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PROGRESS REPORT

AID Contract CSD-1543

"Comparative Studies of Resource Allocation and
Development Policy"

HARVARD UNIVERSITY

Report from July 1 - December 31, 1971

FOREWORD

This report describes work completed under AID contract CSD-1543 through December 31, 1971. It is not a complete summary of all research done to date; rather it supplements and updates previous progress reports. This document should also be read in conjunction with the November 1971 proposal to extend the Harvard contract. The latter document contains a much fuller statement of past progress and future expectations of work under the agreement.

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I. BIBLIOGRAPHY OF RESEARCH - JULY 1, 1971 - DECEMBER 31, 1971

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36. Taylor, Lance, "Model-Based Consistency Checks on Medium-Term Growth Prospects in Peru," October 1971, mimeo.
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II. SUBSTANTIVE PROGRESS

Members of the Development Research Group (DRG) continued to research both theoretical and empirical aspects of development policy and planning. The areas highlighted in this progress report include rural development; financial systems for development; trade, aid and regional development; public policy for public enterprises; and human capital problems of development. The approaches to the issues and the problems raised in each of these areas vary by country, topic and technique; however, a review of the more important policy generalizations is the main purpose of this presentation.

A. Rural Development

The work on the new agricultural technology, synonymous with the "green" or "seed-fertilizer" revolution, initially focused on the production consequences of technological innovations. More recently, however, there has been increased analysis of the relationship of agricultural productivity to regional development, income and land distribution, and alternative employment prospects for rural people unable to use this new technology. The following description of the work by Carl Gotsch, John Thomas, and Walter Falcon reflects this concern for technology's longer-range impact on economic, social and political issues.

During the past six months, Carl H. Gotsch completed several papers on the economic effects of technical change in West Pakistan agriculture. The first, "Technology, Prices and Incomes in West Pakistan Agriculture: Some Observations on the Green Revolution" (10*), used the synthetic farm

* Numbers in parentheses refer to numbered entries in Bibliography of Research, Section I.

management approach to investigate the effects of the seed, fertilizer and water technology on the incomes of different size holdings. The paper concluded that with this input package, small farmers, by utilizing their own labor more intensively, could overcome the disproportional impact of fixed costs on small holdings and improve their income position viz-à-viz their larger neighbors. The key to this result, however, was the availability of supplementary water. Seeds and fertilizer alone might actually reverse the result since cereal crops, e.g., the new wheat varieties, might displace more traditional, highly labor-intensive crops such as cotton.

Another important result of the paper was developed by using world prices to calculate the value of inputs and outputs. Based on the comparison of the "shadow prices" at world prices with those obtained in the domestic-prices solution, it appeared that the so-called "power bottleneck" was partly attributable to the distorted relative prices prevailing in the domestic economy.

"Notes on Recent Developments in West Pakistan Agriculture" (9), traced the effects of the "green revolution" during the decade of the '60's. By disaggregating yield and acreage data, Gotsch showed that the sources of the 5-6 percent rate of agricultural growth obtained during this period shifted from acreage-related to yield-related phenomena. The former was brought about largely by the expansion of the facilities for pumping supplementary irrigation water, while the latter was more dependent upon improved seed varieties and heavier doses of fertilizer than had characterized the earlier years of the decade.

Gotsch also continued to develop a broader methodological framework within which to view the process of rural development. In two papers, "The Distributive Impact of Agricultural Growth: Low-Income Farmers and the 'System'" (7), and "Technical Change and the Distribution of Rural Incomes" (8), he argued that understanding the distributional effects of growth and technical change required the concept of a "rural system," i.e., the specification of explicit institutional and political mechanisms in the development process. On the basis of considerations of (a) the nature of available technology, (b) the absolute size and distribution of productive assets, (c) the type and distribution of institutional services, and (d) the social customs and traditions of the society, he proposed a number of alternative typologies or "development situations." The dynamic interaction of technology and institutions was examined empirically by reviewing the distributive impact of the tubewell technology in Sahiwal District, West Pakistan, and Comilla in East Bengal. In these cases, Gotsch concluded that the identical technology, with essentially the same engineering and economic characteristics, had a significantly different effect on the ultimate structure of the two rural communities. This difference was traced to the institutional circumstances surrounding the technology's use and diffusion.

During the period, John Thomas prepared the first draft of a paper entitled "Agricultural Production, Equity and Rural Development in East Pakistan" (37). This paper analyzed why the standard model of agricultural growth, with its emphasis on disseminating an improved technology through the market system, was insufficient to produce a rapid increase in

production in East Bengal. When the scale of agriculture was as small as that found in East Bengal, farmer organizations were shown to be an additional requirement for rapid increases in production. Without these, increases were slow, and the benefits highly concentrated. The paper examined and evaluated the components of the model of rural development created by the Pakistan Academy for Rural Development at Comilla. These included the Rural Works Program, a labor program to create rural infrastructure; the system of organizing rural development at the Thana (county) level; the Thana Irrigation Program based on low-lift pumping to exploit surface water; and the cooperative organizations to provide credit, storage, processing and marketing facilities to small farmers. The prospects for the successful wider application of this group of activities -- the Integrated Rural Development Program -- were also evaluated. The paper, presently undergoing revision, concluded that small farmer organizations were necessary both to a rapid increase in production and to the equitable distribution of the benefits of such an increase both in East Bengal and in other areas where agriculture is typified by small agricultural holdings.

Thomas also continued work on the issues of irrigation technology and the organization for water development in East Bengal. This work analyzed why highly centralized, technically complex projects for water management were undertaken, when simpler means, at lower cost, were available. The combination of requirements and interests of the government agencies and foreign aid donors, were examined, and factors determining the choice of institutions and technology other than economic

returns were appraised. A paper on this subject will be available shortly.

Walter P. Falcon, in conjunction with C. Peter Timmer of Stanford University, began preliminary investigations into the nature of the political economy of rice in Asia. Their analysis focused on the tensions existing in world rice trade that have arisen because of the "green revolution." They were particularly interested in the revolution's effect on the interations of international trade and national policies, and on such issues as "self-sufficiency." Their analytical framework for examining rice policies used the language and structure of linear programming, allowing for comparative analysis of the nine countries in question, viz., Taiwan, Philippines, Ceylon, Indonesia, India, Japan, Korea, Pakistan and Thailand.

B. Financial Systems for Development

New research developments in the financial area were designed to offset the inadequacy of the presently available literature in this field, i.e., limited cross-sectional and individual country studies, few of which have related institutional development to economic growth or to policies affecting the financial system.

In an effort to bridge this gap, David Cole began a comparison of financial systems in groups of countries -- one group with slow-growing financial sectors versus another set with rapid growth. During the reporting period, Cole collected data on a sizeable number of countries to make cross-sectional studies of the size and growth of financial systems.

On the basis of these data, two groups comprising eight or ten countries will be selected for more intensive study.

Millard Long focused on selected aspects of the financial system as they relate to growth and policy. He worked on the gamut of financial issues -- interest rate and institutional reform, money creation and inflation, bank control through regulation of reserves and flow of funds accounts. Long also began writing a paper on the Ghanaian financial situation based on material collected during his summer assignment. Financial policy issues of importance to Ghana and to most other developing countries are being emphasized.

Long also completed a paper entitled "Finance and Cost Benefit Analysis: The Case of Foreign Loans" (11). This paper developed a methodology for appraising foreign loans from the standpoint of the debtor, and emphasized the inadequacy of some suggested approaches, such as the debt-servicing ratio, grant equivalent estimates and simple macro models of the two-gap variety. To counter these approaches, Long developed a cost-benefit analysis of foreign loans and, through the use of numerical examples, exposed a number of issues that must be considered in appraising foreign loans.

C. Trade, Aid and Regional Development

Development research in trade focused primarily on Latin America, although the findings appear to have application in other regions as well. The analytic viewpoint was "gradualist," i.e., a pragmatic attitude which emphasized consideration of the real-world conditions under which

policy is made and implemented. The range of research covered in this context included trade and industrial-organization policy, balance of payments, economic policy strategy and economic integration.

Daniel M. Schydrowsky extended his work on the measurement and use of effective tariff protection. He began this analysis by re-examining the arguments for the use of domestic resource cost of foreign exchange and effective protection measures for the purpose of choosing among projects. He concluded that if factors were valued at their appropriate second-best shadow prices, the two indicators would give different answers, and that, in general, the effective protection approach was to be preferred over the domestic resource cost of foreign exchange. In a joint paper with Bela Balassa entitled "Domestic Resource Costs and Effective Protection Once Again" (30), this position was argued in some detail.

Schydrowsky also prepared a second joint paper with Bela Balassa entitled "Indicators of Protection and of Other Incentive Measures" (31), which was presented to the Cuernavaca Conference on the Role of the Computer in Economic and Social Research in Latin America. This paper presented a fairly complete summary of the currently used measures of protection and other incentives. It dealt with the measurement of protection and the use of such indices in constructing optimal tariff systems. This survey went beyond previous efforts of this kind in including the first extensive discussion on indicators related to cash flow rather than to value added.

In a third and related effort in this area, Schydrowsky continued his collaborative research in Colombia and Argentina on the structure of economic incentives to the different branches of economic activity in

these countries. This study incorporated internal tax, credit and labor policy as well as trade policy. Data collection in Argentina was done by Dr. Julio Berlinski, former advisor to the Ministry of Economics and National Statistical Office. In Colombia, data were collected principally by Thomas L. Hutcheson, former DAS advisor to Planeacion and currently with the Development Research Center at the University of Michigan, and by Malcolm Gillis, former DAS advisor at the National Planning Department in Colombia. The data gathering now has been virtually completed, and the computational stage is about to begin. The precise nature of the results cannot be forecast at this stage; however, it is anticipated that the inclusion of domestic incentive measures in addition to foreign trade measures is likely to reveal a substantially lower bias against primary activities and towards industry than has been shown by previous studies.

Schydrowsky also continued his work on issues related to the utilization of installed capacity in LDC's. Using benefit-cost analysis, he showed that when profit calculations were performed at market prices, there was a reasonable preference on the part of entrepreneurs for the installation of new equipment rather than the more intensive use of existing capacity. At the same time, when the calculation was repeated at shadow prices, a preference for multiple shifting over installation of additional capacity emerged. Thus private and public rationality led to

contradictory patterns of behavior. This contradiction explained the paradox inherent in the common-sense observation that, on the one hand, LDC's were capital-scarce and therefore ought to utilize it intensively; and on the other hand, that entrepreneurs knew what they were doing and therefore must be maximizing profits if they kept installing new capacity.

In the course of the reporting period, Lance Taylor completed a paper with Stephen L. Black of Harvard College, on the effects of changes in commercial policy on resource allocation in Chile ("Practical General Equilibrium Estimation of Resource Pulls Under Trade Liberalization" 35). The calculations were done with a general equilibrium model, and gave rather different results from partial-equilibrium, effective rate of protection calculations which had been made previously. The obvious importance of general equilibrium effects in influencing the results and the ease with which the model was solved suggested that this method may be an important competitor to the traditional effective rates of protection approach.

