a given industry as more sophisticated technology is used
- more capital intensive industries become a larger share of the sector

To reduce the effect of structural changes wage data used include, where possible, separate series by regions, by industries, and even for a particular occupation in the same firm over time.

b) Prices and Average Agricultural Product

Of course the deflator used should reflect the prices paid by a particular group of wage earners, but data are not available to follow this principle in all cases. However, wherever possible indices have been used for agricultural and industrial workers, and for different regions. Still some noise is introduced by inappropriate price indices.

The average agricultural product (AP) variable was generally calculated by dividing the value added in agriculture by the rural labor force. Data on the rural labor force are available only for census years and intermediate years had to be interpolated. No significant errors should arise from this fact.

A serious problem does arise on the agriculture products variable in the case of India. The only data are for the whole country. Analyses of real rural wages by State therefore have to use a national average, which may be largely irrelevant for a particular State. The problem is dealt with inadequately and very partially by using not the actual average product, but a three year moving average to capture longer term, country-wide, changes instead of the vagaries of local weather.

c) Do Changes in Real Wages Accurately Reflect Reality?

Despite these caveats, changes in real wages shown in Tables 2-5 quite accurately reflect actual annual changes in wage incomes. Except for structural changes most of the problems discussed, while somewhat reducing the accuracy of the results with respect to wage levels, have little effect on wage changes. Overstatement of the wage bill to escape taxation for instance, is likely to be by a similar percentage in different years and therefore does not affect changes in wages. Even structural changes do not affect year to year changes, although they can affect comparisons of one decade with another. However, agricultural wages and those for individual firms are little affected by structural changes, and even wages for a particular industry are not likely to be affected significantly in the course of a decade.

The fact that wages of different series move together within each of the four countries increases the confidence in the data. Different nominal wage series are compiled by different agencies, are deflated by different price indices and are differentially affected by structural or compositional change, yet move broadly together. (See Tables 2-5.) Where there is a discrepancy for some years, there usually is a simple explanation.

However, while the data apparently quite accurately measure change in real wages, they are less accurate as measures of workers' incomes. When Indonesian wage data, for instance, show a 50% or even 70% decline in real wages, this does indicate a drastic decline in both wages and income, but with several factors mitigating the income decline:

- (i) More employment imposed by Government can be a major cause of lower wages, but of course also means additional income for some workers.

Table 2A

BANGLADESH - REAL WAGES, PRICES AND
AGRICULTURAL PRODUCT, 1948-76

Years	1) Prices		2) Per Capita Agric. Product %Change	Wages in Taka/1973 (100 = 1)			
	a) Agric	b) Indus		3) Agri- culture (Daily)	4) Manu- fact	5) Constr- uction (Yearly)	6) Urban unskilled
	% Change						
1948/49				(3.2)			
1949/50				3.2			
1950/51	-2		2.9	2.9			
1951/52	6		-1.9	2.8			
1952/53	2		1.4	2.6			
1953/54	-1		1.4	2.6			
1954/55	-8		-6.5	2.7			
1955/56	4		-9.9	2.7			
1956/57	11		10.9	2.8	1,227		
1957/58	9		-6.9	2.7	1,270		
1958/59	5		-12.2	2.7	1,087	943	1,087
1959/60	-0.6	4	12.0	2.8	1,118	988	1,041
1960/61	0.3	0.7	1.6	3.0	1,305	1,082	1,036
1961/62	4	5	2.6	3.1	1,323	1,125	988
1962/63	3	1	-5.7	3.2	1,415	1,228	1,026
1963/64	-1	2	6.0	3.5	1,471	1,322	1,088
1964/65	16	4	-1.0	3.4	1,473	1,278	1,074
1965/66	13	0.9	0	2.9	1,522	1,237	1,090
1966/67	13	10	-2.1	2.7	1,421	1,134	1,024
1967/68	3	1	6.0	2.8	1,511	1,167	1,056
1968/69	2	5	-4.0	3.0	1,596	1,121	1,075
1969/70	-0.7	3	.5	3.1	1,820	1,086	1,079
1970/71	-3	2	-24.7	3.2		1,088	1,129
1971/72	43	38	-5.5	2.6		832	873
1972/73	58	46	-5.8	2.2	1,718*	687	656
1973/74	53	39	6.9	2.1		742	
1974/75	42	46	-7.9	1.9	1,301*	699	
1975/76		-9				852	

Sources:

- 1a. Consumer Price Index for Agricultural Workers from A.R. Khan (see note 3 below), but changed to 1969=100. 1948/9 is from S.R. Bose: "Real Income of Rural Poor in East Pakistan," The Pakistan Development Review, Autumn, 1968.
- 1b. Consumer Price Index for Industrial Workers in Narayanganj from Statistical Bulletins and Statistical Digest, but using weights from 1968/9 Family Expenditure Survey, i.e.: Food and drink 70.5%, Clothing and Footwear 5.8%, Housing 16.2%, Miscellaneous 7.5%.
2. Output in agriculture divided by population, both from Statistical Bulletins, Yearbooks and Digest.
3. A.R. Khan, "Poverty and Inequality in Rural Bangladesh", World Employment Programme International Labour Organization, Working Paper WEP 10-6/WP 1. (also in Poverty and Landlessness in Rural Asia, International Labour Office 1977). These data are from the Directorate of Agriculture, unweighted mean of the 19 districts. 1948/49 from S.R. Bose (see note 1 above).
4. Through 1969/70 as reported by the Directorate of Labour under the Payments of Wages Act 1956 in Twenty-Five Years of Pakistan in Statistics, 1972. Later (*) data from Census of Manufacturing Industries and therefore not strictly comparable.
- 5 & 6. Nominal wages from Statistical Digests of East Pakistan and of Bangladesh; Quarterly Bulletin of Wage Rates in East Pakistan and Quarterly Economic Indicators of Bangladesh.

TABLE - 2B
BANGLADESH - REAL WAGES AND PRICES: 1963/77
 (in 1969/70 prices)

Years	Agric. Price Index	Agric. Real Wages (Daily)	Indust. Price Index	Indust. Real Wages-Annual			Construction Real Wages (Daily)
				a)Unskilled	b)skilled	c)average	
'64	72.0	3.4	78.7	1,099	2,065	1,572	4.1
'65	73.1	3.5	82.1	1,088	1,977	1,533	4.4
'66	82.5	3.1	82.9	1,137	1,334	1,550	4.0
'67	93.2	3.2	91.0	1,167	1,845	1,507	3.8
'68	96.2	3.0	92.3	1,170	1,861	1,526	3.7
'69	98.0	3.0	97.0	1,167	1,919	1,542	3.8
'70	97.3	3.0	100.0	1,529	2,132	1,831	3.4
'71	94.7	3.2	102.3	1,603	2,217	1,900	3.5
'72	135.1	2.1	140.9	1,195	1,692	1,443	2.7
'73	213.1	1.8	205.3	891	1,225	1,058	2.3
'74	326.7	1.7(1.9)	286.3	746	946	846	2.5
'75	463.6	1.7(1.9)	419.1	577	746	662	2.3
'76	320.8	2.5(2.7)	379.9	697	932	815	2.9
'77	292.6	2.7	350.0	805	1,146	976	3.1

Sources and Notes: Agricultural real wages in parentheses are simple average of unskilled and skilled workers. Nominal wage data from Bangladesh Bureau of Statistics "Economic Indicators of Bangladesh" January 1978. The Price Index for Agricultural Workers has 1969=100; for Industrial Workers of Narayanganj (also used for Construction Workers) 1969/70 = 100. The latter is also from "Economic Indicators ...". The Index for Agricultural Workers was constructed as follows: using the weights and categories of A.R. Khan, which are based on the consumption patterns of the second lowest income group (from the 1963/64 "Quarterly Survey of Current Economic Conditions," Pakistan Central Statistical Office) price data for 1975/6-1976/7 were found for 74% of the commodities used in the index. Their weights were increased proportionately to obtain 100% and the resulting index used.

Table 2C

BANGLADESH - PERCENTAGE CHANGES OVER TIME - IN REAL WAGES

	<u>Agriculture</u>	<u>Manufacturing</u>	<u>Construction</u>	<u>Urban Unskilled</u>
A. Long-term Trends				
1960's/1950's	+11%	+27%	+21%	0
	/50-59/60 to /1-70/1)	(56/7-59/60 to 60/1-69/70)	(58/9-59/60 to 60/1-70/1)	(58/9-59/60 to 60/1-70/1)
1950's	0			
	(49/50-54/5 to 55/6-59/60)			
1970's				
(68/9-70/1 to 71/2-73/4)	(a) -26%	-12%	-29%	-30%
(68/9-70/1 to 72/3-74/5)	(b) -47%	-51%	-34%	
B. Sharp Price Changes				
Mid 1960's				
Prices (annual rates)	+14%	+5%	+5%	+5%
Wages (time periods)	-10%	+7%	-1%	+3%
Time period for wages	(61/2-63/4 to 64/5-66/7)			
Early 1970's				
Prices (annual rates)	+49%	+42%	+42%	
Wages (time periods)	-42%	-41%	-32%	
Time period for wages	(1967/8-1970/71 to 1971/72-1974/75)			
Mid 1970's				
Prices (annual rates)	-20%	-8.7%	-8.7%	
Wages (time periods)	+53%	+19%	+25%	
Time period for wages	(1973/4-1974/5 to 1975/76-1976/77)			

Sources: Tables 2A for all calculations except Part A for the 1970's series b and Part B for the 1970's which are from Table 2B. Manufacturing figures for the latter are the average of skilled and unskilled.

