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 Decisionmaking and human capital in less developed countries; progress report, Jan. 1976- May, 1977

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9. ABSTRACT  
 A PROJECT: To explore determinants of individual earnings and skill levels in developing countries using the human capital approach.  
 DURATION: January 1976 - December 1978  
 DEVELOPMENTS: If more understanding can be gained on how human capital factors contribute to skill levels and individual earnings, development efforts in LDCs can be made more efficient. This interim report summarizes progress during the first sixteen months of a two-year project. The factors being analyzed are schooling, family size, allocation of work hours, the life-cycle productivity of individuals, unemployment, human fertility, and nutrition and health. The project is expected to produce four or more background papers, nine or more empirical case studies, and four or more synthesis reports. Existing survey data have been prepared for analysis. Additional data collection efforts have been initiated. One important data set being analyzed is a survey of income, wealth, and agriculture in Guatemala. A contract has been signed with Survey Research Malaysia to develop and apply a survey instrument concerning networks of economic support. A contract is also being developed to collect detailed economic, demographic, and agricultural data on 2,700 households in Central Mindinao, Luzon, and Visayas. The survey will include intelligence and knowledge tests. Other project activities underway include analyses of the interactions between demographic patterns, life cycles, and economic development; determinants of wages in rural India; deter-

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minants of market labor supply of landed and landless Indian farmers; determinants of rural-urban migration in Columbia; a description of aspects of full income distribution in Columbia; and the productivity of children in Guatemalan peasant agriculture.

AID/OTR-C-1432 GTS  
RAND PN-AAE-489

ANNUAL REPORT SUMMARY SHEET

Decisionmaking and Human Capital in Less Developed Countries

Project Title and Contract Number

No. AID/OTR-C-1432

Dr. Finis R. Welch, The Rand Corporation

Principal Investigator and Contractor

1700 Main Street, Santa Monica, California

Contractor's Address

January 1, 1976 to December 31, 1978  
Contract Period (as amended) From - To

January 1, 1976 to May 14, 1977  
Reporting Period From - To

Total Expenditures and Obligations  
Through Previous Contract Year

\$144,451

Total Expenditures and Obligations For  
Current Contract Year

\$438,971

Narrative Summary of Accomplishments and Utilization:

This report summarizes progress in the project since its beginning and discusses expected accomplishments between May 1977 and May 1978. Among the highlights of the last year discussed herein are the completed preparation of Guatemalan survey data for analysis by Consortium members; the initiation of major surveys in Malaysia and the Philippines, both of which are expected to produce data in time for use in this project; initiation of research collaboration with several LDC researchers; planning of a flexible framework to facilitate additional LDC collaborations in the future; and research on diverse topics that are expected to result in nine completed papers and four additional draft papers in the next year.

Statement of Project Objectives and Reporting Requirements

Objectives of the project are summarized in a passage from our proposal (February 1975):

We propose to explore determinants of individual earnings and skill levels in developing countries using the human capital approach. In recent years, this approach has tied functional and personal income distributions in a simple and straightforward manner. We want to analyze schooling; family size; the allocation of family members time between such diverse alternatives as work on the family farm, work for hire, and work in the household; the shape of the full life cycle productivity profile of individuals; migration; unemployment; human fertility; and nutrition and health as though they are each instrumental in affecting human welfare and are each therefore subject to the ordinary optimization calculus.

The outcomes of the project are to include four or more background papers, nine or more empirical case studies, and four or more synthesis reports, all concerning the above topics. The outcomes are also to include research collaboration with scholars and students from less developed countries (LDCs), and the collection of additional LDC data as deemed appropriate.

#### Accomplishments to Date

Accomplishments to date are of five types: preparation of existing survey data for project analysis, initiation of additional data collection efforts, initiation of LDC collaboration, Research Advisory Committee meetings, and research by project staff.