While in Peru during the summer, Taylor also worked out a simple growth model for aggregate medium-term projections of economic growth in that country. The results in his paper, "Model-Based Consistency Checks on Medium-Term Growth Prospects in Peru" (36), indicated that Peru's fairly rapid growth rate up until 1968 might be duplicated in the 1970's, even though foreign exchange may be less plentiful. Taylor concluded that factor prices (including the exchange rate) would need to be modified to compensate for the expected dollar scarcity; he also presented rough estimates of the magnitudes of necessary changes.

Richard Mallon continued to progress on his book, Economic Policy Making in a Conflict Society: The Argentine Case (12 through 19). Although several sections remain to be revised and/or completed, Part III, "Stabilization Policy," which analyzed anti-inflationary policy, took form. (Revised Chapters 6 and 7, "Between Creeping and Hyper-Inflation: a Monetarist Dilemma" (14), and "Structural Inflation, Income Distribution and the Financing of Investment" (18), were discussed in previous progress reports, as were Parts I and II.)

Recently completed, Chapter 8 of Part III, "Towards Relative Price Stabilization" (19), discussed the empirical evidence on price determination in Argentina, including a re-evaluation of econometric studies that have been undertaken to validate the cost-push explanation of inflation. Mallon concluded that a policy of 'neutral inflation' may be the most viable stabilization strategy for Argentina.

Based on his experience as integration advisor to the Colombian National Planning Department, David Morawetz prepared several papers on the Andean Community. The first of these, "Harmonization of Economic Policies in Customs Unions among Less Developed Countries: The Andean Group" (20), examined the conditions under which the formation of a customs union or free trade area made some degree of harmonization of economic policies desirable, and the extent to which these conditions applied in the Andean Group customs union recently formed by Bolivia, Chile, Colombia, Ecuador and Peru. The policies analyzed included tariffs, export subsidies, indirect taxes, exchange rates, planning and macro stabilization, intra-union factor movements, foreign capital and currency unification.

A second paper, "Problems of Transport and Communications in the Andean Group" (21), presented detailed Andean and comparative EEC data to demonstrate the seriousness of the transport and communications barriers in the Andean Group and the consequent need to modify hopes that the Andean Group will present a solution to Andean development problems.

Earlier work on foreign aid came largely to a close in the present reporting period. Gustav F. Papanek revised and expanded two papers on "Aid, Foreign Investment, Savings and Growth in Less Developed Countries" (22), and "The Effect of Aid and Other Resource Transfers on Savings and Growth in Less Developed Countries" (23). These papers were concerned primarily with the impact of aid inflows on savings and growth. Various approaches and methodologies were critically analyzed as to the appropriateness in explaining the effects aid has on several countries' development. Papanek concluded that it was mainly exogenous factors, rather than aid, that caused both low savings rates and low growth rates in a number of countries, and that generally, the negative correlation between aid inflows and savings reflected little causal association.

Papanek, together with S. Jakubiak and E. Levine, also prepared a "Statistical Appendix to 'Aid, Foreign Private Investment, Savings and Growth in Less Developed Countries'" (27). This Appendix provided comparative data for 34 countries in the 1950's and 51 countries in the 1960's on growth, aid, foreign private investment, other foreign resource inflows, savings, and primary and other exports.

During the reporting period, Papanek also did extensive editing on the four essays which will appear in the forthcoming book, Comparative Growth and Development Strategies: China, Japan, India and Pakistan (27). These essays compare Japanese and Chinese national development strategies, Chinese and Indian growth patterns, and agricultural decision-making in China and Pakistan. Papanek concluded that India's growth rate in the 1960's was substantially lower than Pakistan's, despite the fact that the two countries had roughly the same rate of investment. The greater economic efficiency of the Pakistan economy was partly due to the greater emphasis on low-technology and short-gestation-period investments and partly to greater use of private incentives. The higher Indian growth rate in the 1950's was largely explained by India's greater capital stock, particularly in industry.

A summary chapter by Papanek, entitled "Comparative Development Strategies" (29), discussed some of the reasons why relative Chinese growth performance has been less impressive than generally assumed; the difference among the four economies in strategy for financing investment; and the differences in their efficiency. Papanek argued that development strategies seem to come as integrated wholes, and that none of these countries were able to select a combination of strategies that achieved a combination of high growth rates of national product, high rates of savings, an efficient use of capital stock, equity in income distribution and non-authoritarian regimes.

D. Public Policy for Public Enterprise

Work on public enterprises represented a new area of activity for the research group. During the course of the reporting period, Lester Gordon coordinated the plans for research into the nature of public ownership of productive enterprises. In addition, the organizational aspects of this effort, the selection of appropriate personnel, and extensive bibliographic work were completed.

Since the use of public enterprises by developing countries is expected to proliferate in the coming years, there is a need to identify the goals and establish the methods to engender satisfactory performance. Work began on a series of case studies designed to provide data on objectives and performance of public sector enterprises. Typical of this approach was David Williams' preliminary work on government-private joint ventures in Tanzania. He will analyze more than 30 companies engaged in manufacturing and mining. In addition to determining the importance of factors relating to the form and nature of the initial cooperative agreement between Tanzanian Government agencies and private foreign investors, the study will concentrate on the dynamic problems of skill transference, and the likely impact of this factor on Tanzanian policy toward joint ventures.

E. Human Capital Problems of Development

Work in the area of human capital drew near a close during the period. Lance Taylor and Marcelo Selowsky completed a joint research project on the microeconomic implications of infant deprivation in Chile.

Their study, "The Economics of Malnourished Children: A Study of Disinvestment in Human Capital" (34), proposed a somewhat modified version of the standard model -- an attempt to integrate infant nutrition in the context of the theory of human capital.

The study showed that an infant nutrition program had characteristics which differentiated it sharply from other types of investment in human capital, i.e., formal schooling, and on-the-job training. While the latter were better substitutes for a deficit in years of schooling, they were not substitutes for a deficit in preschool IQ. The authors concluded that the most practical remedy for malnutrition would be a redistribution of income toward the infant and his family; that the cost of not undertaking such a measure might greatly increase distributional problems with a low-income, low-productivity segment of the population in the future.

Marcelo Selowsky continued to work on the relationship between infant malnutrition, IQ performance and economic productivity. Using data from Chile he attempted to compute rates of return for investment in infant nutrition (milk) programs. This work was summarized in "An Attempt to Estimate Rates of Return to Invest in Infant Nutrition Programs" (33), which was presented at the International Conference on Nutrition, National Development and Planning, at M. I. T. in October 1971.

Finally, Samuel Bowles completed a revision of his paper, "Class Power and Mass Education: A Study of Social Structure and Resource Allocation in Schooling" (1). This paper analyzed various political mechanisms by which the economic structure of a society influences educational policy

as advocated by a government. Using a political economy model, Bowles concluded that the allocation of educational resources in capitalist countries seemed inconsistent with egalitarian goals. He also presented material to show that the educational system was in fact an outgrowth of the economic organization and class structure in the eighteen societies which formed the basis for his analysis.

III. OTHER PUBLICATIONS

Several research efforts discussed in previous progress reports reached final publication during the course of the reporting period.

Walter P. Falcon and Gustav F. Papanek's joint publication, Development Policy II - The Pakistan Experience (3), was published by Harvard University Press. Two additional books published during the period included Fiscal Reform for Colombia (5), edited by Malcolm Gillis, and Studies in Development Planning (2), of which Hollis Chenery was general editor.

IV. OTHER PROJECT-RELATED ACTIVITIES

During the review period, project-related activities included several Cambridge briefings to AID personnel and one Washington seminar.

The AID Review Seminar was held on October 29th. The seminar was well attended and the discussion was very lively. During one session, Carl Gotsch presented his paper, "Distributive Impact of Agricultural Growth: Low Income Farmers and 'The System'" (7). At another meeting, Samuel Bowles gave the highlights of his paper, "Class Power and Mass

Education" (1) and suggested several possible new roles for AID and other international agencies in effecting the allocation of educational expenditures.

V. PERSONNEL

During the reporting period, 13 professionals worked all or part-time under the AID contract. (See Table 1.) The total man-month commitment was down relatively during the period, as preparations were begun for the smaller, terminal phase of the project.

Between July 1 and December 31, 1971, there were relatively few personnel changes. David Morawetz arrived in Cambridge after a one-year stay in Colombia to begin work on Andean economic integration. Millard Long spent three months as a consultant in Ghana and returned in September to begin work on financial issues affecting that country. Lance Taylor spent three months in Peru as a consultant and later became a one-semester Visiting Professor at the University of Minnesota. David Cole returned in September after a lengthy advisory stay in Indonesia, to begin work on a series of studies concerned with financial development. Richard Mallon spent three summer months in Peru as a consultant, and Daniel Schydrowsky served for two months as a summer consultant on trade policy in Indonesia.

Departures included Malcolm Gillis, who left for Indonesia to become a resident advisor with the DAS project in Djakarta; Moises Syrquin who departed to assume a teaching position in Israel; and Tsunehiko Watanabe who returned to Japan to assume a professorship at the University of Osaka.

Table 1. Senior Research Personnel

Approximate Portion of Total Time Committed to AID Research
During Academic Year 1971/72

<u>Name</u>	<u>Percentage</u>
David Cole	40
Walter Falcon	50
Lester Gordon	12
Carl Gotsch	75
Millard Long	75
Richard Mallon	25
David Morawetz	100
Gustav Papanek	10
Daniel Schydrowsky	50
Marcelo Selowsky	50
Lance Taylor	25
John Thomas	50
David Williams	50

Expected arrivals and departures during the next six months include Gustav Papanek who will depart in March 1972 to become a resident advisor with the DAS Indonesia Project; David Morawetz who will be leaving in June 1972 to assume a teaching post in Israel; and David Williams, who will leave in March to join the DAS Tanzania Project. In May 1972, Donald Snodgrass is expected to arrive in Cambridge following his advisory work in Malaysia. He will be focusing his research on problems of growth and equity in a multiracial society.

VI. BUDGET

Table 2 indicates the financial status of the project through December 31, 1971. Program expenditures continued on schedule, and as of December 31, 1971, all funds had been expended that were allocated prior to the December 20, 1971 meeting of AID's Research Advisory Committee. Hence, as of January 1, 1972, there were approximately \$300,000 remaining for the period January 1, 1972 through June 30, 1973. Expected expenditure and budget categories for this period are shown in Table 3.

VII. FUTURE PLANS

Plans for the succeeding eighteen months are discussed extensively in the November proposal to extend contract GSD-1543. (A tentative revised summary is given in Table 4.) What follows, therefore, are brief statements covering work for the period through June 30, 1972.

Table 2

Contract CSD-1543 -- Harvard University -- AID Reporting Form A.