Table 3A

PAKISTAN-MANUFACTURING REAL WAGES, PRICES AND AGRICULTURAL PRODUCT, 1949-1977

Year	% Price Change	Agric. Product Change	Wages per Year (Rs)		Wage Indices (Large Firms)				
			Mfg	Textiles	Textile Mill I	Textile Mill II (69-70 = 100)	Cotton Mill	Flour Mill	Foreign-Owned
49-50					52.8	N.A.	75.2	66.6	44.2
50-51					54.4	N.A.	77.2	68.3	45.3
51-52		18.6			51.2	N.A.	72.5	64.2	42.6
52-53	11.5	-4.3			45.6	N.A.	64.9	57.5	38.1
53-54	0.0	23.9	1451	1465	46.4	N.A.	65.1	57.6	38.2
54-55	-10.3	-4.8	1476	1549	51.2	N.A.	72.5	54.2	47.8
55-56	-1.6	0.0			73.6	N.A.	73.0	65.2	48.5
56-57	5.0	2.5	1568	1246	69.6	N.A.	69.4	61.5	45.8
57-58	9.5	0.0	1523	1443	64.0	N.A.	64.2	56.8	42.3
58-59	-2.9	4.9			65.6	N.A.	66.0	58.4	62.6
59-60	9.0	-4.7	1499	1418	60.8	68.0	82.4	53.5	57.3
60-61	-2.7	-1.2			58.4	65.7	79.6	51.7	55.4
61-62	2.7	5.0			57.6	70.8	78.2	50.7	54.4
62-63	0.0	6.0	1332	1317	56.9	70.4	77.8	50.5	54.1
63-64	6.5	-4.5	1466	1369	70.4	66.7	73.6	80.1	55.4
64-65	-2.4	5.9	1588	1472	68.0	67.8	85.3	77.3	53.5
65-66	1.2	-4.4	1714	1566	67.2	67.0	84.3	76.4	52.8
66-67	10.6	2.3	1601	1457	60.8	60.7	76.3	69.2	47.9
67-68	4.3	12.5	1564	1359	74.4	58.3	73.3	66.3	46.0
68-69	-3.1	3.0			104.8	62.2	75.6	88.4	109.0
69-70	5.3	6.9	1931	1795	100.0	100.0	100.0	100.0	100.0
70-71	7.0	-10.1	2026	1635	93.6	99.1	94.0	113.5	93.6
71-72	8.5	2.0	2217	1841	108.8	97.2	85.2	116.6	115.3
72-73	9.4	1.0	2444	2237	130.4	106.9	77.8	135.2	132.8
73-74	33.6	2.0	1942	1754	108.0	80.3	140.4	132.3	118.6
74-75	31.0	-13.6	1522	1747	91.2	75.4	106.8	112.1	102.8
75-76	3.6	2.2	1627	1723	96.8	91.6	103.5	118.0	99.4
76-77	18.5	2.2			94.4	77.3	87.3	114.8	92.1

Sources and Notes: 1969-70 = 100

Price index calculated by Fahim Khan ("A Study of the Causes of Fluctuations of Real Wages in the Labour Surplus Economy of Pakistan" Unpublished Ph.D. Dissertation, Boston University, 1978), using price data for the three major cities for 11 commodities and two groups in Statistical Division, "25 Years of Pakistan in Statistics, 1947-72."

The Agricultural Product change is the Value Added in Agriculture divided by rural population (inter-censal years interpolated).

Wages for all of manufacturing and textiles from the Census of Manufacturing Industries. For 1953/4 to 1959/60 these data had been computed by S. Guisinger and M. Irfan. "Real Wages of Industrial Workers in Pakistan," Pakistan Development Review, Winter 1974 for production workers only. Beyond 1970, Census data were available only for Sind (to 1974) and Punjab (to 1975/6) Provinces. Inflated to all-Pakistan on basis of earlier year ratios. Other two Provinces have little industry, so error is not serious.

Remining data collected from employers for unskilled workers only. Partly based on memory, so individual years not reliable and exclude non-cash benefits.

Table 3B

PAKISTAN - REAL WAGES IN SMALL MANUFACTURING FIRMS AND OTHER ACTIVITIES
(69-70 = 100)

Year	Small Manufacturing Firms				Casual Labor	Constr.	Munic. Sweepers
	Plastics	Salt	Ice	Cold Storage			
19-50					62.0	68.4	N.A.
50-51					62.0	70.0	N.A.
51-52					59.0	74.2	N.A.
52-53					61.0	66.4	N.A.
53-54					62.0	66.4	N.A.
54-55					69.0	74.2	N.A.
55-56					70.0	75.2	N.A.
56-57	112.7	94.6	99.5	88.3	66.0	71.0	N.A.
57-58	104.1	87.5	91.9	81.6	61	72.8	N.A.
58-59	107.1	90.0	94.5	93.0	62.0	75.0	N.A.
59-60	98.1	82.4	87.0	85.2	65.0	75.6	95.1
60-61	94.4	79.6	83.7	82.2	63.0	73.0	90.8
61-62	93.0	78.1	82.1	88.6	61.0	71.6	90.1
62-63	92.5	77.7	81.7	88.0	61.0	71.2	89.6
63-64	87.7	73.6	77.4	90.8	64.0	73.6	102.0
64-65	84.6	71.1	74.7	87.6	62.0	71.0	98.5
65-66	83.7	70.3	73.8	93.6	61.0	70.2	97.3
66-67	77.8	63.6	66.9	84.8	66.0	69.0	88.1
67-68	72.7	61.1	81.9	89.6	64.0	71.2	84.6
68-69	105.0	94.5	105.0	105.0	66.0	73.6	87.3
69-70	100.0	100.0	100.0	100.0	100.0	100.0	100.0
70-71	93.7	112.5	93.7	116.2	94.0	93.8	93.7
71-72	102.2	110.7	111.1	105.6	108.0	110.7	85.1
72-73	115.6	116.7	135.3	116.7	132.0	108.9	107.7
73-74	86.9	105.3	131.5	117.0	98.0	99.5	96.7
74-75	98.1	80.2	100.2	89.2	85.0	89.2	82.4
75-76	94.9	86.2	96.9	107.8	81.0	94.9	82.8
76-77	85.2	90.9	81.7	91.0	68.0	97.3	93.7

Sources and Notes: See Table 3A.

Table 3C

PAKISTAN - PERCENTAGE CHANGES OVER TIME IN REAL WAGES

	<u>Manuf.</u> <u>(%)</u>	<u>Text.</u> <u>(%)</u>	<u>Textile</u> <u>Mill I</u> <u>(%)</u>	<u>Small Ice</u> <u>Factory</u> <u>(%)</u>	<u>Urban</u> <u>Casual</u> <u>(%)</u>	<u>Constr.</u> <u>(%)</u>
A. Long-term Trends						
1960's/50's						
	6	6	24	-12	5	4
	(53/4-59/60		(49/50-59/60	(56/7-59/60	(49/50-59/60	(49/50-59/60
	to		to	to	to	to
	62/3-69/70)		60/1-69/70)	60/1-69/70)	60/1-69/70)	60/1-69/70)
Late 60's/ Early 60's						
	16	11	31	5.5	14	6
		(59/60-64/5	to 65/6-69/70)			
Early 70's/ late 60's						
	27	21	36	38	51	34
		(65/6-69/70	to 70/71-73/74)			
B. Sharp Price Changes						
Mid 1960's						
Prices	7.5	7.5	7.5	7.5	7.5	7.5
Wages	-5	-8	0	0	2	-1
Time Period		(1964/65-	1965/66 to 1966/67-	1967/68)		
Mid 1970's (plus deterioration in economy)						
Prices	22.7	22.7	17.7	17.7	17.7	17.7
Wages	-24	-9	-19	-26	-26	-15
Time Per.	(70/1-72/3		(71/2-73/4 to 74/5-76/7)			
	to					
	73/4-75/6)					

Sources and Notes: Tables 3A and 3B. Wage changes compare averages for several year periods to average out random fluctuations. Price changes are annual averages for the period under review. (e.g., When the period shown is 1964/65-1965/66 to 1966/67-1967/68 the change in real wages compares the average real wage for the period 66/7-67/8 with the average for the period 64/5-65/6. The price change shown is the average for 66/7 to 67/8.)

Table 4A

INDONESIA - PLANTATION REAL WAGES AND PRICES
(Monthly Wages - 1969 Prices)

Year	All Indonesia			Java		Sumatra	
	Price Change %	Temp & Perm	Real Wages Permanent	Price Change %	Temp & Perm Wages	Price Change %	Temp & Perm Wages
1951	65.0		3416				
52	5.0		4333				
53	2.5	4647	4507	0	4167	6.3	5118
54	4.9	4669	3564	8.3	4074	5.9	4259
55	37.2	2896	3035	35.9	1633	37.0	3622
56	11.9	3110	3176	13.2	2693	6.8	3705
57	4.5	3130	3258	5.0	2694	1.3	3850
58	47.8	2528	2844	41.3	2308	66.5	2768
59	26.5	2079	2555	27.0	1659	20.3	2948
60	26.4	1869	2590	27.4	1426	22.0	2793
61	33.1	1796	2299	34.0	1263	32.2	2874
62	167.0	-	-	154.0	-	200.0	-
63	134.0	1392	1671	147.0	1055	103.0	2023
64	93.0	-	-	110.0	-	49.1	-
65	254.0	-	-	295.0	-	270.0	-
66	898.0	1636	2216	889.0	1261	994.0	3237
67	193.0	1123	2274	183.0	789	227.0	2835
68	161.0	1490	1968	153.0	1082	159.0	2607
69	8.1	2390	2407	9.2	1320	8.1	3508
70	11.4	2805	2878	12.5	2201	7.0	4221
71	6.6	2718	2878	9.2	2130	2.7	4105
72	9.9	2724	2919	10.5	2224	5.2	4173
73	52.7	2342	2663	49.8	1849	71.5	3332
74	30.9	2306	2456	30.0	1952	21.2	3111
75	12.2	2533	2096	16.3	775	5.5	3852
76	17.0	2689		17.7	1041	13.5	4576

Sources: Nominal wage data from Biro Pusat Statistik (Central Statistical Bureau, Indonesia) "Statistik Upah Karyawan Perkebunan" (Wages Paid on Estates), Jakarta, yearly.