Concerning the first type, an important data set for analysis in this project comes from the income, wealth and agriculture survey instrument in Guatemala. Considerable additional cleaning and editing of these data have been required to ready them for the detailed income distributional analyses to be done in this project. This work is nearly completed and the data seem ready for the planned analyses.

Regarding initiation of additional data collection efforts, Rand has signed a contract with Survey Research Malaysia (SRM) to develop and administer a survey instrument concerning networks of economic support. The instrument has been developed and tested and is attached to this report. It goes into the field the week of May 16, and cleaned data should be available to Consortium members by April 1978. This instrument is administered in about 1200 households in Peninsular Malaysia and adds

unusually complete data on the structure and functions of informal capital markets to the detailed economic and demographic data currently being collected on these households. In addition, Rand is now finalizing a contract with the Center for Population and Development Studies (CPDS) at the University of the Philippines at Los Baños (UPLB). The resulting project will collect detailed economic, demographic, and agricultural data on about 2700 households in Central Mindinao, Luzon, and Vasayas. In addition, intelligence and knowledge tests will probably be administered. The instruments for this survey are now in final stages of preparation at UPLB and Rand and are anticipated to enter the field in mid June. Julie DaVanzo will be on site in late May and early June to work with our Philippine collaborators. Teresa Ho will probably monitor progress on site during part of the summer. The CPDS anticipates that cleaned data will be delivered to Rand by October 1977. After additional cleaning at Rand, we hope to deliver the data to Consortium members four months following this delivery.

The next area of accomplishment--initiation of LDC collaboration--began early in 1977 with the arrival of M.T.R. Sarma at Yale. Sarma has begun his research there in collaboration with Marc Rosenweig. In addition, the Rand contract with UPLB provides funding for research by Philippine graduate students and scholars. This research will utilize the Philippine data to be collected and will take place in the year following October 1977<sup>1</sup>. Finally, it was agreed at the May 1977 meeting of the Research Advisory Committee to institute a "mini-grants" program to fund research projects by LDC students and scholars. These funds could be allocated quickly upon identification of an appropriate opportunity and would be used either at the recipients' LDC institution or at a Consortium institution. Collaboration between a project researcher and a grant recipient would be an important feature of this program. Finis Welch's memo proposing details of the arrangement is attached to this report.

Concerning Research Advisory Committee meetings, two have been held since the project's inception. Both were useful sources of ideas for research, LDC collaboration, and additional data possibilities. The attached minutes of these meetings serve as a summary of the proceedings.

The final area of accomplishment is research by project staff. To date research is near completion in the following areas described in more detail below: the interactions between demographic patterns, life cycles, and economic development; determinants of wages in rural India; determinants of market labor supply of landed and landless Indian farmers; determinants of rural-urban migration in Columbia; description of aspects of full income distribution in Columbia; and time allocation and productivity of children in Guatemalan peasant agriculture. Research is beginning in the following additional areas, also described in more detail below: modeling the economic roles of the family in the setting of LDC institutions; description of full income distribution in a Guatemalan sample; and patterns and determinants of investments in children in India.

We anticipate one change in the research design specified in the contract. Marc Nerlove would like to substitute a paper developing appropriate econometric techniques for use with polytomous household data in panel form, for his empirical paper originally planned. This change was discussed and approved at the May 1976 meeting of the Research Advisory Committee, since the methodological area this study would concern is pertinent to many of the empirical case studies to be carried out in this project. In addition to this change, we call attention here to the forwarding of the effective date of the project's start to May 14, 1976, as discussed in Finis Welch's letter of June 11, 1976 to James Brown of AID and amended in conversations between Welch and Brown.

#### Dissemination and Utilization of Research Results

As summarized below, a number of papers will be disseminated in draft form in the next several months. These will go initially to selected Research Council members for review and subsequently to the broader research and policy community.