Title of Project: Comparative Studies of Resource Allocation and
Development Policy

Summary of Expenditures for Period Ending December 31, 1971

(1) Dollar amount of contract

(a) Initial funding	\$ 577,882
(b) Amendment - Cumulative total + \$145,000	722,882
(c) Amendment - Cumulative total + \$ 25,825	748,707
(d) Amendment - Cumulative total + \$292,896	1,041,603
(e) Amendment - Cumulative total + \$228,000	1,269,603
(f) Amendment - Cumulative total + \$313,566	1,583,169 *

(2) Expenditures on the contract (accrued basis)

(a) Cumulative to December 31, 1971	\$1,583,292
(b) Quarter ending December 31, 1971 (actual)	61,191
(c) 2nd Quarter preceding (actual)	67,215
(d) 3rd Quarter preceding (actual)	42,912
(e) 4th Quarter preceding (actual)	59,829

(3) Unexpended balance at end of quarter December 31, 1971

(123)*

(4) Estimated future expenditures

(a) Quarter following this report (Jan-Mar 1972)	\$ 65,000
(b) 2nd Quarter following this report (Apr-June 1972)	60,000
(c) 3rd Quarter following this report (July-Sept 1972)	50,000
(d) 4th Quarter following this report (Oct-Dec 1972)	50,000
(e) 5th Quarter following this report (Jan-Mar 1973)	40,000
(f) 6th Quarter following this report (Apr-June 1973)	35,000

* \$300,000 of additional funds were approved for the period January 1, 1972 thru June 30, 1973 at the December meeting of RAC.

Table 3 . Revised Budget - Harvard Contract CSD-1543
(Three 6-Monthly Installments)

	Jan. 1, 1972 to June 30, 1972		July 1, 1972 to Dec. 31, 1972		Jan. 1, 1973 to June 30, 1973		TOTAL Jan. 1, 1972 to June 30, 1973	
	Man Months*	\$	Man Months*	\$	Man Months*	\$	Man Months*	\$
Harvard Salaries								
Research Staff	30	57,000	24	45,600	18	34,200	2	136,800
Research Assistants	12	7,800	9	5,850	6	3,900	7	17,550
Secretaries	12	7,500	9	5,625	6	3,750	7	16,875
Editorial and Librarian		4,500		4,500		4,500		13,500
Consultant Fees		2,500		2,000		1,000		5,500
Computer		3,000		2,500		2,000		7,500
Domestic Travel and Subsistence		700		700		500		1,900
International Travel		2,000		1,000		1,000		4,000
Other Direct Costs		<u>3,650</u>		<u>3,145</u>		<u>2,340</u>		<u>9,135</u>
Materials and Supplies		800		600		500		1,900
Telephone and Telegraph		800		600		500		1,900
Postage and Freight		400		400		300		1,100
Research Material Acquisition		200		200		100		500
Services Purchased		450		345		190		985
Duplicating and Printing		<u>1,000</u>		<u>1,000</u>		<u>750</u>		<u>2,750</u>
Subtotal		88,650		70,920		53,190		212,760
Harvard Overhead @ 41 percent		<u>36,350</u>		<u>29,080</u>		<u>21,810</u>		<u>87,240</u>
TOTAL		125,000		100,000		75,000		300,000

*Average salary per man month (including retirement and social security, and on a 12-month basis):

Research Staff:	\$1,900
Research Assistants:	\$ 650
Secretaries:	\$ 625
Editor:	\$1,250

Table 4. Summary of the Projected Research Program
Approximate Man-Month Commitments

Rural Development

(about 15 man-months)

1. John Thomas -- Comparative Study of Agricultural Organization in Java and East Pakistan.
2. Walter Falcon -- Employment Effects of Rapid Technological Change in Indonesia.
3. Carl Gotsch -- Comparative Study of mechanization in the Pakistan and Indian Punjab.

Alternative Financial Systems for Development

(about 15 man-months)

1. David Cole -- Comparison of Interest Rate Reforms in Indonesia and Korea.
2. Millard Long -- Development of Financial Markets and Institutions in Ghana and Pakistan (through June 30, 1972).

Development with Small Domestic Markets

(about 18 man-months)

1. Daniel Schydrowsky -- Export Possibilities from Fuller-Capacity Utilization in Latin America.
2. David Morawetz -- Gains and Distribution of Benefits in the Andean Group (through June 30, 1972).
3. Richard Mallon -- Balance of Payments Dynamism in Argentina, Colombia and Peru (through June 30, 1972).

Development with Small Domestic Markets - continued

4. Joseph Stern -- Trade and Industrial Rationalization in Ghana.
5. Lance Taylor -- Trade Models for Small Developing Countries.

Public Policy for Public Enterprise (about 24 man-months)

1. Lester Gordon -- The Impact of Labor Rewards and Behavior on the Performance of Public Enterprises.
2. Paul MacAvoy -- The Public Enterprise as a Part of a Larger Production System in Indonesia.
3. Dwight Brothers and David Williams -- Public Enterprise in East Africa.
4. Edward Mason -- The Impact of International Financing Institutions on the Performance of Public Enterprises.

Rural Development

In the coming months, Carl Gotsch expects to continue both his technical studies on Pakistan agriculture and the refinement of his rural systems framework. The technical study already under way involves the calculation of the benefits and costs of tractor mechanization in the Indus Basin. This is part of a comparative study being conducted in cooperation with S. S. Johl of Ludiana University in India. The methodological work will be centered on the revision and extension of an earlier paper on the problems of low-income farmers. In particular, an attempt will be made to include, within the systems framework, recent models focusing on the interaction between technology, resource endowments, and institutions that have been developed by Hayami/Ruttan and deJanvry.

John Thomas will complete work on the determinants of tubewell irrigation alternatives open to the new nation of Bangla Desh.

Going beyond the analysis of technology, Thomas will complete work on the question of the past organization and technology of water development in this area. This work will suggest that for reasons not related to economic benefits or administrative feasibility, both the government of East Pakistan and its foreign aid donors planned and organized the water development program along highly centralized lines. The alternatives open to East Bengal and the reasons for the choices made will be analyzed to determine the links between the political and administrative system and the role of foreign aid in the choice of development strategy.

Walter Falcon will be engaged with three projects during the next six months. The first will involve a collaborative effort with Peter Timmer (of Stanford University) on the political economy aspects of Asian rice trade that have occurred as a result of the green revolution. A second project will involve a month's field work in Indonesia, analyzing the rural employment situation, particularly the rural works program. A third paper, to be done collaboratively with Carl Gotsch, will attempt to provide a summary assessment of five years' work on rural West Pakistan. It will focus on a series of models which examine different aspects and eras of rapid technological change in that region.

Financial Systems for Development

In the coming six months, David Cole expects to complete the cross-sectional study of financial systems and formulate the approach to the comparative analysis of two groups of four or five countries which have had low and high rates of financial growth. He will also be working on a comparison of the Korean and Indonesian banking system. In addition, he will complete a comparative study of the inflation and stabilization experience in Asian and Latin American countries. This study will explore some cultural and social as opposed to economic, characteristics which contribute to the likelihood of inflation. Finally, he plans to review and write about the theoretical aspects of interest rate policies in developing countries.

During the next six months Millard Long will complete his paper on financial developments in Ghana. He will continue the work started in

1971 on the impact of financial institutions on savings, on the allocation of investment funds and on the distribution of income and power. In addition, he plans to do a paper indicating how the financial consistency of economic plans can be tested in a flow-of-funds framework. Plans of Ghana and Pakistan will be used as examples.

Trade and Aid in the Development of Small Countries

Daniel Schydrowsky will continue his work on the question of multiple-shift utilization of installed capacity in LDC's. He will expand his analysis on the basis of benefit-cost calculations at shadow and market prices to include tax factors and other elements such as import substitution and export policy. The integration of these various elements should provide a more comprehensive explanation than presently exists for the divergence between private incentive and social good with regard to capital utilization. He will also continue his work on the structure of incentives to economic activity in Colombia and Argentina which is expected to lead fairly shortly to a tabulation and analysis of the policies followed in those countries.

During the first part of 1972, Lance Taylor will be working on the formulation of simple, hopefully robust models for short and medium-term forecasting and planning in developing countries, particularly those with foreign exchange constraints. Taylor and William Raduchel will also start to design planning models incorporating explicitly government fiscal and monetary policy variables.

Richard Mallon will continue his analyses of balance of payments management and policy-making dynamics, drawing on his experience in Argentina, Colombia, and Peru, to explore the existence of common characteristic patterns. A part of his work will relate to the study of Public Policy for Public Enterprise, in which he will analyze the coordination of such enterprises with balance of payments policy.

During the first two months of 1972, Gustav Papanek intends to revise the summary essay for the forthcoming book on Comparative Development Strategies: China, Japan, India and Pakistan. It is expected that a full draft will be completed prior to his departure for Djakarta in early March.

David Morawetz will write several more papers on the Andean Group customs union during the next six months. These papers will include a proposal for the Andean Common External Tariff based on economic principles. He will also complete an analysis of the problem of the distribution of benefits within customs unions among less developed countries -- a problem which has led to the gradual disintegration of the East African and Central American Common Markets. Finally, Morawetz will examine possible criteria for allocating "programmed" or "integration" industries among Andean Group members, trying to reconcile the need for economic efficiency on the one hand with the need for inter-country equity on the other.

Marcelo Selowsky will analyze two related problems associated with external financing of development: first, to what extent does external financing become a substitute for domestic savings efforts, and second, what is the impact of foreign financing on the composition of investment in the recipient countries. For this purpose he will study the mechanisms by which foreign financing can have an impact on private and public domestic savings; and second, to what extent different practices of governments and international lending institutions regarding the allocation of these funds can affect the composition of total investment.

Public Policy for Public Enterprise

Lester Gordon, in addition to his administrative responsibilities for the research program, will examine several questions which bear on labor's role in public enterprises. Case materials from Peru and other countries will be examined for this purpose.

David Williams will continue his work on Tanzanian government/private joint ventures. Supplemental field work will commence in Tanzania during the coming year when Williams will become a resident advisor with the new DAS Project in Dar es Salaam.

File
CSD 1543

PROJECT STATEMENT

Date November 15, 1971

A. PROJECT SUMMARY

1. Statistical

Project Title: Comparative Studies of Resource Allocation and Development Policy

New or Extension: Extension

Contractor and Address: Center for International Affairs
Harvard University
1737 Cambridge Street
Cambridge, Massachusetts 02138

Principal Investigator: Walter P. Falcon, Project Director

Duration: 2 years 6 months from January 1, 1972 to June 30, 1974

Total Estimated Cost: \$915,849

Funding by Fiscal Years:	1972	\$167,314
	1973	\$355,494
	1974	\$393,041

Project Monitor: PFC/PDA/EA, Henry F. Lee

2. Narrative

The purpose of this extension is to focus the accumulated policy research experience of the contractor staff on five (5) critical development policy areas identified by past research and which have received little or inadequate analytical attention in development literature. These are: (1) The growing importance and problems of publically owned productive enterprises have sharply increased the need for attention to policy measures to resolve conflicts between economic efficiency and social goals, with a view to developing consistent sets of policies for the execution of other government objectives and for shaping the structure of incentives and penalties to influence enterprise performance; (2) the emphasis on import substitution in many LDCs with small domestic markets has led to cumulatively more restrictive control devices and further balance of payment difficulties and growing neglect of apparent comparative advantages, so that successive liberalizing policy packages would be needed to change severe structural distortions, (3) the "Green Revolution" or the new agricultural technology has created rural social problems -- unemployment and growing inequalities in the distribution of income and wealth -- which may only be relieved by considering alternative means of introducing new technology and the establishment of new relationships to change the traditional social and institutional framework, (4) experience now indicates the necessity to understand alternative financial systems over time to improve policies and institutions for the mobilization and allocation of scarce domestic and foreign resources over all sectors of the economy, and (5) these policy problems require conscious national development strategies of government intervention to promote sustained rapid growth, equitable distribution of income and wealth and appropriate government control to achieve balanced economic, social and political development.

