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MANAGING COMMITTEE ERS/MC 83



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THE WORLD BANK/INTERNATIONAL FINANCE CORPORATION

OFFICE MEMORANDUM

ERS/MC83-16

For MC Consideration Dec. 5, 1983 Record

TO: Managing Committee

November 23, 1983

FROM: Anne O. Krueger UNK

SUBJECT:

A Special Program of Comparative Development Studies

1. I am attaching for your consideration a proposal for a special five-year research program of comparative development studies, which has been cleared with the Research Policy Council. These would be intensive case studies of several countries, frequently ten or more, on important development and policy issues such as trade, agricultural pricing reform, capital markets imperfections, etc. The studies will seek to determine the common lessons of experience, based on systematic assessment of the effects of various policies across a large variety of institutional environments. The findings of such studies will provide a firmer empirical and analytical basis, as well as greater credibility to Bank advice on national and sectoral policy issues. The increased priority that the Bank is attaching to the policy dialogue with member governments, combined with relative scarcity of systematic empirical evidence on what development policies work and how in different settings, suggests that the Bank embark on such a program the soonest.

2. Comparative studies are worthwhile only if they are done on a scale that encompasses a significant number of countries. To do well, they are relatively costly. As a consequence, the program envisaged cannot be accommodated either in the external research budget, or those of ERS and OPS without seriously impairing research on other important issues of concern to the Bank. Thus, it is proposed that they be funded by a special allocation of \$1 million in FY85, \$2 million in FY86 and \$3 million in FY87 through FY89. It is expected that the program will be jointly managed by ERS and OPS under the broad guidance of the Research Policy Council.

I. Background

1. The Bank is increasingly playing a larger role than in the past as an advisor on national and sectoral policy issues. The Bank's capacity to make relevant and credible policy recommendations depends critically on applied research on past policy experiences in developing countries. To increase that capacity, it is recommended here to step up the research based on <u>comparative studies</u> of lessons of experiences. Such studies will not only allow a more systematic assessment of the effects of policies across a larger variety of environments, they can also be used to identify systematic factors that influence the effectiveness of the Bank's own instruments of assistance. The case for such comparative studies being undertaken by the Bank was also stressed by the 1979 General Research Advisory Panel (GRAP) Report.

2. Comparative development studies are empirical studies of a development issue which combine the in-depth insights that can be obtained through intensive country case studies, with cross-sectional analysis. They serve to synthesize the development and policy experience of particular countries within a common analytical framework, and thus to facilitate the transfer of experience from one country to another. The main characteristics of such studies are summarized below.

3. First, they are empirical studies of important development and policy issues that can include the impact of policy change upon development performance, the actual process of policy change itself, and the study of the impact of the Bank's instruments on that change.

4. Second, in all empirical research, given a budget constraint, there is a trade-off between the size of the sample (number of countries in this instance) and the depth of analysis of each unit in the sample. At one extreme, there are cross-country statistical studies of particular relationships (e.g., share of agriculture in GNP against various indicators of level of development) which utilize a large sample of countries but minimal information per country. At the other extreme, there is the single country case study, focusing on a great deal of historical information. The studies proposed here are intended to combine the depth of perception and analysis which is the strength of the case study methodology, with the ability to contrast, which is the strength of cross-sectional studies, based on a sufficiently large sample. Thus, the proposed studies will usually cover ten or more countries, depending on the topic analyzed.

5. Third, each study will involve a number of common elements. There will be a Research Plan, setting out the study's objectives and methodology, and an Analytical Framework which will be a detailed specification of the core information to be collected and how it is to be analyzed in each of the country case studies. The function of the Analytical Framework is to guide the country case study teams to ensure at least a minimal level of comparable information over all sample countries. It is expected that the country case studies will contain information of interest and value in itself, and that a selection of them will therefore be published. Finally, a volume will be written distilling and synthesizing the main lessons of the research from the sample of country case studies. The synthesis volume will identify regularities observed across the sample; it will compare and contrast different approaches to and experiences of development; and it will normally be the most important output of the research for policy purposes as well as the most significant contribution to our knowledge of the development process.

6. Fourth, the format of such comparative policy studies lends itself well to collaborative research. It is intended that the country case studies will normally be conducted by researchers in the developing countries themselves. Involvement of developing country researchers will both add credibility to the research findings and have potentially large direct benefits through the impact of the findings on policy formulation in the countries analyzed. In this way, these studies would strongly advance the Bank's long-held objective of fostering local research capacity through collaborative research activities.