#### Work Plan for the Coming Year

The elements of our work plan concern research output, data gathering, and LDC collaboration. Planned research output between May 1977 and May 1978 is as follows:

<u>Subject of Paper</u>	<u>Author</u>	<u>Expected date of Draft Paper</u>	<u>Expected date of Completed Paper</u>
Interractions Between Demographic Patterns, Life Cycles and Economic Development	Simon Kuznets	May 1977	November 1977
Time Allocation and Productivity of Children in Guatemalan Agriculture	John Stein	June 1977	November 1977
The Distribution of Full Income in Columbia	T. Paul Schultz (co-authored)	May 1977	November 1977
Determinants of Rural-Urban Migration in Columbia	T. Paul Schultz	July 1977	November 1977
Determinants of Wages in Rural India	Mark Rosensweig	September 1977	March 1978
Determinants of Market Labor Supply of Landed and Landless Indian Farmers	Mark Rosensweig	September 1977	March 1978
The Distribution of Full Income in Rural and Semi-Metropolitan Guatemala	Julie DaVanzo and Finis Welch	September 1977	December 1977
Economic Roles of the Family in LDC Institutional Settings	Robert Willis	November 1977	May 1978
The Distribution of Full Income in Peninsular Malaysia	Julie DaVanzo and Finis Welch	January 1978	May 1978
The Changing Value of Human Time in Economic Growth	Marc Nerlove	February 1978	next period
Patterns of Economic Support Among Malaysian Households	William Butz	May 1978	next period
Life Cycle Patterns of Work and Earnings Among Guatemalan Women	James P. Smith and Robert Willis	May 1978	next period
Patterns and Determinants of Investment in Children in Rural India	Mark Rosensweig and M.T.R. Sarma	May 1978	next period

The data gathering schedule in the next year includes completed surveys in Malaysia and the Philippines (described above) and dissemination of the resulting cleaned data to Consortium members.

During the next year collaborative research should be well underway by students and scholars in Mindinao, Luzon, Visayas and Los Baños, funded by Rand's anticipated contract with UPLB. During this time, M.T.R. Sarma should nearly complete his research in conjunction with the Yale component of the project. In addition, discussions of the past year will continue with members of the Vargas Foundation in Brazil, aimed at arranging for members of Vargas to spend research time at Consortium institutions. These arrangements may be handled through the mini-contracts procedures described above. Consortium members will also investigate other potential LDC researchers to be supported in this way. We hope to have at least two such agreements in effect during the coming year.

The following budget to support these plans calls for total expenditures of \$ 438,971.00 between May 1977 and May 1978:

ANTICIPATED EXPENDITURES

5/1/77 - 4/30/78

SALARIES	\$ 58,800
FRINGE BENEFITS	23,814
CONSULTANT FEES	17,553
TRAVEL COSTS	4,404
COMPUTER COSTS	16,500
SUBCONTRACT COSTS	<u>253,000</u>
TOTAL DIRECT COSTS	
INDIRECT COSTS	<u>\$ 64,900</u>
TOTAL ESTIMATED COSTS	<u>438,971</u>

Involvement of Minority Personnel and Women

Julie DaVanzo has been instrumental in development of the Malaysian Networks questionnaire and revision of the Philippine instruments. She is now beginning research on full income distribution in Guatemala. Henry Corona has been preparing a detailed users' manual for the Guatemalan data as well as assisting Consortium members in preparing to use the data files. Teresa Ho will very likely monitor the Philippine survey in summer 1977 and report progress to Consortium members. Cathy Kasala has been instrumental in cleaning the Guatemalan data on income, wealth, and agriculture.

EXPENDITURES

INCEPTION TO 5/1/77

SALARIES	\$ 21,050
FRINGE BENEFITS	8,269
CONSULTANTS' FEES	19,772
TRAVEL COSTS	2,795
COMPUTER SERVICES	7,629
OTHER DIRECT COSTS	128
SUBCONTRACTS	<u>50,373</u>
TOTAL DIRECT COSTS	\$110,016
INDIRECT COSTS	<u>34,435</u>
TOTAL COSTS	<u>\$144,451</u>