The overseas research costs of this project are provided in contracts with the Ford Foundation, the United Nations and the host country governments and agencies in amounts of about \$2.5 million annually. The amounts requested from A.I.D. under the extension are equivalent to about 13 percent of total costs and would finance the research at Harvard.

Harvard would plan to sponsor two overseas research conferences over the life of the extension, would establish and maintain contacts with LDC researchers and research institutions in countries where Harvard is not already engaged and would help to increase utilization of research papers by LDC researchers and institutions.

B. EXPANDED NARRATIVE STATEMENT

1. Background and Description of the Project

a. Background

In 1967, A.I.D. agreed to finance for 2½ years (\$1,041,603) a coordinated series of studies in three areas of development economics: (1) economic aspects of several major sectors (agriculture, education and transportation), (2) comparisons of resource allocation in several important countries (India, Pakistan, Korea, Greece, Argentina and Colombia) and (3) studies of development policy, particularly as it relates to trade and aid. The structure and scope of the research proposal was recognized by both A.I.D. and Harvard as being somewhat experimental because the wide range of topics and countries generated some misgivings about the ultimate coherence of the studies. But subsequent adjustments based on experience were judged to have led to significant results as shown in the lists of papers, articles and books in the progress reports and in the contract extension proposal.

The first extension for 2 years from December 1, 1969 to November 30, 1971 (\$627,120)^{1/} was granted for a more narrowly focussed research proposal which addressed three central development issues. They were (1) the magnitude and characteristics of the rapid structural change in developing countries, (2) the principal policies that affected the transformation and (3) the resultant economic and social consequences. The overall performance under this contract covers 17 books and monographs in completed or in near final form, 62 published journal articles and more than 116 essays in mimeograph form. Titles are listed in Appendix I.

b. Description of the Project

The proposed second extension of this contract grows out of the accumulated and continuing policy research experience of Harvard in economic planning agencies of 10 or more developing countries. The proposal focuses on a set of five development policy topics which are believed to be important, relevant and interrelated. The selection of five sub-topics establishes the project base for administering, coordinating, and supervising the research effort at Harvard. The research plan requires that each senior researcher prepare a prospectus for his study specifying the problem to be addressed, the starting hypotheses, the methodology, and the likely sources of information. Harvard will provide A.I.D. with these research proposals for comment.

^{1/} Reduced to \$541,566 due to a carry over of \$85,554.

The five policy topics can be summarized as follows:

(1) Public policy for public enterprise

The empirical analysis will address the following questions: (a) What are the objectives against which performance of public enterprises is to be judged -- financial profits or social objectives, (b) What are the factors or influences which affect such performance, and (c) What policies, affecting which factors, can be expected to contribute to which objectives and with what degree of probability? Harvard plans first to do case studies of public enterprises in Indonesia, Ethiopia, Ghana, Malaysia, Tanzania, Zambia, and Peru, and secondly to initiate analytical studies using published literature, materials from past DAS projects, and the case studies.

(2) Development with small domestic markets

This topic focuses on the inter-relationship between industrialization and international trade policies, especially in small developing countries in the Andean Group. The issues are (a) a theoretical framework of how to promote movement toward the comparative advantage that countries have violated in their rush to import-substituting industrialization, (b) existing conditions and distortions from which movement toward comparative advantage is to take place, (c) definition and measurement of the marginal short and long run comparative advantage to develop policy criteria for rationalizing the industrial structure, (d) import liberalization through different sets of tariff policies that would produce long run comparative advantage results and an analysis of their static welfare costs and reallocation implications, (e) industrial rationalization through the promotion of nontraditional exports, (f) problems of under-utilization of installed capacity with respect to output growth, employment, and balance of payments implications, (g) the promise and problems of economic integration and (h) the problems of policy management for industrial growth which require some minimum coordination between different policy measures. The analysis will be a problem or country centered approach depending on the subject. Analysis of comparative advantage will be problem oriented using concepts such as domestic resource cost of foreign exchange, effective rate of protection and associated mathematical programming techniques. However, the costs of liberalization would require a specific country setting. The research will draw on experience in Latin American countries particularly Peru, Chile, Argentina, Colombia, the Andean Group, and Ghana.

(3) Organizing for agricultural development

The research will focus on the interaction over time between the characteristics of the technology and the social and institutional framework within which it is used. Previous work held constant institutions while

varying the type of technology to be introduced whereas this proposal would consider the ways in which technology and the political and social organization of rural areas are inter-related. The research plan is first to develop a conceptual framework for the comparison of rural systems. To do this four sets of data and analysis would be crucial: (a) detailed information on the characteristics of available technology to understand how the new technology would affect production practices at the farm levels, (b) size distribution of holdings and tenure arrangements, (c) comparative studies on the behavior of institutions serving the agricultural community to understand the structure of incentives that govern individual behavior, and (d) information on traditional village organizations and the conferral of status and power through means other than those involving control over property.

The second part of the research plan is to examine the interaction between the above mentioned major variables and to determine how they affect the level of output and distribution of income. These in turn could influence changes in the institutions and the distribution of services and the size distribution of holdings.

One set of studies will investigate the design of programs and projects in areas characterized by small farms and intensive rice cultivation and another in which the dwarf wheats have been introduced into arid regions. Data will be drawn from field work in East Pakistan, Indonesia, and Malaysia for rice; for wheat, the Indian and Pakistani Punjab will be compared with Tunisia.

(4) Alternative financial systems for development

The focus will be on how events in the financial markets affect the accumulation and allocation of real resources. This involves an understanding of the evolution of financial systems which can be efficient instruments for mobilizing and allocating savings. This raises questions of size, complexity and efficiency of institutions, and the relationship between policy instruments and the structure of financial systems to determine how policy makers can manage desired changes in the system.

The research plan is divided into two parts. First limited aspects of financial systems in certain countries, such as Pakistan and Ghana, with different institutions, instruments and forms of ownership and control will be examined to relate institutional patterns to the impact on domestic savings, the allocation of credit, and the implementation of stabilization and development policies. Secondly, financial systems in different countries such as Korea and Indonesia will be compared.

(5) National development strategies

This topic will be the most controversial issue in development. Broadly the studies will analyze the effects of policies of different forms and degrees of government intervention to achieve rapid growth, equitable distribution of income and wealth and appropriate national control. This will include the effect of government intervention on the economy as a whole, and the trade-offs between different objectives. These broad issues will be limited by the number of countries to be studied -- Ghana, Indonesia and Malaysia.

The issues are (a) what effect did different strategies have on the rate and sources of savings and investment, (b) who "financed" development in terms of sectors and classes, (c) what was the general experience with government enterprises, (d) what differences in strategy arose because of the changing role of foreign investment and other foreign influences, (e) what were the effects of the different strategies on employment, real wages, and the general economic situation of lower income groups, and (f) were there any striking relationships between strategies of government intervention and particular political focus.

Lists of senior research personnel and of the projects to which they will principally address their work are given in Appendices II and III.

2. Significance to A.I.D. Objectives

This research proposal is directed at increasing knowledge of sets of inter-related development policy problems which are of major importance to A.I.D. in the analysis and determination of policies for recipient developing countries. In addition, the studies will be useful to other bilateral and multilateral donors and to IDC governments in formulating policy packages which have multifaceted affects on the economy.

The studies in the first four subject areas deal with specific policies in particular sectors of developing economies. The fifth topic, National Development Strategies provides insights for general strategies to coordinate policies in all sectors.

One of the important results of this research proposal will be the country studies and comparative analyses conducted by researchers who have accumulated field experience in developing countries in which Harvard has, or will have, a direct involvement. Harvard's Development Advisory Service is now engaged in assisting planning institutions in Colombia,

Peru, Ghana, Ethiopia, Indonesia and Malaysia. Contracts have been terminated in Argentina, Pakistan, Iran, Greece and Liberia. Harvard anticipates new projects in Tanzania and Korea. These comparative country studies are not only useful for policy determination in the countries studied but will also help A.I.D. understanding and policy determination in similar developing countries.

Other significant aspects of the Harvard contract were:

(a) The distribution of research papers by Harvard by direct requests (about 125 per paper) and by A.I.D.'s Economic Support Staff, PPC, which distributed a total of about 2,000 copies of Harvard papers by specific request. These requests are not only from individuals in A.I.D. and other U.S. agencies in Washington and from Missions abroad, but also from professors and scholars in academic and research institutions and governments.

(b) The publication of the research in the form of 17 books and 62 journal articles so far. These publications make research results available to the general public and to the economics profession in the U.S. and in foreign countries. This helps to provide a common background of research against which policy discussions between A.I.D. and host countries can proceed.

(c) The attendance at conferences where research findings are explained and discussed with professionals and officials who are interested and active in the subject matter. These activities help to draw attention of development economists and other interested parties to research findings which help generate further research.

3. Relation to Existing Knowledge

The proposed research will increase knowledge of resource allocation and development policy in developing economies particularly in the five subject areas. To some extent existing knowledge in these five areas is contained in the completed studies under this contract and in ongoing research by Harvard.

In the subject area Public Policy for Public Enterprise the existing literature focuses primarily on (a) the financial performance of public enterprises and (b) the organizational and legal relationships of the government and on the quality of the management as key factors which influence performance. Examples are, "Study on the Operation of State Enterprises in Turkey," (OECD) "Statutory Corporations in Nigeria," an

inquiry of the Coker Commission, Public Enterprises and Economic Development, by Albert Hansen, a series of Indian publications on public enterprises, the Structure of Public Enterprises in India, 1961; the Finances of Public Enterprises, 1963 and the Control of Public Enterprises in India, 1963, a 1959 study of the Pakistani Ministry of Finance, Government Sponsored Corporations, and "Measures for Improving Performance of Public Enterprises in a Developing Country," United Nations. Other significant articles are "Financial Performance of Government-owned Corporations in Less Developed Countries," by Charles R. Frank, and "The Role of Public Enterprise in Turkish Economic Development" by James W. Land both from chapters in Government and Economic Development edited by Gustav Ranis. The Harvard proposal will provide more systematic treatment of the factors affecting social efficiency.