Deflated by urban food prices from G.F. Fapanek and D. Dowsett: "The Cost of Living, 1938-1973" *Ekonomi dan Keuangan Indonesia*, July 1975, for years through 1973. 1974-1975 constructed on the same basis from Biro Pusat Statistik "Indikator Ekonomi," various monthly issues.

Wages are for both permanent and temporary workers, except for one column for all of Indonesia which is for permanent workers only.

Table 4B

INDONESIA - SEMI-ANNUAL WAGE CHANGES FOR PLANTATION WORKERS, 1972-75
(Temporary and Permanent Workers)

	<u>All Indonesia</u>		<u>Java</u>		<u>Sumatra</u>	
	<u>Prices</u> %	<u>Wages</u>	<u>Prices</u> %	<u>Wages</u>	<u>Prices</u> %	<u>Wages</u>
1972 I Jan-June	2.6	2671	2.8	2077	-1.0	4311
II July-Dec	14.1	2756	15.0	2329	12.6	4193
1973 I	29.0	2264	27.9	1701	36.0	3665
II	22.2	2392	19.4	1965	37.9	3071
1974 I	29.5	2101	17.8	1110	13.8	3032
II	1.8	2489	3.4	2156	-5.9	3362
1975 I	7.5	2445	8.0	2051	4.9	3045
II	9.4	2662	10.3	2117	6.3	4241
1976 I	8.6	2706	9.0	1946	5.2	6961
II	6.0	2671	6.0	2136	9.0	4190

Sources: Nominal wages same as Table 4A.

Prices for 1972-3 same as Table 4A; however, not all of the same cities available for 1974-75, so some discrepancies with Table 4A.

Table 4C

INDONESIA - REAL WAGES IN INDUSTRY

	1) Monthly wages in 1969 Prices							2) Yearly Wages in 1973 Prices		
	Large Scale				Med	Large & Med	Foreign Firm Unskld	Large Unskld New Series	Large	Med
	Daily Man	/Wkly Text	Mthly	All						
51							3,163			
52							4,335			
53										
54										110,300
55	3,490	3,457	12,910	4,871	2,216	3,961	3,710			102,600
56										100,400
57							4,389			97,600
58							4,397			80,500 27,500
59	2,704	2,688	9,295	3,854	1,720	3,300	6,646			78,400 35,000
60	3,068	3,151	9,816	4,458	2,076	3,788	6,810			71,600 33,300
61							6,186			69,500 35,000
62	1,753	1,803	3,903	2,274	1,025	1,919	4,131			46,000 20,700
63	1,604	1,464	3,234	2,018	686	1,615	3,382			50,400 20,800
64							3,210			46,800
65							2,632			51,400 23,500
66							3,960			55,200 18,700
67							3,585			67,800
68							2,609			
69							3,124			
70		4,011*		3,515	2,142	3,110	3,475			
71							3,718			74,100 37,600
72-I							(3,725)	(6,021)		
72-II							(4,890)	(5,847)		
72-I&II						5,144	4,311	5,938		83,700 43,200
73-I							(5,889)	(5,136)		
73-II							(5,904)	(4,664)		
73-I&II							5,897	4,904		84,400 44,000
75		3,856*				4,916				

Table 4C

Sources and Notes:

- 1) Monthly wages in 1969 prices for :
 - a) Daily/weekly paid workers are production workers
 - b) Monthly paid workers are office workers
 - c) "All" workers = weighted average of daily/weekly and monthly workers
 - d) "Man" = for all of manufacturing
"Text" = textile industry only
* = textile industry both monthly and daily/weekly paid workers
 - e) "Large & Medium" = weighted average; total wage bill divided by total workers
 - f) Large and medium from BPS, "Industrial Census" in Statistical Pocketbook, various years, for 1955-72. From Industrial Statistics 1975, Survey of Manufacturing Industries (Vol I), Central Bureau of Statistics, Indonesia, for 1975.
 - g) Foreign firm from interview with firm management
 - h) New series from BPS: data for 69 firms that consistently reported were compiled.

Monthly wages were deflated by an urban food price index for Java, Sumatra, all Indonesia. The index from G.F. Papanek and D. Dowsett, Op. Cit.

- 2) Yearly wages in 1973 prices from Mark H. Pitt, "Alternative Trade Strategies and Employment: Indonesian Country Study", Minnesota University (unpublished draft for NBER study). Original source of wage data same as in 1) for most years. Others from "National Income in Indonesia", BPS and unpublished data from "Statistik Industry" for 1972 and 1973. However, price deflation different, explaining differences in overlapping years: used Jakarta 62 commodity costs of living index linked to Dutch civil servants index for earlier years, not urban food prices, as in 1).

Table 4D

INDONESIA - REAL WAGES FOR PUBLIC WORKS, FARM,
OFFICE AND HOUSEHOLD WORKERS

	<u>Public Works Sumatra monthly</u>	<u>State Elec. Enterprise (Index)</u>	<u>INPRES (Works Prog. Java Daily</u>	<u>Office Workers (One foreign firm) monthly</u>	<u>Household Servants (Index)</u>
1950					85
1951					67
1952					81
1953					98
1954					100

1955					90
1956					85
1957					80
1958					72
1959					70

1960					62
1961		82			56
1962		69			34
1963		51			35
1964		80			28

1965		49			-
1966	4,507	100			-
1967	4,864	134			-
1968	1,988	133		24,328	-
1969	2,492	220		23,969	-

1970	2,913		116	26,234	-
1971	3,417		119	27,905	-
1972 I	(3,517)				
1972 II	(2,482)				
1972 I&II	3,004		126	30,498	
1973 I	(2,061)				
1973 II	(1,731)				
1973 I&II	1,887		114	35,184	

Table 4D

Sources and Notes:

Public Works Labor : Wage data for one Province only, collected from Public Works Department.

INPRES : Wages for a locally administered public works program. Planning figures were reported by each Kabupaten (County, Shire) as expected to be paid. Simple average of Kabupaten figures.

Office Workers: Collected from one foreign firm for clerical staff.

State Electricity Enterprise : Wages from Ph.D. thesis draft by C. Manning of Australian National University.

Prices for all of the above from Papanek and Dowsett, Op. cit

Household Workers: Mark M. Pitt, "Alternative Trade Strategies and Employment : Indonesian Country Study" Op. cit. using data from "Almanac Indonesia 1968" and Ngroho "Indonesian Facts and Figures", both BPS.

Table 4 E

INDONESIA - REAL WAGES FOR AGRICULTURAL WORKERS
(Preparing rice fields - hoe labor)

1966-70	1.4
1970-74	1.7
1974-77	1.85

Sources and Notes:

Data collected from six villages on Java by the Rural Dynamics study of the Agro-Economic Survey, Institute of Agriculture, Bogor. Preliminary unpublished data in real terms. Averages for several years used to reduce random fluctuations. Rice prices used to deflate money wages.

Table 4F

INDONESIA - PERCENTAGE CHANGES OVER TIME, 1957-1975

	Plantation Labor			Manufacturing		Household
	All Indo %	Java %	Sumatra %	Large %	Medium %	Servants %
A. Long-term trends						
Mid 60's/mid 50's	-63 (1953-57 to 63,66,67)	-67	-37	-50 (1954-57 to 63-66)	-34 (1958-60 to 63,5,6)	-66 (1953-55 to 62-64)
Early 70's/mid 60's	91 (1963,66,67 to 70-'73)	114	54	58 (1963-66 to 71-73)	98*	-
1970's	-5 (1970-71 to 1975-76)	-5	1	-4** (1970 to 1975)		
B. Sharp price changes						
Early 70's				<u>New Series</u>		<u>Public Works</u>
Prices-previous	417	408	450			
- current	8.7	10.2	5.9			
Wages	86	98	36			
Time Period	(1966-68 to 69-71)					
1972-74						
Prices	52.7	49.8	71.5	52.7		71.5
Wages	-18	-17	-27	-22.5		-51.0
Time Periods	(1972 I-II to 73 II-74 I)			(1972 I to 73 II)		(1972 I to 73 II)
1974-76						
Prices	12.2	16.3	3.3			
Wages	28 (1974-I to 1976)	19	51			

Sources and Notes: Tables 4A-4D

Since Indonesian real wages show a steady trend and not much annual fluctuation, an average of the beginning years/half-years has been compared with an average of the final years/half years to show the trend in its clearest form.

Prices are annual averages for the later period. However for the 1972-74 period the price increase for 1973 has been shown and for 1974-76 it is 1975

* The increase in medium-scale industry is 210% if 1963 is compared to 1970.

** For this period the only industrial wages which are really comparable are those for the textile industry, since industry as a whole experienced major structural changes. But a comparison of a single year (1970) with another year (1975) is highly subject to accidental factors.

Table 4G

Estimated Employment on Plantations (Estates)

	1955		1963		1966		1972		1975	
	<u>Worker per hectare</u>	<u>Workers (000)</u>								
Rubber	0.45	205	0.56	226	0.56	207	0.43	152	0.55	225
Tea	1.25	82	1.43	92	1.54	92	1.25	72	1.46	87
Coffee	0.83	36	0.83	31	1.0	36	0.87	28	0.77	29
Sugar	0.42	21	0.77	55	0.53	37	0.67	48	0.70	81
Palm oil	<u>0.24</u>	<u>22</u>	<u>0.31</u>	<u>27</u>	<u>0.33</u>	<u>31</u>	<u>0.26</u>	<u>26</u>	<u>0.22</u>	<u>40</u>
Average/Total	0.47	367	0.61	431	0.59	403	0.53	326	0.56	462

Sources and calculations: Hectares of producing crops from Biro Pusat Statistik (BPS) Statistical Pocketbook (various years); worker per hectare calculated from reporting estates (see BPS "Statistik Upah, Karyawan Perkebunan," various years); total number of workers = hectares of producing crops times workers per hectare.