II. The Need for Resources: Probable Program Costs

7. It has become increasingly apparent that the encouragement of good comparative studies -- even those based on a relatively small number of countries -- will very soon stretch the resources of the External Research budget. The amounts involved are too large to be accommodated by reallocations, if reasonable balance is to be maintained in the research portfolio. An intensive country study involving data collection, analysis and an active participation of collaborative teams can easily involve a cost of \$100,000. The present proposal of CPD on timing and sequencing of trade liberalization policies -- based on the experience of approximately 15 countries -- is expected to cost approximately \$2 million, which does not include Bank staff time. A proposal being prepared by ERS on the political economy of agricultural price policies will probably require a similar budget.

8. In order to sustain this increased number of research initiatives it is proposed that a special allocation be made for such studies. They cannot be accommodated either in the budget of ERS and OPS or in the external research budget, without seriously impairing research on other important issues of concern to the Bank. Even if the program starts slowly in FY85 and builds up later on, it would mean that in FY1985 probably no other new starts could be accommodated. Beyond FY85, other programs would have to be reduced to accommodate a Comparative Studies program of the scale needed. Thus, a special program of comparative studies is needed. Special allocations starting with \$1 million in FY85, \$2 million in FY86 and increasing to \$3 million in FY87 and being maintained at that level through FY89, would enable the completion of at least 5 to 6 high quality studies.

9. The management of this program of studies will be important. While the Research Policy Council will review the broad program, the Vice Presidents ERS and OPS will jointly manage the program, and agree upon mechanisms to oversee the quality, relevance and implementation of these studies. FORM NO. 89

(2-83) THE WORLD BANK

ROUTING SLI	P	Date Nov.	17, 1983			
OFFICE OF	THE PRES	SIDENT				
Name			Room No.			
MANAGING COMMITTEE Mr. Clausen						
Mr. Stern Mr. Qureshi						
Mr. Benjenk Ms. Krueger						
Mr. Paijmans Mr. Shihata Mr. Thahane						
To Handle		lote and File				
Appropriate Disposition	P	repare Reply				
Approval	P	er Our Conve	rsation			
Information	R	ecommendati	on			
Additional mate on Monday, November GNP Study.	rial for 21, of P	discus er Capi	sion ta			

OFFICE MEMORANDUM

DATE November 15, 1983

RECORD

- TO Managing Committee Members
- FROM Jean Baneth, EPDDR (through Mrs. Krueger, VPERS)

EXTENSION 61811

SUBJECT Study on Per Capita GNP

1. Please find herewith 12 country notes discussing the validity of GNP estimates and the advisability of using the official exchange rate as the conversion factor.

2. The Managing Committee might wish to read with particular care the note concerning Hungary, and perhaps, for purposes of comparison, one note concerning a country where use of an adjusted exchange rate is warranted (e.g. Paraguay) and one note concerning a country presenting relatively few problems (e.g. Turkey).

3. Following the decision of the Managing Committee, the Report has been given to:

Jane Hallow, U.S. Executive Director's office for transmission to U.S. experts.

Mr. Ray, Indian Executive Director for transmittal to Messrs. K.C.Seal and Bimal Jalan; comments to be received by me when I visit India in December.

Mr. Phaichitr, Executive Director for Thailand for transmittal to

Mr. Ambhorn Arunrangsi, Secretary General, National Statistical Office. Mr. El Naggar.

Brazil Division for transmittal to the Brazilian authorities.

Senegal Division for transmittal to the Senegalese authorities.

Sir John Boreham, Director, U.K. Central Statistical Office, whose comments are attached. Apart from a few valid technical remarks, the main emphasis of the comments is to underline the desirability of developing PPP information and strengthening national accounting in developing countries.

4. Comments received from the representative of the Hungarian Statistical Office were minimal. However, her presence here and also the fortuitous passage through Washington of Mr. Bacskai, Managing Director, Hungarian National Bank, were very helpful in providing information relative to Hungary's national accounts and trade and payment system.

Att.

JBaneth/kg



CABINET OFFICE Central Statistical Office

Great George Street, London swip 3AQ Telephone 01-233 6117

From the Director: Sir John Boreham, K.C.B.