The subject area on Development in Small Domestic Markets will build on recent works on comparative advantages by Bela Balassa, Daniel Schydrowsky, Michael Bruno and Jagdish Bhagwati; on shadow pricing by Lance Taylor, Arnold Harberger and Martin Felstein and on trade policy by Bela Balassa, Peter Diamond and David Morawetz.

In the subject area of Organizing for Agricultural Development will depend heavily on earlier Harvard studies such as Walter Falcon's "The Green Revolution - Generations of Problems" and on farm management studies involving new technology such as those being done by John Mellor, Cornell University and Randolph Barker, International Rice Research Institute.

In the subject area of Alternative Financial Systems for Development Harvard will go beyond the sectional analyses of John Gurley, Raymond Goldsmith and U Tan Wai who investigated the normative characteristics of a few financial variables in a large number of countries. In addition there are individual country studies of Mexico, Korea and Taiwan which evaluated the factors influencing the development of financial systems in considerable detail but without comparative analysis. The Harvard proposal will primarily be a comparative in approach.

In the subject area of National Development Strategies, Harvard will draw heavily on the extensive advisory experience of the DAS, on work by Van Oohms in Malaysia, on a recent collection of essays by Bruce Glassburner on Indonesians and on the early works of Stephen Hymer for a volume on Ghana.

4. Relation to Other Research

The research proposal does not duplicate other or past A.I.D. research efforts though there are many complementarities. (1) In the subject area of public enterprises there is little work being done elsewhere with the exception of a few United Nations studies. Indeed, Harvard hopes to stimulate research on the social efficiency of public enterprises in the developing

countries themselves and to focus attention on the many factors which affect performance that the existing literature ignores. (2) The work on development with small domestic markets is highly complementary to, but distinct from, the earlier studies by Williams College on import substitution. The Harvard proposal focuses more on feasible policy, or what are called second best solutions, that stress existing distortions and the synchronization of entire policy packages that will be needed if countries are to break the spiralling effects of these distortions. The Williams study focused on a descriptive analysis of the policy and process of import substitution rather than on an analysis of policy approaches for getting out of the import substitution dilemma. Similarly the NBER study focuses more narrowly on liberalization of exchange restrictions and adopts a free trade solution or a first best solution as a standard of comparison.

(3) The proposed work on agricultural development will depend heavily on the continuing series of Harvard and other studies supported by A.I.D. Among these are Mellor's work on price policy and farm level technology, Dale Adams, Ohio State, on credit and small farmers and Title IX studies of farmer participation being handled by Samuel Huntington and others at Harvard. The proposal is to build on these various components for wheat and rice areas in order to understand the differences in overall effect on income distribution when different components vary by country and region.

(4) The work on alternative financial systems will represent a new research area for A.I.D.

(5) The studies in national development strategies complement the Yale country studies which were supported earlier by A.I.D. Indonesia, for example, was not included in the Yale series. The work of Van Oohms at Yale and of Snodgrass at Harvard on Malaysia focus on different aspects. Snodgrass will stress issues affecting income distribution among different ethnic groups since 1969. Other country studies in the proposal will be used to answer more limited questions on finance, agriculture and industry.

5. Proposed Work Plan

a. Scope of Work

There are two parts. The first and largest part is the research costs of the five subject areas which only includes funding activities at Harvard and excludes overseas costs provided by other Harvard contractors. All of the work will be performed at Harvard by researchers who will have returned from overseas assignments or investigations and by those of the permanent staff or faculty who have relevant professional research experience.

The second part includes the distribution and utilization of research findings. Harvard plans to sponsor two overseas conferences with the objective of inviting LDC researchers and other interested parties. Harvard also plans to explore the possibility of contacting LDC researchers and research institutions to determine what Harvard could do to improve their research capability and to train researchers in countries where Harvard is not now engaged.

b. Program of Work

A summary of the initial work plan by the five subject areas, by author and title of initial study is provided in Appendix III. The following sections describe initial activities by subject area, researcher, and tentative working titles.

(1) Public Policy for Public Enterprise

(a) Lester E. Gordon, Director of the Development Advisory Service, "The Impact of Labor Rewards and Behavior on the Performance of Public Enterprises," plans to examine several questions which bear on labor's role in public enterprises. From a policy standpoint, three related questions seem to bear examination.

The first is the extent and ways the labor force benefits from public ownership. A variety of firms in different fields of production and in different countries will be examined to establish any differentials that might exist with the private sector in terms of wage rates, fringe benefits, employment levels, bargaining power of the labor force and participation in profits and management. To the extent that the differentials exist, an attempt will be made to explain their causes.

This question bears examination in and of itself because of the widespread belief in the work force of many poor countries that public ownership offers greater rewards for workers. It is also a necessary antecedent

to dealing with the question of how labor behavior in a public enterprise affects a firm's social efficiency. In this connection, labor productivity will be measured for all of the firms examined above, related to social efficiency calculations, explained in terms of probable causes, and compared with comparable private enterprises. Because high labor costs can reduce profits and push up output prices of oligopolistic firms, total nominal and real wage bills will also be examined and related to social efficiency calculations.

While much of the foregoing will illuminate the effect of public ownership on labor incentives, the impact on incentives of programs for the participation of labor in profits and management bears independent examination. Case materials from Peru and other countries will be examined for this purpose and the effect of such programs on labor's rewards and a firm's social efficiency will be assessed.

(b) Paul MacAvoy, Professor in the Sloan School of Management at M.I.T. and continuing consultant to the Indonesia project of the DAS, "The Public Enterprise as Part of a Larger Production System in Indonesia," plans to test a number of pricing, investment, taxation and control hypotheses. The analysis will take place within a framework of models with multiple goals which extend beyond the individual firm. While the empirical testing will initially be in terms of cement and fertilizer production in Indonesia, it will later be extended to other countries and industries.

The simple but testable models he plans to construct will be based on goals of profits, income redistribution, sectoral economic development and votes for the government. These models will explicitly produce descriptions of pricing, production, investment and marketing performance.

The models will be developed not only at the firm and industry level, but also at the "sectoral equilibrium" level. This will include explicitly the interrelationships between public production of raw materials -- such as fertilizer or cement -- and production or the rate of growth of production of final investment and consumption goods using these raw materials. These interrelationships will be included to account for the important goals of sectoral and economy-wide growth that can be achieved only as a result of pricing decisions in the public enterprise in the raw materials industry.

(c) David Williams, "The Effect of Foreign Participation and Product Type on the Performance of Public Enterprises," plans to examine three hypotheses based on his work with public enterprises in Ghana, Zambia and Tanzania. While in Ghana he was able to observe and collect materials on more than twenty public sector enterprises. He conducted an intensive investigation of the Agricultural Marketing Board in Zambia.

He will soon be working in Tanzania on the problems of more than thirty companies engaged in manufacturing and mining.

He plans to ask the following questions and test the following hypotheses:

(i) What is the relation between performance, as measured by different criteria, and the level and type of foreign participation in an enterprise? He tentatively hypothesizes that performance in terms of social efficiency will be better, the greater the degree of control by the minority partner, and worse in terms of other criteria.

(ii) What is the relation between performance and product type? He hypothesizes that the marketing characteristics of a product are a major determinant of its export potential and thus a major determinant of performance for export-oriented enterprises.

(iii) What is the relation between financial and social profitability? Where the prime requirement is for commercial profitability and where private foreign investors are heavily involved, he hypothesizes that social benefits actually realized will be closely correlated with financial profitability.

(d) Edward S. Mason, Lamont University Professor (Emeritus), "The Impact of International Financing Institutions on the Performance of Public Enterprises," plans to examine the impact of international financing institutions on the performance of the public enterprises which they finance. In addition to assessing the actual performance of enterprises he will analyze the various techniques of influence employed by and available to the institutions and will assess their limitations and advantages. Among these methods of influence are the power to veto management appointments, the discipline of loan repayments, the insistence on management contracts and the requirement that tariffs, taxes, or other macro-economic measures be altered with respect to the firm financed.

Initially, Professor Mason will use extensive World Bank materials to which he has access. Subsequently, he may conduct investigations in the developing countries themselves, enlisting local collaborators wherever feasible.

(2) Development with Small Domestic Markets

(a) Daniel M. Schydrowsky, Assistant Professor of Economics with extensive Latin American experience, "Export Possibilities from Fuller Capacity Utilization in Latin America," will continue his work on the exports side of the balance of payments problem. He will attempt to develop estimates of the potential output, employment and growth which

can be obtained in Latin American economies through the full use of installed capital. Assuming industrial capital is only used on the average of a one-shift basis, he expects to find substantial increases in output, employment and growth are possible through two and three-shift utilization of capital. Together with Marcelo Selowsky, he will attempt to define more precisely the meaning of comparative advantage in the short and long run under conditions of substantial under-utilization of installed capacity. Their study will focus on the tradeoff between dynamic efficiency and static utilization in order to give operational meaning to the concept of marginal comparative advantage.

(b) Marcelo Selowsky, Assistant Professor of Economics, together with Lance Taylor, in "Implications of Trade Liberalization in Chile," will attempt to analyze and assess the implications of trade liberalization in Chile using a disaggregated static model to evaluate the effects on resource allocation of selected packages of tariff reduction.

(c) David Morawetz, recently returned from Colombia, in a study tentatively titled "Gains and Distribution of Benefits in the Andean Group," will continue his work on integration in the Andean area, attempting to draw together conclusions on the gains from integration to the group as a whole as well as its distribution. With Daniel Schydrowsky, he will analyze the alternatives of economic integration versus worldwide export expansion in order to assess the complementarity or competitiveness of these two policies.

(d) Richard Mallon, in "Balance of Payments Dynamism in Argentina, Colombia and Peru," will continue his analyses of balance of payments management and the policy-making dynamics, drawing on his experience in Argentina, Colombia, and Peru, to explore the existence of common characteristic patterns. A part of his work will relate to the study of Public Policy for Public Enterprise, in which he will analyze the coordination of such enterprises with balance of payments policy.

(e) Joseph Stern, DAS team leader in Ghana, will analyze that country's several attempts to handle its balance of payments difficulties through the imposition of surcharges and bonuses in a volume on "Trade and Industrial Rationalization in Ghana." Stern will also develop a series of industrial cases employing marginal cost-benefit techniques.

(3) Organizing for Agricultural Development

(a) Rice Growing Areas

(i) John Thomas, economics and political science, will produce a Comparative Study of Agricultural Organization in Java and East Pakistan,

(ii) Walter Falcon, economics, will write an "Employment Effects of"

Rapid Technological Change in Indonesia." He and Peter Bertocci, economic anthropology, have had extended experience in the Comilla project of East Pakistan. This group, with the consulting advice of Akhter Hamid Khan (former director of the Comilla project), will (1) re-examine the lessons learned from the Comilla-East Pakistan experiment in the light of the general model presented earlier, and (2) gather information and analyze the BIMAS program in Indonesia and the rice intensification program in Malaysia. They will be joined in this effort by Dick Franke (economic anthropology) who has recently completed two years of field research in Indonesian. In a second phase of the study, the group will seek generalizations regarding the design of successful development projects in communities where intensive rice cultivation forms the cornerstone of the rural economy.