Table 5A
INDIAN RURAL REAL WAGES BY STATE, PRICES, AND AGRICULTURAL PRODUCT, 1951-72
(Daily Wage)

Years	Av. Agr. Product	All India		Andhra		Assam		Bihar	
		Price change	Wage						
51-52	0.0	0.0	2.2						
52-53	0.6	2.9	2.3						
53-54	6.3	2.8	2.3						
54-55	-1.1	2.7	2.4	0.0	2.5	0.0	3.4	0.0	3.1
55-56	-2.2	6.6	2.2	6.0	2.2	21.0	2.9	3.8	2.6
56-57	2.8	17.3	1.7	22.0	1.4	30.0	2.3	17.0	1.3
57-58	-6.5	7.4	1.7	2.3	1.5	12.0	2.2	13.0	1.7
58-59	8.6	0.0	1.5	2.2	1.5	0.0	1.6	-0.9	1.2
59-60	-3.2	0.0	1.5	8.8	1.3	-9.5	1.9	-3.7	1.2
60-61	5	-2.0	1.8	2.0	1.5	-12.0	2.0	-1.9	2.0
61-62	-1.6	0.0	1.8	0.0	1.8	-6.0	2.2	-1.0	1.3
62-63	-4.2	4.0	1.7	0.0	1.7	2.1	2.1	12	1.1
63-64	0.6	9.6	1.7	9.9	1.6	3.1	2.1	9.9	1.7
64-65	7.1	7.9	1.7	9.0	1.7	6.1	2.1	4.9	1.3
65-66	-15.9	7.3	1.7	-0.8	1.6	6.6	2.3	18.0	1.3
66-67	-3.0	22.7	1.5	3.3	1.8	9.8	2.2	42.0	0.8
67-68	13.2	18.5	1.7	43.0	1.8	16.0	2.0	14.0	1.4
68-69	-0.6	-3.1	1.8	3.9	1.6	17.0	2.1	-12.0	1.1
69-70	3.9	4.8	1.7	5.4	1.4	9.5	2.0	7.3	0.9
70-71	5.9	6.5	1.8	-2.5	1.6	9.2	2.0	2.1	0.9
71-72	-4	3.6	1.8	6.9	1.4	4.4	1.9	0.4	0.9
72-73	-9.8								
73-74	4.0								
74-75	-5.0								

Sources and Notes: 1) Average Product in Agriculture is value added in agriculture from the National Income Accounts (Statistical Abstracts, Economic Surveys) divided by rural population (inter-census years arithmetically interpolated). 2) The Agricultural Consumer Price Index (% change shown) is from the Indian Labour Journal as reproduced in A.V. Jose; "Trends in Real Wage Rates of Agricultural Labourers", Economic and Political Weekly, March 1974. 3) Agricultural Wages from: Ministry of Food and Agriculture, "Agricultural Wages in India".
First three years wage and price data arithmetically interpolated for All India series.

Table 5B

INDIA - MANUFACTURING REAL WAGES AND PRICES, 1951-73

Years	Prices % Change	Aggre- gate (Monthly)	Textiles	Basic Metal	Wood	Chem.& Chem.Prod.	Machinery Except Electrical	Transport Equipment
1/52	0.0	131	1581	2118	964	1345	1480	2074
2/53	0.7	135	1622	2351	1035	1457	1493	2071
3/54	-0.7	145	1610	2426	1107	1502	1568	1892
4/55	-5.1	157	1755	2528	1089	1522	1714	2171
5/56	1.5	150	1845	2595	1085	1468	1792	2198
6/57	7.5	144	1752	2079	1048	1497	1638	2080
7/58	4.9	141	1710	2027	1055	1648	1686	1973
8/59	4.6	140	1694	1978	1082	1715	1627	1879
9/60	3.8	137	1691	1869	1051	1668	1507	1823
10/61	1.8	145	1790	2047	1069	1802	1642	1941
11/62	2.4	155	1892	2256	1103	1981	1814	2053
12/63	2.9	156	1900	2321	1162	2017	1797	2075
1/64	8.0	151	1814	2222	1179	1905	1704	2056
2/65	11.0	147	1779	2129	1138	1862	1646	2020
3/66	10.0	148	1783	2135	1121	1922	1652	2005
4/67	12.0	141	1727	2026	1053	1830	1611	1901
5/68	8.1	141	1706	1964	1030	1796	1581	1900
6/69	0.7	149	1795	2049	1075	1887	1699	2045
7/70	1.7	155	1872	2037	1077	1920	1857	2098
8/71	3.8	155	1868	2026	1122	1908	1860	2070
9/72	4.7	155	1887	2046	1228	1890	1876	2321
10/73	12.2	155	1832	1819	1185	1720	1741	2101
11/74	23.4	155	1832	1819	1185	1720	1741	2101

Notes and Sources: 1) Consumer Price Index for Industrial Workers, at 1964 prices; a weighted average of 50 centers; weights derived from the Family Budget Enquiries ('58-'59), compiled by the Labour Bureau. See Indian Labour Journal, Oct., 1968.
2) Wages from Ministry of Labour, collected under Payments of Wages Act, 1936, and Minimum Wages Acts, 1948.

Table 5C

INDIA - PERCENTAGE CHANGES OVER TIME IN REAL WAGES

	Rural			Industry	Textiles
	India	Bihar	Punjab		
A. Long-term Trends					
1960's/1950's	-13%	-32%	14%	5%	7%
	(51/2-59/60 to 60/1-70/1)	(54/5-59/60 to 60/1-70/1)		(51/2-59/60 to 60/1-69/70)	(51/2-59/60 to 60/1-70/1)
1950's	-25%	-	-	0%	6%
		(51/2 - 54/5 to 55/6 - 59/60)			
1970's	3%	-10%	0	--	4%
	(68/9-69/70 to 70/1-71/2)				(67/8-69/70 to 70/1-72/3)
B. Sharp Price Changes					
1960's - late					
Prices (annual rates)	20.6%	24.7%	11%	11%	11%
Wages (Time Periods)	-6%	-21%	-9%	-6%	-6%
Time Period	(64/5-65/6 to 66/7-67/8)	(62/3-64/5 to 65/6-67/8)		(61/2-63/4 to 64/5-66/7)	
1970's					
Prices (annual rates)					2.7%
Wages (Time Periods)					6.0%
Time Period					(64/5-67/8 to 68/9-71/2)

Sources: Tables 5A and 5B.

Only rarely will the additional workers for a particular enterprise come from the family of a currently employed worker, but the family income of some households in the wage earning group will be augmented.

(ii) More important is the fact that additional forced employment increases the opportunities of all workers for moonlighting. When there are more workers than needed in an enterprise, some can come only a few hours each day, others can disappear for whole days at a time and all can reduce their efforts to pursue secondary jobs and income.

(iii) The disorganization which lowers enterprise incomes and therefore wages also increases the opportunity for diversion to private use of some of the firms' inputs and output. Usually the principal beneficiaries are managers and other senior employees, but workers can benefit too.

Additional employment, multiple job holding, and illegal income, all mean that the decline - or rise - in real income of workers can be much less than the change in real wage, when the latter changes massively. So when declines of 70% are shown in Indonesian real wages, the real decline in wages may have been 50% or 60%, and in income 40%-50%, but it was still brutal.

3. The Regression Results on Factors in Real Wage Changes

For reasons given earlier there is a good deal of noise in the data. Moreover the wage formation mechanism undoubtedly differs:

- among the four countries
- for different wage series in each particular country, especially

between wages for the organized and the unorganized, or informal sectors

- for different time periods in each country

As a result one might expect no significant common patterns across countries, time periods, and wage series. Substantial uniformity, on the other hand suggests quite powerful forces at work.

Differences are likely to be especially great with respect to the lags with which wages respond to changes in causal variables (and, conversely, but to a lesser degree, the extent to which wages anticipate expected changes). Therefore most regression equations include the current as well as a lagged term for the major variables.

The regression analysis is by no means complete. As far as can be determined from a search of the literature this effort is the first systematic attempt to identify causal variables in real wage changes over time. The first step was to obtain consistent, rather long-term, series of real wages. This in itself was a time consuming process. The specification and testing of two similar, simple, models was the second step. Undoubtedly more complex models can and should be tested and more extensive analyses should be carried out with the present models, but that has to be left to future work.

a) The Approach and Models

Generalized least squares estimates, with Cochrane-Orcutt technique to correct for auto-correlation were used. It was assumed that the problem of simultaneity was not a serious one in the four countries, that while prices, average agricultural product and government intervention influenced wages, there was no strong causality in the opposite direction.

The impact of wages on prices is limited because the total wage bill in the economy is a small one, with a majority in the labor force self-employed. Even in the enterprises using wage labor, wages are a far smaller fraction of value added than in developed countries. For instance, the manufacturing sector is typically 10-20% of GNP and wages in that sector are one-third of value added, so manufacturing wages are about 5% of GNP. Similar estimates are not available for other sectors. However, prices in most sectors are in any case determined by world prices and commercial policy. The cost of living index in all four countries is dominated by food grains which are normally traded by all countries. The second important element in the cost of living is cloth, also a traded commodity. Changes in wages may well have an indirect impact on prices over the long term: for instance, government-mandated higher wages will cause an increase in imports, which will usually force the government to raise the prices of imported goods to control the foreign exchange deficit. But cost-push inflation is not an important nexus between prices and wages in these four countries.

The average product in agriculture is even less affected by wages than are prices. It depends on weather, investment over several years and the prices of inputs and outputs. Wages play a minor role in the determination even of input prices.

Government wage policies have been effective for only a few years in only 2 or 3 of the countries and were determined by political factors.

While the real wages (the dependent variable) have little influence on the explanatory (or independent) variables, the latter are sometimes interdependent. A decline in average agricultural product, unless

accompanied by a compensating increase in imports or reduction in demand, will increase the inflation rate. Therefore the independent variables of agricultural product and rate of inflation are undoubtedly correlated during some periods. A correlation matrix for each country indicates the degree of interdependence. In fact, except for the same variable in current and lagged form, the correlation among independent variables is mostly below 0.3, not a high correlation for time series. The major exception is the correlation between the change in the average product in agriculture and the change in GNP. Since agriculture constitutes 40% or more to GNP this is as one would expect. The fact that change in agriculture product is the more significant explanatory variable lends support to the notion that it is the reservation price of labor, not the demand for labor which influences wages.