11 November 1983

GNP PER HEAD COMPARISONS: DRAFT REPORT ON METHODS

I have collected comments on the first version of the report, which you sent me on 4 November, and cobbled them very roughly together. I hope they are of some use. (They do, of course, include my own comments!)

The recommendations are sensible and represent what is probably the only practicable course that can be pursued.

The two major considerations are the quality and comparability of the the GNP series for the different countries and the availability of relevant price indices. The Bank is an operational user of the data and therefore has a real need to gain general acceptance of the validity of the measures used in considering qualifications for assistance. Compilation of the series is however under the direction of the UNSO and it is to that organisation that the Bank has to look for support in improving the data that it needs. How pressure can be applied on the UNSO to accelerate the process of improving the data is a consideration not really addressed. I would hope that one outcome of the report would be that the UNSO could put greater emphasis in its work on remedying the shortcomings of the data by:-

i. concentrating technical assistance in developing countries with deficient GNP data;

ii. concentrating the development of PPP data on countries where they are most likely to be needed for operational reasons.

The work involved in critically examining every country's sources and methods would be considerable even spread over a five year period and I do not believe that it can be to any great extent based on enquiries direct to other "international agencies and member countries", page 16. I fear that such an approach would be too subjective and there is a real danger that respondents will have an interest in under-stating the comparability in the reports received. The only way to achieve a proper study may be by means of a consistent "audit" of most, if not all, countries.

R Chander Esq World Bank Economic and Analysis Projections Department 1818 H Street N W Apart from the work involved I am rather more concerned that the results of studies to determine data quality and exchange rates and their use to adjust national data will cause continual controversy similar to that over the use of PPPs. Any adjustment will result in some "losers" and some "winners" - the former would naturally resist any changes and I suggest may well demand a level of critical appraisal much greater than they apply to their own national statistics and certainly to the present system which for all its known deficiencies we continue to use. There may be nothing that can be done about that, though.

Wherever PPP data are available they should be put alongside the conventionally produced GNP/capita series as an added aid to interpretation. The use of dual scales and guidelines is favoured in the discussion on page 26.

Although references to the International Comparisons Project (ICP) in the report raise some general questions about the practical and conceptual problems involved, it is clear that from the World Bank's point of view it is the issues affecting the estimates for developing countries which are of concern. It now seems to be recognised (para. 16 on page 20) that the earlier approach of using international prices for the whole world as a basis for comparisons among developing countries is unsatisfactory, and that comparisons based on prices from "not too dissimilar" countries are to be preferred. This is an important step forward which the UK has been advocating for a number of years.

The report refers to the inadequacies of exchange rates as the basis for converting to a common numeraire but paragraph 36 (pages 28/29) seems to imply that in some circumstances they would be appropriate. Though the point is perhaps academic, given the objective of measuring relative commands over goods and services, I would question whether this is so - and for two reasons. First, exchange rates are affected by transactions which have no direct connection with flows of goods and services; secondly, the GNP includes imputations, which for developing countries may be relatively large, and in respect of which exchange rates may be quite inappropriate (as we know to be the case for the services of owner-occupied housing, for example).

There are in the report some signs of confusion about the appropriate methods of extrapolating GNP per head from a benchmark estimate. Fortunately paragraphs 31-32 on pages 26-27 come to the right conclusion, though this seems to rely on "expert opinion". The reason for using indices relating to the categories of domestic absorption to extrapolate PPP's, rather than using the implicit GNP deflator, is quite straightforward. The PPP's themselves do not cover export and import prices as such, so use of the GNP deflator which includes them may lead to error. Changes in GNP per head reflect not only movements in real GP but also changes in the terms of trade, If the concept of real national disposable income were followed internationally then this could be used to extrapolate NDI per head and the problem would not arise. Paragraph 40 on page 30 refers once again to the GNP deflator so one cannot be sure the point about terms of trade effects has been taken.

In paragraphs 26-27 on pages 14-15 there is reference to the adjustments needed to go from SNA to LPS definitions. I thought the main adjustment needed was already provided for on the standard UNSO questionnaire.

The reference to 10 per cent in paragraph 37 on page 29 is very puzzling.

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Finally, there is one area in which I feel has been omitted from the discussion. The usual indicator used is GNP per capita and no mention has been made of the fluctuations in the population estimates used in the Atlas. In general, this is not as great as other problems but it can occur and can result in quite serious operational difficulties. As an example, I would cite the 1980 estimates of the population of Zimbabwe in the 1981 and 1983 editions of the Atlas. The revised figures in the later publication show a population about 6.8 per cent smaller than in the earlier one. The result would be a per capita GNP about 7.25 per cent higher without any revision of the national accounts.