(b) Wheat Growing Areas

(i) Carl Gotsch, economics, is currently completing "Comparative Study of Mechanization in the Pakistan and Indian Punjab," a study of rural development policies in West Pakistan and proposes to begin the comparative work by collaborating with S. S. Johl (economics) of Ludhiana University, India, on a study of the two parts of the Former State of Punjab. It is their hypothesis that despite the obvious similarity between the two regions, the difference in the absolute size and the relative distribution of holdings is producing a different pattern of rural development in East and West Punjab. They will be aided in their study, through a consulting arrangement with Hamza Alavi (social anthropology) who has recently produced a major study on village life in the Central Punjab of West Pakistan.

(ii) John Simmons, economics, proposes a study on "Organizing for Rapid Technological Change in Tunisia." For comparative purposes, this project has the virtue of having a number of technical problems involving irrigated agriculture that are similar to those encountered in the Punjab. At the same time, solutions are being sought within a significantly different organizational structure, one that is still undergoing considerable modification. Also involved on a consulting basis will be Abdel Kadar Zghal (rural sociology, University of Tunis) who has done a number of village studies, several of which contain elements that parallel the work by Alavi on political life in the rural Punjab.

(4) Alternative Financial Systems for Development

(a) David Cole, formerly an adviser with A.I.D. in Korea and the DAS in Indonesia, in "Comparison of Interest Rate Reforms in Indonesia and Korea," will analyze the recent experience in these countries which have demonstrated that a combination of reduced inflation, increased interest rates and governmental support can bring about a rapid expansion in the size of the financial system. He will subsequently compare the

experience of these and other countries that have experienced high financial growth with a group of countries that have had low or negative financial growth rates to see if there are consistent differences between the policies in the two groups.

(b) Millard Long served with the DAS in Pakistan and Ghana. His study "Development of Financial Markets and Institutions in Ghana and Pakistan," will examine the effect of introducing new financial institutions and new financial instruments on savings and resource allocation. He will also explore the implementation of monetary policy in developing economies subject to the unpredictable fluctuations in foreign aid, agricultural output, and the price of foreign exchange.

(5) National Development Strategies

(a) Anthony Killick, long-term DAS adviser in Ghana, "Ghanian Development Strategy in Three Eras," will be responsible for the Ghana strategy study. During the last two years in Accra, Killick has been amassing basic materials for such a volume, tentatively titled, "Development Economics in Action."

(b) Donald Snodgrass, long-term Malaysian adviser, "Growth and Distribution in Malaysia with Special Reference to Ethnic Differences in Income Distribution," has also been at work the last eighteen months in collecting specific materials for an analysis of that country's development strategy. He will be specifically addressing the question of the role of growth in redressing income-distribution problems, and the role of the state in enterprises specifically designed to assist disadvantaged groups.

(c) William Hollinger and Gustav Papanek, permanent members of the DAS staff, "Growth, Distribution and Control in Indonesia," will undertake, towards the end of the contract period, an assessment of the Indonesian development strategy. Both men were involved with the country during the earlier Sukarno period as well as in recent years. Given the drastic changes in policy, this case study ought to be particularly revealing.

Towards the end of the contract period it may also be possible and desirable to begin similar studies on Peru and Tanzania. Field projects have just begun in these countries which, given the changes in development strategy, ought to make them good potential candidates for inclusion in the contract.

6. Research Methodology

The research methodology of the five subject areas varies widely. However, there are some common features. They are (a) analytical

descriptions of institutions and institutional structure and practices, (b) analysis of relevant social and political factors that influence economic behavior at the micro and macro levels, (c) emphasis on development policy or policy packages to meet a complex of problems, (d) focus on country studies and comparative studies, and (e) data collection and foreign research that has been completed before funding under this contract.

In the first part on public policy for public enterprise the research plan is divided into two parts. The first is a series of case studies of public enterprises in at least five to ten countries. The proposal contains a two-page outline for each of the case studies of specific enterprises. The total number of firms are not mentioned but Harvard has two advisers in Indonesia who have been analyzing 90 enterprises. The second part consists of analytical studies by the senior research personnel listed in Appendix III. The methodology includes examination of published literature, materials from past DAS projects at the Economic Development Library, the case studies and other sources such as World Bank studies made available for E. Mason's study.

In the second subject area, development in small domestic markets, the research methodology includes a theoretical framework which allows analysis of effects of policy changes over time. This requires understanding of existing conditions in particular countries of specific sectors or problems. Schydrowsky will develop estimates of output, employment, and growth at different levels of capacity utilization. This will involve substantial statistical and computational services. Sclosky and Taylor plan to use an econometric model to evaluate by simulation the effects on resource allocation of selected packages of tariff reduction. Morawetz, Mallon and Stern already have collected materials for their analytical work.

In the third subject area, in organizing for agricultural development the methodology is to develop a theoretical model of the dynamics of rural systems. To test this, the researchers hope to use previously collected data, new data and their accumulated experience and understanding of specific rural systems in several countries.

In the fourth subject area, alternative financial systems for development, the methodology involves comparison of financial institutions, institutional practices, monetary and other policies in at least four countries that affect the evolution of financial institutions. This requires first an investigation of limited aspects of the financial system over time in certain countries and second a comparison of overall financial systems between two types of countries, those with slow growing financial sectors with those that have been more rapid.

In the fifth subject area, national development strategies, the

methodology will primarily be descriptive and will depend heavily upon data collected and analysis performed under existing overseas contracts and the accumulated experience of the researchers.

7. Researcher Competence

The 26 senior research personnel of the Harvard group represent an unusually well qualified team of professional development scholars with extensive overseas research experience in developing countries. They have published extensively on development problems and policies. Through the activities of the Development Advisory Service which provides advisers to LDC planning agencies, Harvard has established close ties with LDC officials, scholars and research institutions. In addition Harvard has been engaged in training LDC researchers and providing assistance to LDC research institutions. A.I.D. interest in assisting the expansion of these activities is welcomed especially those countries where Harvard has not already established contact. Biographical data sheets of the 26 senior researchers are attached as Appendix IV.

8. Contribution to Institution Building

The Development Advisory Service of the Center for International Affairs at Harvard University is a unique research institution which has managed to combine academic and policy research with field experience as consultants to planning organizations and other agencies of the governments of developing countries. As a result, Harvard has, and continues to maintain, close contacts with LDC policy researchers and government officials who are the policy makers in their respective countries. These contacts also result in the training of LDC researchers and provides opportunities to offer appropriate employment for LDC students returning from abroad is to establish contacts necessary to develop and maintain the research capability of LDC researchers and research institutions.

This policy has limited Harvard to work in 10 selected countries. The contract will not overtax Harvard's continuing program but will provide additional resources to permit an expansion of the program without diluting the quality and independence of the DAS.

9. Utilization Plans

The contract calls for a limited number of copies in draft form of each research paper and 30 copies in mimeographed form with abstracts for A.I.D. distribution. Semi-annual seminars on research findings would be held in A.I.D., Washington, to permit attendance of A.I.D. personnel and other interested persons from other agencies or non-U.S. Government persons. Semi-annual progress reports will be submitted for distribution and discussion.

In addition, Harvard agreed to consult with A.I.D. at the beginning

of each study and to provide continuing consultations on the direction and findings as the research proceeds.

Harvard also will distribute copies of the research papers to its own mailing list and upon request. Books and journal articles are also listed in a bibliography published periodically by Harvard and distributed in the U.S. and overseas.

10. Budget Analysis

The total cost estimate for the five research topics over the two and a half year life of the contract is \$915,849 with the following composition. (See Appendix V - proposed budget.)

<u>Subject Area</u>	<u>Senior Man-Months</u>	<u>Percent</u>	<u>Cost Estimate</u>
1. Public Policy for Public Enterprises	40	23	\$210,645
2. Alternative Financial Systems	25	14	128,219
3. Development with Small Domestic Markets	40	23	210,645
4. Organizing for Agricultural Development	35	20	183,170
5. National Development Strategies	<u>35</u>	<u>20</u>	<u>183,170</u>
Total	175	100	\$915,849

The senior man-months are the estimated man-months to be provided by the 26 senior research personnel in residence at Harvard. Each senior man-month includes besides actual projected salaries and fringe benefits, associated services of 1/2 man-month research assistance, 1/2 man-month secretarial service and other services such as for computations, supplies and other direct miscellaneous expenses including distribution and reproduction costs.

The cost estimates by research area include the above costs as well as consulting fees and domestic and international travel. In addition, the estimated costs of two overseas conferences are included.

11. Internal and External Reviews

The initial Harvard proposal to extend contract csd-1543 was received July 20, 1971. The project monitor and G. Lehmann reviewed the proposal and on July 26, 1971 met with L. Jonnes to review the issues. It was decided to proceed with an internal A.I.D. review on August 13, 1971.

Oral comments from representatives of A.I.D. bureaus were noted.

On September 27, 1971 a meeting was held with representatives of Harvard - I. Gordon, Director, Development Advisory Service, W. Falcon, Project Director, D. Cole and D. Schydrowsky and PPC - E. Stern, L. Jonnes, R. Muscat, G. Brown, E. Fei, E. Cohn and H. Lee. The result of this meeting was that Harvard would revise the proposal in accordance with the issues discussed.

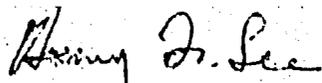
The major issues were: (a) revisions of the five research topics, (b) participation of LDC researchers and assistance to research institutions, (c) the sponsorship of two research conferences convenient for LDC officials and researchers, and (d) A.I.D. consultations on each research outline.

The internal reviews were critical of the descriptions and the allocation of time for the five research areas but all agreed that these subjects were important policy topics of interest to A.I.D. and urged Harvard to be more precise in the presentation of subjects knowing that all areas on each subject could not be covered by the manpower and time contemplated under the contract.

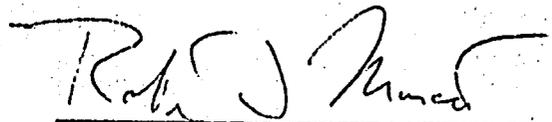
12. Proposing Office General Evaluation

The revised proposal to extend this contract addresses five policy areas which are important to A.I.D., to other donors and to LDC governments. While the research contemplated under this contract will not exhaust knowledge in these areas, the research would begin to focus attention in these critical policy areas. The contractors have been as specific as possible about research that will extend over a two and a half year period. They are very specific about the initial efforts in terms of senior research personnel and particular topics some of which are already underway.

The management at Harvard has provided written assurances of their continuing responsiveness to A.I.D. requests and guidance. A.I.D. will be able to monitor research proposals in the beginning by commenting on each research prospectus submitted to Harvard. In addition, Harvard agreed to require researchers to consult with appropriate A.I.D. personnel when that might be required to assure research relevance to A.I.D. needs.