The individual explanatory variables can now be taken up.

b) The Effect of Prices

On the whole the effect of prices on wages is clear and significant in the two countries that experienced substantial inflation for a number of years: Bangladesh and Indonesia. Over the course of two years nominal wages rose by between 60% and 80% as much as the rise in prices. When inflation accelerates wages lag and conversely when it decelerates. There is one series for Indonesia where the lagged price variable is negative and significant, a puzzling result, perhaps explainable by the inclusion of temporary as well as permanent workers in the analysis. It may be that a large number of temporary workers were ostensibly put on the payroll in Sumatra during the period of rapid inflation, with nominal wages then declining as the wage bill rose less rapidly than the number of workers,

Symbols used:

- W1 = Rate of change in nominal wage
- RW = Real wage; i.e.: nominal wage/cost of living
- C = Constant
- P1 = Rate of Inflation; i.e.: % change in prices
- PL = P1, lagged by a year
- AP1 = Rate of change in the average (per capita) product in agriculture
- APL = AP1, lagged by a year
- AP3 = Three-year moving average = AP
- D1 = Rate of change in CNP
- DL = D1, lagged by a year
- GD = Government intervention Dummy - effective minimum wage legislation
- D = State of the economy Dummy
- WSL2= Rate of change in the deviation of the actual wage share from its mean
- WSLX= WSL2, lagged by a year
- SH = Rate of change in relative price of commodity
- K = Change in output of commodity
- L before a symbol means the variable is logged

Figures inside parentheses are the t-statistics of the estimated parameters.

REGRESSIONS WITH PRICE AS EXPLANATORY VARIABLE

	<u>C</u>	<u>P₁</u>	<u>P_L</u>	<u>AP₁</u>	<u>AP_L</u>	<u>R²</u>
<u>Bangladesh -All Wl</u>						
1) Rural	0.01 (0.6)	0.33 (3.33)	0.32 (3.1)			0.84
2) Urban Construction	0.01 (0.4)	0.33 (2.6)	0.43 (3.06)			0.72
3) Urban Unskilled	0.02 (1.28)	0.16 (1.73)	0.39 (4.17)			0.69
4) Manufacturing	0.07 (3.05)	0.6 (0.1)	-0.6 (-1.2)	0.62 (3.6)	0.73 (4.4)	0.87
<u>India -All Wl</u>						
5) Rural-aggregate	0.00 (0.12)	0.27 (0.93)	0.45 (1.57)			0.23
6) Rural-Bihar	-0.02 (-0.3)	-0.52 (-0.87)	0.99 (1.7)			0.36
7) Rural-Punjab	0.02 (0.47)	0.15 (0.41)	0.84 (2.33)			0.45
8) Manuf-aggregate	0.05 (2.54)	0.44 (2.11)	-0.003 (-0.001)			0.40
9) Manuf-textiles	0.04 (3.31)	0.32 (1.64)	0.07 (0.37)			0.32
10) Manuf-basic metals	0.007 (0.28)	0.75 (2.5)	-0.27 (-0.89)			0.41
<u>Indonesia-Plantations; all workers-All Wl</u>						
11) All Indonesia	-0.02 (-0.62)	0.71 (25.6)	0.30 (9.65)			0.99
12) Java	0.05 (0.35)	0.79 (10.49)	-0.09 (-3.91)			0.91
13) Sumatra	0.08 (1.03)	0.61 (16.49)	-0.01 (-1.01)			0.96
14) Rubber	-0.004 (-0.16)	0.70 (26.76)	0.10 (2.89)			0.98
15) Tea	0.13 (0.72)	0.71 (5.12)	0.01 (1.11)			0.68
<u>Pakistan-All Wl</u>						
16) Manufacturing	12.2 (.39)	-0.27 (-1.14)		0.08	1.3	1.9
17) Textiles	5.69 (1.6)	0.52 (1.73)		0.20	3.4	2.1
18) Textile Mill I	11.4 (2.77)	-0.06 (-0.19)		0.002	0.04	1.6
19) Urban Casual	4.41	0.54		0.27	7.28	1.8

some of them "phantom" employees. But this is speculation. With this exception, at least the current price variable has the correct sign and is significant in the regressions for both countries, and usually the lagged variable is also significant.

For India and Pakistan the price variable is often not significant. Prices changed very little in both countries for much of the period and during the periods when they did the average product in agriculture also was declining, making it difficult to distinguish the two causal factors. (Pakistan in 1973/4 and 1974/5, India 1965/6-1966/7.) But the major reason for the failure to model adequately the effect of prices and wages in these two countries is probably the inadequacy of the model itself and of the data used to test it.

Is it possible that the correlation between prices and wages is due to causality which runs the other way, i.e.: from wages to prices? This is highly unlikely in these four countries. Neither trade unions nor minimum wage legislation had a significant effect for most of the period, for any of the countries. Moreover, most wage goods prices are determined by weather, imports, international prices and government policies, not by wage costs. Wages are in any case a small proportion of total costs since most employment is self-employment. Food prices are determined primarily by government policy and imports. Wages are a minor element in food production costs. Even for cloth, wages are about one-third of total costs. Added, so even a 20% change in nominal wages will have only a limited effect on cloth prices. Given the large role of food and other traded goods in the consumption basket, whose price is not affected by wages, and the limited effect of wages on prices of non-traded wage goods, changes in wages will have little effect on the rate of inflation.

c) The Effect of Average Agricultural Product

The effect of the average agricultural product on real wages is somewhat less clearcut than that of prices. For Indonesia it was not readily possible to include this variable in the analysis because national income accounts were not compiled for many years.

They are available since 1958 and for earlier periods there are series on the production of major commodities like rice. The possible error is likely to be especially great in the early years, but the information available suggests that per capita agricultural product, at best, stagnated from the early 1950's to the mid-1960's and rose thereafter. These two time spans were periods of deterioration and improvement in the economy as a whole. For the Indonesian regressions in Table 8 a dummy variable distinguishing these two periods is generally significant. This provides indirect support for the hypothesis that the average product in agriculture does influence real wages.

For Bangladesh and India about half the regressions have the average product in agriculture as a significant variable with the right sign. Generally it is the logged, not the current variable which is significant. This is as one would expect, since the mechanism through which the average product in agriculture (AP) is expected to affect wages is one that would take time. That is, AP changes the reservation price of workers self-employed in agriculture, this affects the rate of migration to urban areas as well as the willingness to take wage labor in the rural areas. As the supply of wage labor at the prevailing wage is increased or diminished, the

Table 7

Regressions with Average Agricultural Product
(and Prices) as Explanatory Variables.

	C	P ₁	P _L	AP ₁	AP _L	R ²
<u>Bangladesh - All W₁</u>						
20) Rural	0.02 (1.22)	0.35 (2.9)	0.3 (2.41)	0.14 (1.05)	0.06 (0.4)	0.86
21) Urban Construction	0.01 (0.6)	0.45 (3.3)	0.39 (3.02)	0.34 (1.41)	0.46 (1.9)	0.79
22) Urban Unskilled	0.01 (1.07)	0.18 (1.61)	0.41 (4.12)	-0.15 (-0.8)	0.29 (1.31)	0.73
23) Manufacturing	0.07 (3.05)	0.6 (0.1)	-0.6 (-1.2)	0.62 (3.6)	0.73 (4.4)	0.87
<u>India - All W₁</u>						
24) Rural - aggregate	0.01 (-0.04)	0.4 (1.25)	0.42 (1.43)	0.07 (0.32)	0.27 (1.2)	0.29
				AP ₃	AP _{3L}	
25) Rural-Bihar	-0.03 (-0.3)	-2.98 (-1.8)	4.20 (2.6)	-3.13 (-1.89)	3.21 (2.03)	0.50
26) Rural-Punjab	0.01 (0.08)	-0.34 (-0.53)	1.62 (2.45)	-0.63 (-1.12)	0.83 (1.32)	0.54
				AP ₁	AP _L	
27) Manufacturing- aggregate	0.03 (3.71)	0.39 (2.52)	0.02 (0.13)	-0.06 (-0.3)	0.74 (3.03)	0.67
28) Manufacturing- textiles	0.04 (3.6)	0.29 (1.54)	0.11 (0.61)	-0.29 (-1.2)	0.48 (1.83)	0.45
29) Manufacturing- basic metals	0.003 (0.16)	0.73 (2.63)	-0.21 (-0.76)	0.13 (0.36)	0.84 (2.15)	0.56

Table 7 cont.

		LAP3	R ²	D.W.	F
<u>Pakistan - All LKW</u>					
30) Manufacturing	-9.56 (-2.60)	2.55 (3.83)	0.70	1.73	30.4
31) Textiles	-9.90 (-5.70)	2.61 (8.27)	0.78	2.0	43.1
32) Textile Mill I	-22.6 (-5.19)	4.90 (6.20)	0.79	1.7	60.6
33) Urban Casual	21.9	2.07 (9.59)	0.86	2.0	100.8
34) Cold Storage	-6.8	4.76 (11.05)	0.74	2.3	45.3

Table 8

REGRESSIONS WITH STATE OF ECONOMY AS EXPLANATORY VARIABLE - INDONESIA

	Constant	Current Prices	Lagged Prices	State of Economy	R ²
Permanent Indonesia	0.16 (0.16)	0.53 (0.94)	-0.07 (-0.43)	1.23 (1.02)	0.15
Permanent Java	-0.03 (-0.7)	0.71 (36.4)	0.13 (3.45)	0.09 (1.7)	0.99
Permanent Sumatra	0.2 (0.38)	0.65 (22.45)	0.07 (1.75)	0.08 (1.05)	0.98
Temporary Indonesia	-0.001 (-0.003)	0.70 (8.55)	-0.12 (-8.7)	0.01 (0.07)	0.94
Permanent & Temporary Indonesia	0.5 (0.66)	0.72 (27.15)	0.28 (9.08)	0.11 (1.68)	0.99
Permanent Rubber	-0.002 (-0.04)	0.74 (26.16)	0.02 (3.14)	0.07 (1.15)	0.99
Permanent Coffee	-0.02 (-0.4)	0.61 (25.01)	0.02 (3.08)	0.17 (2.72)	0.99
Permanent & Temporary Rubber	-0.04 (-0.58)	0.75 (20.33)		0.18 (2.95)	0.97
Permanent & Temporary Coffee	-0.2 (-0.41)	0.62 (20.56)		0.16 (2.57)	0.97

Sources: Plantation wages, generally for 20 years, for permanent or permanent and temporary or temporary workers. (See Table 4A)

Dependent variable is the nominal wage. The State of the Economy variable is a dummy, distinguishing the period from 1953 to 1963 from the period for 1966 to 1973.

Figures in parentheses are t - statistic

real wage will eventually respond to the changed supply. This is certainly a process which is not instantaneous, so a one year lag (at least) seems reasonable.

In Pakistan a three year average was used for AP which is a specification similar to the lagged variable for India and Bangladesh. For Pakistan it proved highly significant for all wage series. (The Pakistan model also lagged all variables on the assumption that adjustments are in percentage, not absolute, terms.)

That Indian results are generally not significant is not surprising. The average agricultural product variable was for the country as a whole. The differences in the movement of State agricultural wages (Table 5A) makes it clear that a country of India's size is not a single labor market, but a number of segmented markets, particularly in agriculture, but also in labor-intensive industry. A Bengali agricultural worker does not go to work the land in the Punjab, much less in Kerala and does not even go to the textile industry in Bombay. So one would need to use the average agricultural product for the area supplying each labor market to have an appropriate measure of the reservation price of labor in that market. In the absence of such data the use of a three year moving average, to measure broad productivity trends that might affect the whole country, is a poor substitute.

In addition to these statistical problems, particularly severe for India, the results for Pakistan suggest that different specifications need to be tried for a more complete test of the hypothesis. But the results so far obtained provide some limited support for the hypothesis that the average product in agriculture, and presumably in all self-employment, influences the reservation price of labor which, with a lag, influences the real wages. The connection, however, is not established unequivocally.

d) Why does Average Agricultural Product Affect Wages

The mechanism by which agricultural product affects real wages needs to be clearly specified, although to a large extent the model here presented rests on unproven hypotheses. It is, however, derived from standard labor surplus, dual economy and migration theories, with some major modifications.

These theories all postulate a sector where the marginal product (MP) is less than the income (or wage). The assumption here is that this situation holds true in self-employment and in some wage employment, particularly in agriculture. A major group for which this phenomenon exists are family workers on family-owned farms. The total output of these family farms is shared among family members, it is assumed, even if not all members of the family are needed to produce the output. That is, while the MP is low, or even zero, the family members' income is equal to the average product (AP). They will then not accept wage employment unless the wage income, adjusted for differences in the cost of living and in attractiveness of living conditions, is at least equal to the income from participation in work on the family farm, that is its average product. When the AP rises or falls, the reservation price of part of labor force also changes: the part whose alternative is work on the family farm.

This is the standard mechanism described by W. Arthur Lewis. But it has been argued, if the family is income maximizing it should send family members into wage employment as long as the wage is higher than the marginal product. As a result the family's income would increase by the difference between the wage and the marginal product on the family farm. The family member in wage employment, however, would need to receive from his family the difference between the wage and the average product on the

family farm, to equal his previous income. But the family may be unwilling to transfer this amount to the wage earner because there is no ready mechanism for such transfer, and/or because it is not customary to support someone who has left the household, and/or because the departure for wage employment decreases leisure and/or because it is considered inappropriate for family members to take wage employment. If family members do not receive any share from the farm if they take up wage employment, then the average, not the marginal, product will determine the reservation price of family labor on those family farms.

The same mechanism can also work in other family enterprises, particularly in the rural areas. For instance, families who own a small retail shop may support more family members than needed to do the work.

But, and this is not part of the standard two-sector model, there are two other groups in the labor force whose reservation price may also change over time, because they receive the average, not the marginal, product. First there are the (poor) self-employed in the urban (or rural) informal sector: the shoe shiners, bicycle rickshaw pullers, sidewalk vendors, scavengers, prostitutes, lottery ticket sellers, stall keepers and other petty traders, barbers, cobblers and some other service workers, and so on. In labor surplus economies there are too many of them. That is, some could go into wage employment at little or no loss in convenience and no increase in cost to those who purchase their goods or services. Their MP may be zero or close to it. But a work and income sharing system assures that their income approximates the average product, not the marginal product. When another bicycle rickshaw puller is added to the twenty who besiege any potential customer emerging from a restaurant or shop, everyone's income drops because the total work and income is divided among a larger

group. In a neo-classical world the price should decline as competition assures equality with a lower MP. The consumer is better off due to the lower price and greater supply. In the real, labor surplus, world, the assumption is that the price will not drop, as additional workers are absorbed. The price for the service remains unchanged and the total income generated is divided among the larger group. Price stability is due to one or more of the following mechanisms:

- an association of owners of the equipment used (bicycle rikshaws)
- an informal organization of the workers, who come from the same region or group of villages and who agree on a price
- the threat of retaliation against anyone lowering the price
- an understanding on the part of all participants in a particular labor market that they (i) can expect only a limited amount of work (ii) need to charge a particular price for a subsistence income, given the expected work, (iii) cannot lower the price to attract more customers, because competitors will immediately follow suit and everyone will be worse off, especially since total demand will not increase much. Work is now going on to provide more evidence on possible mechanisms for work and income sharing. But in some activities price competition seems / to be definitely absent, at least in Bangladesh, among the informal sector self-employed.

The other group who may receive closer to their average, than their marginal, product are those whose income is fixed according to traditional rules, particularly workers in agriculture. More workers may be used than needed to carry out a particular task, because everyone, at least from a certain group, is allowed to participate in the harvest or because of traditional patron-client relations. If the resulting output is shared

among all who participate in the work, or if there is a traditional compensation for the work, regardless of actual effort, then the compensation can exceed MP. The outstanding example is the Indonesian rice harvest. A pre-determined share of the harvest goes to all who participate and, at least at some time and in some areas, anyone who wanted to could participate. The MP may actually be negative, as hundreds of people jockeying for position on an acre of land, trample some of the grain yet everyone gets one-eighth or one-tenth of the harvest that person has brought in.

In both groups - whether work and income sharing is determined by a patron or by a group - additional people participating in the activity increase the leisure, but reduce the income of all other participants. But if leisure is already great it may have little or no value. Any reduction in the labor force in this activity then has little or no social opportunity cost - it does not reduce the convenience of consumers, and does not decrease utility by decreasing wanted leisure.

These two groups share the characteristic of family labor that they receive close to their average product as compensation, and that their income or wage therefore exceeds their marginal product. Including them in the analysis means that one needs to pay attention not only to the reservation price of potential wage labor whose opportunity cost is work and income sharing on the family farm, (or small enterprise) but also those whose opportunity cost is given by self-employment in the informal sector (urban and rural) and those where it is given by work for others, but compensation is not set strictly by profit maximizing criteria.

As a result, wages may fall even if the average product in agriculture rises because at the same time the earning opportunities of these other groups decline. (For instance, because bicycle rickshaws are banned from the cities, or participation in the harvest is limited.)

The other way in which the mechanism described deviates from the Fei-Ranis model is in the assumption that wages will rise as soon as the average product in self-employment and income sharing rises. The Fei-Ranis conclusion is that wages rise only when the MP in agriculture exceeds the wage. That is because they assume that agricultural workers are employed by landlords who pay a traditional wage, higher than the marginal product, for non-economic reasons. As workers are withdrawn from agriculture, the surplus of the landlords rises, as output remains unchanged ($MP=0$), but the wage bill declines. There is then no reason for the landlords to raise the wage, until enough workers have been withdrawn so the marginal product equals the (traditional) wage. With the agricultural wage unchanged, the reservation price of agricultural labor is unchanged and therefore the urban wage remains unchanged until the marginal product in agriculture equals the wage. The problem with this part of the Fei-Ranis model is to explain why landlords should pay a wage to their workers which exceeds their marginal product. This is especially difficult since once any significant number of landlords pay a lower wage, equal to the marginal product, their costs would decline and there would be pressure on others to do the same in order not to lose in the competitive struggle. So Fei-Ranis have to assume that practically all landlords pay a traditional real wage higher than the marginal product and raise the nominal wage to keep it in line with price rises. This seems an implausible assumption.

Here on the contrary, it is assumed that the reasons for an income equal to the AP not MP are three: sharing among family members, particularly of the output from family owned land; participation in output on (traditional) share basis; and work and income sharing in the informal sector by open or tacit collusion to avoid price competition. Under these circumstances the average product, rather than tradition, determines the income and with it, the reservation price. The reservation price can rise either because productivity and total output in a particular activity increased more rapidly than the number of workers (eg: because of technological change) or because the number of people who share in the output of that activity decreases, or both. So real wages can rise if the AP rises, even if the MP remains below the income, and even if it remains zero. Conversely, real wages can fall because total output declines, the number sharing in the output increases, or because the mechanisms for work and income sharing is weakened. For instance, as the pressure of population on income and resources increases, families that had very little land to begin with may lose control over that land and be pushed into other activities, or may no longer be willing to share income and work with more distant relatives and push them out, even as per capita output in agriculture rises. For similar reasons, sharing in the harvest work and income may be restricted as more and more people want to participate and the marginal product turns from positive to negative or an increasing commercialization weakens traditional pressures for sharing. In the informal sector the sanctions against price competition can become less effective as the labor market becomes larger, or less segmented.

e) Re-interpreting the Average Product Data

With the more complex model or set of hypotheses of the relationship between per capita agricultural output and real wages, sketched above, it is not surprising that there is no single, clear, statistical correlation between the two. The actual developments can be interpreted in terms of this more complex model.