Signature of Monitor
Henry F. Lee



Signature of Office Director
Robert J. Muscat

APPENDIX 1

List of Actual Product of the Research for Contract CSD 1543, Comparative Studies of Resource Allocation and Development Policy, Harvard University

Books, Monographs, Manuscripts

1. Richard M. Bird, Taxation and Development: Lessons from Colombian Experience. Cambridge: Harvard University Press, 1969.
2. Samuel Bowles, Planning Educational Systems for Economic Growth. Cambridge: Harvard University Press, 1969.
3. Dorris D. Brown, Agricultural Development in India's Districts. Cambridge: Harvard University Press, 1971.
4. Hollis B. Chenery, The Developing Economy. New York: John Wiley & Sons, Inc. (forthcoming).
5. Hollis B. Chenery, et al., Studies in Development Planning. Cambridge: Harvard University Press, 1971.
6. David C. Cole and Princeton N. Lyman, Korean Development, The Interplay of Politics and Economics. Cambridge: Harvard University Press, 1971.
7. Walter P. Falcon and Gustav F. Papanek (eds.), Development Policy II - The Pakistan Experience. Cambridge: Harvard University Press (forthcoming).

8. S. Malcolm Gillis (ed.), Fiscal Reform for Colombia: The Final Report and Staff Papers of the Colombian Commission for Tax Reform.
Cambridge: Harvard University International Tax Program, 1971.
9. Arthur MacEwan, Development Alternatives in Pakistan: Multisectoral and Regional Analysis of Planning Problems. Cambridge: Harvard University Press, 1971.
10. Angus Maddison, Traditional Society, Colonialism, and Class Structure in India and Pakistan. (forthcoming).
11. Jesse Markham and Gustav F. Papanek (eds.), Industrial Organization and Economic Development - Essays in Honor of Edward S. Mason.
Cambridge: Houghton Mifflin Press, 1970.
12. Gustav F. Papanek, Pakistan's Development: Social Goals and Private Incentives. Cambridge: Harvard University Press, 1967; also published as a paperback: Karachi: Oxford, 1968.
13. Gustav F. Papanek (ed.), Development Policy - Theory and Practice.
Cambridge: Harvard University Press, 1968.
14. Gustav F. Papanek (ed.), Comparative Growth and Development Strategies: China, Japan, India and Pakistan (forthcoming).
15. Gustav F. Papanek, Daniel M. Schydrowsky and Joseph J. Stern, Decision-Making for Economic Development. Boston: Houghton-Mifflin, January 1971.

16. Robert C. Repetto, Time in Indian Development Programs. Cambridge:
Harvard University Press, 1971.
17. Joseph J. Stern and Walter P. Falcon, Growth and Development in
Pakistan: 1955-1969. Occasional Paper No. 23, Harvard University
Center for International Affairs, 1970.

Published Articles

1. Jaleel Ahmad, "Import Substitution and Structural Change in Indian Manufacturing Industry, 1950-66," The Journal of Development Studies, Vol. 4, April 1968.
2. Bela Balassa and Daniel M. Schydrowsky, "Effective Tariffs, Domestic Cost of Foreign Exchange, and the Equilibrium Exchange Rate," Journal of Political Economy, Vol. 76, May/June 1968.
3. Richard M. Bird, "Sales Taxation and Development Planning - Colombia," in Gustav F. Papanek (ed.), Development Policy - Theory and Practice. Cambridge: Harvard University Press, 1968.
4. Richard M. Bird, "Stamp Tax Reform in Colombia," Bulletin for International Fiscal Documentation, Vol. 21, June 1967.
5. Richard M. Bird and Oliver Oldman, "Tax Research and Tax Reform in Latin America - A Survey and Commentary," Latin American Research Review, Vol. 3, Summer 1968.
6. Richard M. Bird and William G. Rhoads, "The Valorization Tax in Colombia, An Example for Other Developing Countries," in Arthur P. Becker (ed.), Land and Building Taxes: Their Effect on Economic Development. Madison: University of Wisconsin, 1969.
7. Samuel S. Bowles, "Aggregation of Labor Inputs in the Economics of Growth and Planning: Experiments with a Two-Level CES Function," Journal of Political Economy, Vol. 78, January/February 1970.

8. Samuel S. Bowles, "The Efficient Allocation of Resources in Education," Quarterly Journal of Economics, Vol. 81, May 1967.
9. Samuel S. Bowles, "Towards an Educational Production Function," in W. Lee Hansen (ed.), Education, Income and Human Capital, National Bureau of Economic Research, 1970.
10. Willem C.F. Bussink, "A Complete Set of Consumption Coefficients for West Pakistan," Pakistan Development Review, Vol. X, Summer 1970.
11. Hollis B. Chenery, "The Effectiveness of Foreign Assistance," in J. Adler (ed.), Capital Movements and Economic Development. New York: St. Martin's Press, 1967.
12. Hollis B. Chenery and Peter Eckstein, "Development Alternatives for Latin America," Journal of Political Economy, Vol. 78, Supplement to July/August 1970.
13. Hollis B. Chenery and Alan M. Strout, "Foreign Assistance and Economic Development," American Economic Review, Vol. 56, September 1966.
14. Hollis B. Chenery and Lance Taylor, "Development Patterns: Among Countries and Over Time," Review of Economics and Statistics, Vol. 50, November 1968.
15. Hollis B. Chenery and Larry Westphal, "Economies of Scale and Investment Over Time," in Economie Publique (Proceedings of the 1966 International Economic Association Conference, Biarritz, France), 1968.
16. Walter P. Falcon, "The Green Revolution: Generations of Problems," American Journal of Agricultural Economics, Vol. 52, December 1970.
17. Walter P. Falcon, "Agricultural and Industrial Interrelationships in West Pakistan," Journal of Farm Economics, Vol. 49, December 1967.

18. Walter P. Falcon and Carl H. Gotsch, "Agricultural Policy and Performance in the Punjab: A Comparative Study of India and Pakistan," Asian Review, Vol. 1, July 1968.
19. Walter P. Falcon and Carl H. Gotsch, "Lessons in Agricultural Development - Pakistan," in Papanek (ed.), Development Policy - Theory and Practice.
20. Walter P. Falcon and Carl H. Gotsch, "Relative Price Response, Economic Efficiency and Technological Change: A Study of Punjab Agriculture," in Walter P. Falcon and Gustav F. Papanek (eds.), Development Policy II - The Pakistan Experience. Cambridge: Harvard University Press (forthcoming).
21. S. Malcolm Gillis, "The National Sales Tax and Other Indirect Taxes in Colombia," in S. Malcolm Gillis (ed.), Fiscal Reform for Colombia: The Final Report and Staff Papers of the Colombian Commission for Tax Reform. Cambridge: Harvard University Press (forthcoming).
22. S. Malcolm Gillis, "Objectives and Means of Indirect Tax Reform," in Gillis (ed.), Fiscal Reform for Colombia.
23. S. Malcolm Gillis, "Reform of Municipal Indirect Taxes, Service Taxes and Stamp Duties," in Gillis (ed.), Fiscal Reform for Colombia.
24. S. Malcolm Gillis and Charles McClure, "Coordination of Tariffs and Internal Indirect Taxes," in Gillis (ed.), Fiscal Reform for Colombia.
25. Carl H. Gotsch, "A Programming Approach to Some Agriculture Policy Problems in West Pakistan," in Hollis B. Chenery (ed.), Studies in Development Planning. Cambridge: Harvard University Press (forthcoming); and Pakistan Development Review, Vol. VIII, Summer 1968.

26. Carl H. Gotsch, "Regional Agricultural Growth: The Case of West Pakistan," Asian Survey, Vol. 8, March 1968.
27. Carl H. Gotsch and C. Peter Timmer, "A Consistent Estimate of the Value of Animal Products in West Pakistan," Pakistan Development Review, Vol. 7, Winter 1967.
28. Stephen E. Guisinger, "Negative Value Added and the Theory of Effective Protection," Quarterly Journal of Economics, Vol. 83, August 1969.
29. David A. Kendrick and Lance Taylor, "A Dynamic Nonlinear Planning Model for Korea," in Irma Adelman (ed.), Practical Approaches to Development Planning: Korea's Second Five-Year Plan. Baltimore: Johns Hopkins Press, 1969.
30. David A. Kendrick and Lance Taylor, "Numerical Methods and Nonlinear Optimizing Models for Economic Planning," in Chenery (ed.), Studies in Development Planning.
31. David Kendrick and Lance Taylor, "Numerical Solution of Nonlinear Planning Models," Econometrica, Vol. 38, May 1970.
32. Stephen R. Lewis, Jr. and Stephen E. Guisinger, "Measuring Protection in a Developing Country: The Case of Pakistan," Journal of Political Economy, Vol. 76, November/December 1968.
33. Arthur MacEwan, "Problems in Intersectoral and Interregional Allocation: The Case of Pakistan," in Chenery (ed.), Studies in Development Planning; and Pakistan Development Review, Vol. 9, Winter 1969.

44. Richard D. Mallon, "Exchange Policy: Argentina," in Papanek (ed.), Development Policy - Theory and Practice.
35. Richard D. Mallon, "Planning in Crisis," The Journal of Political Economy, Vol. 78, July/August 1970, Part II.
36. Gustav F. Papanek, "Changes in Aid Strategy: A Note to Some Less-Developed Countries and Their Friends," in Colin Legum (ed.), The First U.N. Development Decade and Its Lessons for the 1970's. New York: Praeger, 1970.
37. Gustav F. Papanek, "Development Planners, Ethics and Objectives," Bulletin, University of Sussex, January 1971.
38. Gustav F. Papanek, "Economic Survey (Pakistan)," The Far East and Australasia, 1969 and 1970, Europa Publication Ltd., 1969 and 1970.
39. Gustav F. Papanek, "The Economist as Policy Adviser," Development Digest, Vol. VIII, April 1970; also in International Development Review, Vol. II, March 1969.
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41. Gustav F. Papanek, "The Industrial Entrepreneurs - Education, Occupational Background, and Finance," in Falcon and Papanek (eds.), Development Policy II - The Pakistan Experience.
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43. William Raduchel and Hollis B. Chenery, "Substitution in Planning Models," in Chenery (ed.), Studies in Development Planning.

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47. Daniel M. Schydrowsky, "Short-Run Policy in Semi-Industrialized Economies," Economic Development and Cultural Change, Vol. 19, April 1971.
48. Daniel M. Schydrowsky, Bela Balassa and Stephen Guisinger, "The Effective Rate of Protection and the Question of Labor Protection in the U.S.: A Comment," Journal of Political Economy, Vol. 78, September/October 1970.
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59. Richard Weisskopf, "Demand Elasticities for a Developing Economy: An International Comparison of Consumption Patterns," in Chenery (ed.), Studies in Development Planning.
60. Thomas E. Weisskopf, "Alternative Patterns of Import Substitution in India," in Chenery (ed.), Studies in Development Planning.
61. Thomas E. Weisskopf, "Underdevelopment, Capitalistic Growth and the Future of the Poor Countries," in J. N. Bhagwati (ed.), Economics and World Order. New York: Macmillan, 1971 (forthcoming).
62. Larry E. Westphal, "Multi-Sectoral Project Analysis Employing Mixed Integer Programming," in Irma Adelman (ed.), Practical Approaches to Development Planning: Korea's Second Five-Year Plan. Baltimore: Johns Hopkins Press, 1969.