In Indonesia, the stagnation of real wages from 1970 to 1975, despite a continuing increase in AP in agriculture, can be interpreted as due to the simultaneous: (i) decline in work and income sharing for labor in agriculture, due primarily to increasing commercialization; (ii) the decline in share cropping which also can provide a share in the average product rather than the marginal product; (iii) declining average income with increased numbers in typical work and income sharing activities in trade and transport as the labor force increased far more rapidly than the modern sector jobs; and (iv) government policies which reduced the total income in some important activities where income and work are shared (sidewalk vendors and bicycle rickshaw pullers). As a result, the income, and therefore the reservation price of labor, decreased in these activities, compensating for the increasing reservation price of family agricultural labor, as the average agricultural product increased.

In Bangladesh, the lack of security in rural areas in the early 1970's pushed large numbers into the cities. In the rural areas they may have shared in output under family and traditional arrangements, in the cities they lowered the average product and income in the petty trading, service,

transport and construction activities which were open to them and where the marginal product may already have been at zero or close to it. This may have contributed to the decline of 50% in real wages although per capita agricultural product declined only 40%.

While these data and their interpretation do not provide strong support for the model sketched earlier they are, at least, not inconsistent with it. And the more complex set of hypotheses at least provides a plausible explanation for the correlation between AP in agriculture and real wages in some cases, but not in others.

f) The Effects of Economic Growth or Demand on Real Wages

If the hypotheses, stated earlier are correct, that all four economies are labor surplus but that real wages are influenced by the reservation price of labor, then changes in demand for labor could affect the real wage in two ways: (i) as the demand for labor in the modern sectors increases, workers with a higher reservation price will have to be enticed from self-employment requiring a higher wage (ii) as employers respond to what they consider a temporary increase in demand by raising wages, not by employing more workers.

(i) It has been suggested that the reservation price for labor is largely, but not wholly given by the average product in activities outside the commercial, wage paying sector, mostly self-employment. The average product in different self-employment (or wage employment) activities is unlikely to be uniform, even if the marginal product is close to zero in many activities. A member of a land-owning family may have a far higher average product and income than one whose income is dependent on a client relationship with a landlord which allows him to obtain a harvest share. That income in turn may be much higher than that of the really petty trader, who buys a package of cigarettes and sells individual cigarettes, who in turn has more than the scavenger. The labor markets are highly segmented, with movement determined or inhibited by control of assets, access to credit and personal relationships.

If there are different AP, therefore different incomes, therefore different reservation prices, the labor supply curve is not likely to be horizontal. It may, however, be highly elastic, because there are a large number of persons whose income is close to subsistence, as defined in that society, who would eagerly accept work at a wage equal to, or even slightly below, their current income, if regular employment is offered. If the labor supply is not horizontal then an increase in labor demand, because of more rapid growth will raise wages. But if the supply of labor is quite elastic then it may be difficult to measure

this effect since no good proxies exist for shift in the demand curve.

(ii) If some employers of regular (not casual) labor believe that any increase in the demand for their product is a temporary one they may, because of hiring and firing costs, decide not to increase their labor force to meet this demand. Instead of moving along a very elastic, long term supply curve for labor, by hiring new workers near the prevailing wage, they move along the quite inelastic short-term supply curve, paying their own labor force more to induce them to work overtime. However, only a limited number of firms are likely to behave this way during any period and their effect on the average wage may usually be quite limited.

With the long-term supply of labor highly elastic and only a few firms moving along the short-term supply curve, a change in demand for labor then should have a small, but perceptible, effect on real wages. Real wages then should be little affected by changes in the National Income or National Product, which will influence the demand for labor, except to the extent that GNP/GDP changes reflect changes in the average product in agriculture, if the latter influences the reservation price of labor. Indeed, when the independent effect of AP in agriculture has been taken into account as a separate variable, then changes in GNP, or GNP lagged by a year, have a significant effect on wages in only one regression out of 7. (Table 9) Since changes in GNP and AP are substantially correlated (see table 13) it is not surprising that the addition of the GNP variable somewhat reduces the significance of the AP variable. (see Table 7 vs. Table 9). Still AP is more significant than GNP in explaining changes in the wages, lending slight support to the argument that it is the reservation price of labor, not the demand for labor which is more important in determining wages.

As already noted, for Indonesia, neither GNP nor AP data were available for most years. A dummy variable was used to distinguish the period of stagnant or declining per capita GNP and AP (early 1950's to mid-1960's) from the period

Table 9

REGRESSIONS WITH NATIONAL PRODUCT AND GOVERNMENT
INTERVENTION AS EXPLANATORY VARIABLES

	C	P1	PL	AP1	APL	D1	DL	GD	R2
<u>Bangladesh - all W1</u>									
35) Rural	0.05 (1.5)	0.22 (1.5)	0.34 (2.7)	-0.02 (-0.2)	0.72 (1.3)	0.27 (1.3)	-0.88 (-1.2)		0.88
36) Urban construction	0.02 (0.6)	-0.07 (-0.3)	0.72 (3.8)	-1.30 (-1.7)	1.06 (1.5)	1.79 (2.2)	-1.50 (-1.6)		0.86
37) Urban unskilled	0.02 (1.0)	-0.08 (0.3)	0.57 (2.7)	-0.86 (-1.2)	0.58 (0.9)	0.82 (1.2)	-0.77 (-0.8)		0.76
38) Manufacturing	0.05 (1.8)	0.11 (0.3)	-0.80 (-1.6)	0.32 (-0.6)	1.33 (3.0)	1.50 (1.7)	-1.04 (-1.6)	0.21 (4.8)	0.92
<u>India - all W1</u>									
39) Manur. - aggregate	0.01 (0.7)	0.45 (2.1)	0.03 (0.2)	-0.37 (-1.2)	0.79 (2.5)	0.31 (1.4)	0.15 (0.7)	0.01 (0.4)	0.73
40) Manuf. - textiles	0.05 (3.2)	0.15 (0.8)	0.15 (1.0)	-0.26 (-0.9)	0.73 (3.0)	-0.05 (-0.3)	-0.14 (-0.6)	-0.04 (3.4)	0.68
41) Manuf. - basic metals	0.00 (0.4)	0.76 (2.2)	-0.24 (-0.8)	0.18 (0.4)	0.83 (1.6)	-0.02 (-0.7)	0.13 (0.4)	-0.03 (-0.8)	0.60

Note: Indonesia. See table 8

D1 = Rate of change in GNP; DL = D1 lagged by one year;
GD = significant change in minimum wage

of rapid growth after the mid-1960's. It proved to be highly significant as one would expect, since the dummy incorporates both explanatory variables. With the rising agricultural product the reservation price of labor would increase. Moreover the very rapid growth in GNP of the latter period should cause a substantial number of firms to operate on the short-run labor supply curve, given the special difficulties, imposed by law and tradition in Indonesia, of dismissing workers.

For Pakistan a specific attempt was made to distinguish the movement along the (assumed near-) horizontal long term supply curve of labor from movement along the steeply positively sloping short term curve. It was assumed that when prices for a commodity rise that employers will regard this as a short-term phenomenon and will attempt to obtain more output from their already employed workers, by paying higher (overtime) wages i.e. moving along the short term supply curve. On the other hand, if output increases employers were assumed to consider this the result of a long-term increase in demand, resulting in the employment of more workers near the existing wage i.e. a movement along the long-term supply curve. There are no good a priori grounds for these hypotheses; the two explanatory variables should be, and were in fact, closely related. That is, when prices rise because of an increase in demand and employers pay overtime, this is presumably to obtain an increase in output, so output should also rise. Conversely, if demand increases are first reflected in output, not price rises, for instance when capacity is put to work, one might expect initial output increases to be achieved by over-time pay to avoid hiring and firing costs.

In the two cases where relative price and change in output data were available - for all of manufacturing and textiles - these two independent variables were closely correlated. (for textiles the correlation coefficient was 0.80). When these very poor proxies for movement along the long and short run supply curve were used, there were no significant results for all of manufacturing, perhaps due

to aggregation and structural problems in dealing with such a heterogeneous sector. (Table 10) However for the textile industry, when the relative price rose, real wages rose also (movement along the short run supply curve), but when output increased then real wages declined. The positive effect on real wages of a relative price rise provides some evidence in support of the hypothesis that increased demand can cause increased wages, as firms move along the short-term labor supply curve. The negative correlation of real wages with output is more difficult to explain. Even with a horizontal long-term supply curve of labor, wages should not decline as more workers are hired to increase output. A plausible explanation would be that increased output reflected to some extent the initial operation of new plants, paying lower wages to apprentices, while declines in output reflected shutdowns by older mills, paying higher wages because of seniority. In any case, given the inadequacy of the underlying model as explanation, these results for Pakistan cannot be given too much weight.

In short, two more plausible reasons have been advanced why the rate of growth and changes in real wages could be related, in addition to the argument that rapid growth increases the reservation price of labor. First there is the possibility that the longer term supply curve of labor is not horizontal but positively sloped although highly elastic. Then with an increase in demand for labor, (a shift in the demand curve), as a result of rapid growth, real wages will rise as a result of movement along the long-term supply curve. Second, that more rapid growth induces many firms to move along an inelastic short term supply curve, paying overtime rather than hiring more workers. Rapid growth, producing an upward shift in the labor supply curve, plus greater shifts along both long and short run supply curves, would then produce a significant increase in real wages, unless counteracted by a decline in work and income sharing.

REGRESSIONS WITH RELATIVE COMMODITY PRICES

CHANGE IN OUTPUT AND MINIMUM WAGE AS EXPLANATORY VARIABLES - PAKISTAN

	C.	LAP3	SH	K	GD	R ²	DW	F
<u>Manufacturing</u>								
42. Price change	-8.0 (-1.7)	2.2 (2.6)	0.02 (0.4)	K	0.09 (1.8)	0.77		11.9
43. Output change	-9.0 (-1.8)	2.4 (2.7)		0.16 (0.8)	0.07 (1.3)	0.78		12.7
<u>Textiles</u>								
44. Price change	-8.9 (-5.4)	1.9 (6.1)	0.63 (3.7)		0.05 (1.3)	0.92	1.3	39.5
45. Output change	-3.0 (-1.2)	1.0 (1.6)		-0.65 (-2.8)	0.11	0.90	2.2	30.0
46. Both change	-2.6 (-0.9)	1.9 (5.7)	-0.04 (-0.7)	-0.71 (-2.5)	0.11 (2.3)	0.90	2.0	20.2

Notes: SH = Rate of change in price of commodity relative to overall price index.

K = Change in output of commodity

GD = Minimum wages - dummy for years when changed rapidly

g) The Effect of Commodity Prices, Wage Shares and Minimum Wages on Real Wages

There are other reasons for believing that profits and wages are related and that a higher rate of growth, generally producing higher profits for more firms, will therefore lead to higher wages. Both workers and/or employers can believe that there is a "fair" wage share, that wages should be related to profits. Specifically one can hypothesize that real wages are affected by several factors which are related to the profitability of the enterprise:

- (i) When the enterprise is profitable workers demand a higher wage and their pressure is effective
- (ii) The higher the profits the greater the willingness and ability of employers to raise wages for ethical reasons or because they prefer a happier labor force and can now indulge this preference.

Both of these are non-economic considerations and assume that employers are not pure profit maximizers or that employees can exert pressure which does not stem directly from economic power. But there are also economic reasons for higher wages with higher profits:

- (iii) The cost to employers of worker dissatisfaction increases
- (iv) As discussed earlier, employers may pay more to already employed workers to increase output, rather than hiring new workers at a lower wage if they think the increase in demand/profitability is temporary.

Two quite indirect and unsatisfactory proxy variables were used to test the relationship between profits and wages, since no direct data on profitability was available. First, for all of manufacturing in India and for plantation crops in Indonesia the wage share in total value added in a particular year was compared with the average wage share. If the wage share drops it means that the profit share, and therefore perhaps, although not necessarily, the profit rate, has increased (Table 11). The other proxy variable compares the price change in a particular plantation crop, with price changes for all

Table 11

REGRESSIONS WITH MINIMUM WAGES AND WAGE SHARES AS EXPLANATORY VARIABLES

	C	P1	PL	WSL2	WSLX	AP1	AP2	GD	R2
<u>India</u>									
47) Manu- facturing	0.03 (1.6)	-0.15 (-0.4)	0.50 (2.0)	0.14 (0.4)	-0.18 (-0.5)	0.02 (0.2)	0.01 (0.1)	0.03 (1.2)	0.55
<u>Indonesia -</u>									
Permanent & Temporary									
48) Rubber	0.23	0.73	0.01	0.14	0.06			<u>D</u> 0.48	0.99
49) Tea	0.42 (1.7)	0.80 (14.5)	0.05 (1.7)	0.88 (7.0)	-0.38 (-3.2)			-0.69 (-1.5)	0.97
<u>Pakistan</u>									
50) Manu- facturing	-7.30 (-1.7)						<u>LAP3</u> 2.10 (2.7)	<u>GD</u> 0.09 (1.9)	0.76
51) Tex- tiles	-8.00 (-3.7)						2.30 (5.7)	0.08 (1.6)	0.82
52) Tex- tile Mill I	-15.70 (3.2)						3.60 (4.0)	0.20 (3.2)	0.87
53) Urban Casual	-13.20 (-6.6)						3.20 (8.7)	0.03 (0.6)	0.87
54) Cold Storage	-3.30 (3.1)						1.40 (7.4)	0.13 (4.7)	0.89

Note: WSL2 = Rate of change in the deviation of the actual wage share from its mean

WSLX = WSL2, lagged by a year

GD = Effective minimum wage legislation - dummy variable

D = State of economy dummy

Dependant Variable = W1 or nominal wage for India and Indonesia, LRW or log real wage for Pakistan

plantation crops in Indonesia. Here the assumption obviously is that a greater than average increase in commodity price means a higher rate of profits. (Table 12)

Both proxies give some significant results, as does the proxy variable for profitability in the Pakistan textile industry (Table 10). One possible explanation why they do not universally prove significant is that they are not a very good proxy for the hypothesized variable. The workers' share may decline during a period when total value added also declines. The profit share may then go up but the absolute amount of profit and the rate of return on capital would then decline. This could happen when the terms of trade turn against manufacturing, if the employers are better able to defend their interests than the workers and impose a higher share of the burden of declining total real income on the workers. Similarly it is perfectly possible for the relative price of a commodity to rise at a time when the absolute price is falling, because other commodity prices have fallen even more. Profitability may then decline even though relative prices rose. Nevertheless the wage share is significant in some regression equations. Moreover a simple analysis of changes in commodity prices, shows that in 45 out of 75 cases, real wages increase/decrease when the price of a particular plantation crop increases/decreases more than the price of other plantation crops. So one can conclude that there is some evidence that wages change directly with profits, but that it is not possible, using the proxy variables available, to establish an unequivocal relationship.

Government minimum wage legislation is another factor potentially influencing real wages. Of course, minimum wages generally affect only the lowest paid workers in the formal, organized, sector, especially in manufacturing. Since data are normally available only for the average wage of all workers in particular industries or all of manufacturing and, at best, for all production workers, it is difficult to trace the effect of minimum wage legislation.

Table 12

REGRESSIONS WITH COMMODITY PRICES AMONG
INDEPENDENT VARIABLES - INDONESIA

Con- stant	Commodity prices	Price level	State of economy	R-square	F	D.W.
-0.08 (-2.5)	0.26 (2.0)	0.93 (3.0)	0.16	0.24	8.7	2.4
0.07 (-2.2)	0.26 (2.0)		0.16 (3.1)	0.16	7.9	2.6
-0.8 (-0.3)	0.31 (2.3)	0.03 (2.6)		0.13	6.1	2.3

Note: Permanent plantation workers real wage is dependent variable. All plantation (estate) crops for which appropriate commodity prices could be found were included in the analysis. Most such crops are primarily produced for export and the world market price is more relevant than the domestic price. For sugar, consumed domestically, the domestic price was used. The analysis covered rubber, coffee, tobacco, sugar and tea and the period 1953 through 1963 and 1966 through 1972. (The year 1962 was arithmetically interpolated).

For the price level, the second derivative was used to represent changes in the rate of price increase or decrease.

A dummy variable distinguished the period before 1965 from the period after 1966.

For real wages, the dependent variable, the change from the previous year was used.

Ordinary least squares regressions were calculated for the 85 observations available.

Moreover in three of the four countries (the exception was India) and for most of the time minimum wages were absent, unenforced and/or not changed despite rapid price increases. One would therefore expect to find little statistical relationship between minimum wage changes and real wages in most series.

The one country, India, where minimum wages applied throughout the period and had wide coverage, seems to have followed a low wage policy throughout most of the period examined, even during the years when socialism and populism were most strongly emphasized by government. That is, government-set minimum wages were generally at or below the prevailing wage for almost all workers and therefore had little effect on the real wage of the overwhelming majority. Most of the workers whose wage was below the minimum were casual, day or informal sector workers to whom the legislation did not apply.

Of course, a policy of low minimum wages is quite defensible in India and elsewhere in the region not only on grounds of economic efficiency but also of equity. Workers in the formal or organized sector are the only ones for whom the legislation is enforceable and they are already better off than the landless agricultural workers and those in the informal and self employed urban sector. The workers who benefit from higher minimum wages are, in the four countries, no more than 5% of the labor force. To increase their income by high minimum wages will not only reduce employment in the organized sector, it may worsen income distribution by benefiting those whose income is already above that of the really poor.

As a result of India's policy of not raising the minimum above the prevailing wage, the minimum wage variable is not significant for the Indian series. Indonesia did not have effective minimum wage legislation. Pakistan and Bangladesh sharply raised the minimum wage in the late 1960's (and early 1970's). A dummy variable for the years when the rise in the minimum wage exceeded the rise in prices naturally proves highly significant (Tables 9 & 11).

Obviously government minimum wage policy can be effective if the wage is raised sufficiently.

h) The Interrelationship Among Factors in Real Wage Changes

After analyzing the impact of individual explanatory variables on wages one needs to consider the correlation among the independent variables. Not surprisingly the rate of inflation is correlated with the rate of inflation lagged by one year, but the correlation is in fact surprisingly low. For Indonesia it is negligible and even for India and Bangladesh it is only 0.6 and 0.5. These are clearly separate variables.

The change in average product in agriculture and in national product are closely correlated, as one would expect in countries where agriculture is a large proportion on the national product. For India, where agriculture is less than 50% of the national product the correlation is obviously less close than for Bangladesh where agriculture is far more important.

Most interesting is the low correlation between the rate of inflation and the average product in agriculture. One might assume that the two represent simply different indexes of the same phenomenon: when the harvest is bad, the average product in agriculture declines and prices rise. For India the correlation is negligible, but positive, that is, it has the wrong sign. For Bangladesh it is negative, as one would expect, but not very high. It is clear that the weather is only one factor in the rate of inflation, with the level of imports (and stores) and the change in the money supply also important factors. Consequently the two variables are quite independent and it is reasonable to treat them as such.

Table 13

CORRELATION AMONG INDEPENDENT VARIABLES

	P1	PL	AP1	APL	D1	DL
<u>55. Bangladesh</u>						
PL	0.52					
AP1	-0.20	0.22				
APL	-0.31	-0.15	-0.12			
D1	-0.05	0.12	0.87	0.16		
DL	-0.49	-0.09	0.04	0.93	0.23	
<u>56. India</u>						
PL	0.63					
AP1	0.03	0.20				
APL	0.08	0.08	0.39			
D1	-0.09	-0.01	0.51	-0.09		
DL	-0.31	-0.05	0.30	0.47	-0.26	
GD	-0.26	-0.05	0.21	0.33	0.29	0.00
<u>57. Indonesia</u>						
PL	0.02					
D	-0.28	0.23				
<u>58. Pakistan</u>						
			AP3			
AP3	0.34					
D1	0.86		0.55			
GD	0.38		0.24		0.54	