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1. Jaleel Ahmad, "Recent Patterns of Growth in the Indian Economy,"
Economic Development Report No. 55, Center for International Affairs,
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2. Samuel S. Bowles, "Class Power and Mass Education: The Beginnings of
a Study of Social Structure and Educational Policy," mimeo, draft,
April 1970.
3. Samuel S. Bowles, "The Long-Run Demand for Educated Labor," Economic
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University, February 1968.
4. Samuel S. Bowles, "Obsolescence, Deterioration and Learning: The Effect
of Age on the Supply of Human Capital," mimeo, September 1967.
5. Samuel S. Bowles, "Sources of Growth in the Greek Economy, 1951-1961,"
Economic Development Report 27, Center for International Affairs,
Harvard University, November 1966 (revised April 1967).
6. Dwight Brothers, "International Transmission of Technology by Means
of Private Investment," abstract of speech given to American Associa-
tion for the Advancement of Science, Symposium on Science, Technology
and Latin American Development, December 1968.
7. Dwight Brothers, "Mexican Policy Toward Foreign Investment," presented
at the Development Advisory Service Conference, Dubrovnik, June 1970.

8. Dorris D. Brown, "The Intensive Agricultural Districts Programme and Agricultural Development in Punjab, India," Economic Development Report 79, Center for International Affairs, Harvard University, September 1967.
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11. Willem C.F. Bussink, "An Estimate of the Price Elasticity of Demand for Wheat in West Pakistan and Some Implications for Policy," mimeo, May 1969.
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18. Hollis B. Chenery, Hazel Elkington, and Christopher Sims, "A Uniform Analysis of Development Patterns," Economic Development Report 148, Center for International Affairs, Harvard University, July 1970.
19. Hollis B. Chenery and William Ginsberg, "Simulating the Process of Industrialization," Economic Development Report No. 147, Center for International Affairs, Harvard University, December 1969.
20. David C. Cole, "Inflation, Stabilization and Growth in Korea," mimeo, 1968.
21. David C. Cole, "On the Utility of Inter-Industry Projection Models," mimeo, draft, July 1967.
22. David C. Cole and Young Woo Nam, "The Pattern and Significance of Economic Planning in Korea," Economic Development Report 106, Center for International Affairs, Harvard University, August 1968.
23. C.R.S. Dougherty, "Estimates of Labour Aggregation Functions," Economic Development Report 190, Center for International Affairs, Harvard University, March 1971.

24. C.R.S. Dougherty, "Substitution and the Structure of the Labour Force," Economic Development Report 189, Center for International Affairs, Harvard University, March 1971.
25. Hazel Elkington, Statistical Appendix to "A Uniform Analysis of Development Patterns," Economic Development Report No. 158, Center for International Affairs, Harvard University, June 1970.
26. David Felix, "Gapsmanship and the Prospects for the Less Developed Countries," mimeo, April 1968.
27. David Felix, "Subsidies, Recessions and Non-Traditional Industrial Exporting in Argentina," Economic Development Report No. 107, Center for International Affairs, Harvard University, September 1968.
28. Carl H. Gotsch, "Agricultural Price Policy in West Pakistan: Some Observations on the Green Revolution," mimeo, draft, March 1971.
29. Carl H. Gotsch, "Economic Growth, Structural Change and Trade between Developed and Less Developed Countries," mimeo, draft, May 1970.
30. Carl H. Gotsch, "Optimal Investment in Farm-to-Market Road Systems," mimeo, draft, December 1970.
31. Carl H. Gotsch, "Rural Development in East Pakistan: Some Thoughts on Priorities," revised draft, March 12, 1971, mimeo.
32. Stephen Guisinger, "The Characteristics of Protected Industries in Pakistan," prepared for the GATT Conference on Effective Protection, Geneva, December 1970, mimeo.
33. Stephen Guisinger, Effective Protection, Resource Allocation and the Characteristics of Protected Industries: A Case Study of Pakistan, 1963/64, Harvard University Department of Economics, unpublished Ph.D. thesis, 1970.

Stephen Guisinger and Daniel M. Schydrowsky, "The Empirical Relationship Between Nominal and Effective Rates of Protection," prepared for the GATT Conference on Effective Protection, Geneva, mimeo, December 1970.

35. Leslie E. Grayson, "The Role of Suppliers' Credits in the Industrialization of Ghana, Nigeria, and Sierra Leone," presented at the Thirteenth Annual Meeting of the African Studies Association, Boston, September 1970.
36. Leslie E. Grayson and Peter E. de Janosi, "Patterns of Energy Consumption and Economic Growth and Structure," Economic Development Report No. 151, Center for International Affairs, Harvard University, February 1970.
37. Clell G. Harral, "The Social Costs of Highway Transport and the Coordination of Transport Development in Eastern India," mimeo, 1969.
38. J. Tomas Hexner, "EPIDC, A Conglomerate in Pakistan - The Spin-Off Process," Economic Development Report No. 140, Center for International Affairs, Harvard University, August 1969.
39. J. Tomas Hexner, "The Paradox of the Quasi-Governmental Corporation in East Pakistan," mimeo, June 1970.
40. J. Tomas Hexner, "Some Insights into the Economic Development of East Pakistan from the Short Perspective of 1964 to 1968 and a Possible Course for the future," presented at the Sixth Annual Conference on Bengal at Oakland University, Rochester, Michigan, May 8, 1970.
41. Oscar Donald Hoerr, "The Economic Demand for Education in Malaysia," mimeo, September 1969.

42. Oscar Donald Hoerr, "Education, Income and Equity in Malaysia," Economic Development Report No. 176, Center for International Affairs, Harvard University, June 1970.
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APPENDIX II

Senior Research Personnel

<u>Name</u>	<u>Position</u>	<u>Approximate Portion of Time to Be Spent on AID Research Contract*</u>
Walter P. Falcon Project Director	Deputy Director, Development Advisory Service Lecturer in Economics	40%
(Hollis B. Chenery)	Professor of Economics, Currently Economic Adviser to the President, International Bank for Reconstruction and Development	25%
David C. Cole	Research Associate, Center for International Affairs Lecturer in Economics	40%
(Malcolm Gillis)	Advisor, currently with the DAS Project, Indonesia Research Associate, Center for International Affairs	50%
Lester E. Gordon	Director, Development Advisory Service Research Associate, Center for International Affairs	25%
Carl H. Gotsch	Development Advisor, Development Advisory Service Lecturer in Economics	67%
William C. Hollinger	Development Advisor, Development Advisory Service Research Associate, Center for International Affairs	25%
Anthony Killick	Advisor, currently with the DAS Project, Ghana Research Fellow, Center for International Affairs	75%
Millard F. Long	Research Associate, Center for International Affairs Lecturer in Economics	75%

Name	Position	Approximate Portion of Time to Be spent on AID Research Contract *
Paul MacAvoy	Professor of Industrial Management, Sloan School, Massachusetts Institute of Technology Consultant, Development Advisory Service	15%
Richard D. Mallon	Associate Director, Development Advisory Service Research Associate, Center for International Affairs	50%
Edward S. Mason	Consultant, Development Advisory Service Lamont University Professor, Emeritus	20%
(Donald Mead)	Advisor, currently with the DAS Project, Ethiopia Research Associate, Center for International Affairs	50%
John D. Montgomery	Consultant, Development Advisory Service Professor of Public Administration, and Secretary, Kennedy School of Government	15%
David Morawetz	Research Fellow, Center for International Affairs	75%
Gustav F. Papanek	Development Advisor, Development Advisory Service Lecturer in Economics	50%
(Michael Roemer)	Development Advisor, currently with the DAS Project, Ghana Research Associate, Center for International Affairs	50%
Daniel M. Schydlosky	Research Associate, Center for International Affairs Assistant Professor of Economics	50%
Marcelo Selowsky	Research Associate, Center for International Affairs Assistant Professor of Economics	25%
John Simmons	Research Associate, Center for International Affairs Lecturer in Economics	50%

Name	Position	Approximate Portion of Time to Be Spent on AID Research Contract*
Donald R. Snodgrass	Development Advisor, Development Advisory Service Research Associate, Center for International Affairs	75%
Joseph J. Stern	Development Advisor, Development Advisory Service Research Associate, Center for International Affairs	50%
Lance J. Taylor	Research Associate, Center for International Affairs Assistant Professor of Economics	25%
John W. Thomas	Associate Director, Development Advisory Service Research Associate, Center for International Affairs	50%
Raymond Vernon	Johnson Professor of International Business Management, Harvard Business School Senior Staff Member, Center for International Affairs	20%
David Williams	Research Fellow, Center for International Affairs	50%

* Refers only to the proportions of time to be spent on the AID contract when individuals are in Cambridge.

APPENDIX III

Summary of the Research Program Approximate Man-Month Commitments Called for in the Proposal and Projected Initial Studies

AREA A. Public Policy for Public Enterprise (about 40 man-months)

1. Gordon -- The Impact of Labor Rewards and Behavior on the Performance of Public Enterprises
2. MacAvoy -- The Public Enterprise as Part of a Larger Production System in Indonesia
3. Williams -- The Effect of Foreign Participation and Product Type on the Performance of Public Enterprises
4. Mason -- The Impact of International Financing Institutions on the Performance of Public Enterprises

AREA B. Alternative Financial Systems for Development (about 25 man-months)

1. Cole -- Comparison of Interest Rate Reforms in Indonesia and Korea
2. Long -- Development of Financial Markets and Institutions in Ghana and Pakistan

(Later, Gillis plus another senior monetary economist)

AREA C. Development with Small Domestic Markets (about 40 man-months)

1. Schydrowsky -- Export Possibilities from Fuller Capacity Utilization in Latin America
2. Morawetz -- Gains and Distribution of Benefits in the Andean Group

Area C. Development with Small Domestic Markets, continued

3. Selowsky -- Implications of Trade Liberalization in Chile
4. Mallon -- Balance of Payments Dynamism in Argentina,
Colombia and Peru
5. Stern -- Trade and Industrial Rationalization in Ghana
(Later, Roemer and Mead)

AREA D. Organizing for Agricultural Development (about 35 man-months)

1. Thomas -- Comparative Study of Agricultural Organization in
Java and East Pakistan
2. Falcon -- Employment Effects of Rapid Technological Change
in Indonesia
3. Gotsch -- Comparative Study of Mechanization in the Pakistan
and Indian Punjab
4. Simmons -- Organizing for Rapid Technological Change in
Tunisia

AREA E. National Development Strategies (about 35 man-months)

1. Killick -- Ghanaian Development Strategy in Three Eras
2. Snodgrass -- Growth and Distribution in Malaysia with
Special Reference to Ethnic Differences in Income
Distribution
3. Papanek -- Growth, Distribution and Control in Indonesia
(Later, Chenery, Roemer, and Hollinger)