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JOHN BOREHAM

Annex 1

COUNTRY BRIEF ON ALGERIA

I. National Accounts

1. The official national accounts estimates of Algeria, both in current and constant prices, are compiled on the basis of the new System of Algerian Economic Accounts (Systeme des Comptes Economiques Algerian (S.C.E.A.). The S.C.E.A. is a combination of the UN System of National Accounts (SNA) and the Material Product System (MPS) and permits the derivation of both gross domestic product (GDP) and net material product (NMP). Responsibility for the compilation of the national accounts estimates rests with the Directorate of Statistics and National Accounts of the Ministry of Planning.

2. GDP is now computed on the basis of value added by industrial origin. Customs statistics and balance of payments data provided by the customs and state monopolies and the Central Bank are the basis for estimating the contribution of the external sector to gross domestic expenditure (GDE). Fixed investments are estimated on the basis of commodity flows (domestic production of investment goods, imports of investment goods, plus taxes on imports and distributive margins). The government sector accounts are based on the government's budget. Private consumption is derived as a residual.

3. The national accounts data of Algeria at current prices, according to the country economist, have improved substantially and are now considered to be fairly good. Therefore, the country economist does not make any adjustments to the current price GDP estimates. However, for the years 1980-81 the country economist did make estimates, since government figures were not available; the country economist's estimates were extrapolated from the government estimates for the earlier years by means of various physical or financial indicators.

4. The country economist also estimates constant price GDP data, because the Algerian deflators are based on sector classifications different from those of the UN SNA. However, differences between the Bank's and official constant price GDP data are not significant. Some documentation on the Bank's deflators is available in the files.

5. The quality control tests carried out by the Economic Analysis and Projections Department (EPD) included some areas where the basic data warrant close examination; but the tests showed up no specific weakness for which adjustments can be made by the Bank.

II. Conversion Issues

Exchange rate system

6. The dinar has been pegged to a basket of 13 currencies since 1975, whose relative weights take into account both current and capital transactions. A 60 percent encouragement premium is granted on convertible currencies repatriated by Algerians working abroad, in excess of a legal minimum.

7. On parallel market where the exchange rate is two to three times the official rate (dinars per foreign currency), the market is relatively small because of tight controls. Algeria has concluded bilateral payments agreements with some countries, including Albania, Guinea, Guinea-Bissau, and the USSR, but most foreign transactions are in convertible currencies. Imports are tightly controlled. The extent of smuggling is not known.

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8. The Bank's country economists have not calculated shadow exchange rates, nor have they estimated the tariff equivalents of quantitative restrictions on trade. Direct indications concerning restraints on imports, the premium on remittances and the black market all tend to indicate that there is a serious divergence between the average exchange rates effectively applied to foreign payments and the official rate. However, the extent of the difference is not well known. Indirect indications are that it may not have increased markedly. In particular, the appreciation of the real exchange rate for the Dinar was quite mild, particularly considering that Algeria is an oil-exporting country whose terms of trade have greatly benefitted from the higher oil and gas prices of the 1970s (Table 1). Therefore, while a considerable effort to make more careful calculations seems to be warranted, meanwhile the official exchange rate can continue to be used for Atlas per capita GNP computation purposes.

Table 1: REAL EXCHANCE RATE INDEX, ALCERIA

(1974=100)

		197 0	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
(A)	Relative price index <u>/a</u>	103.2	99.7	96.1	95.7	100.0	102.8	105.2	109.7	115.4	112.8	113.2	113.7	118.4
(B)	Nominal exchange rate/ <u>b</u> index	118.1	117.5	107.3	94.7	100.0	94.5	99.6	99.2	94.9	92.2	91.8	103.2	109.8
(C)	Real exchange rate index (A/B) <u>/c</u>	87.4	84.8	89.6	101.1	100.0	108.8	105.6	110.6	121.7	122.4	123.4	110.2	107.8
(D)	Average real exchange rate index for com- parable country group/ <u>c</u> ,d	92.4	91.5	94.6	107.3	100.0	109.4	103.3	102.6	104.2	105.5	106.6	94.5	89.9

/a Domestic absorption deflator index divided by U.S. domestic absorption deflator index.

/b Units of domestic currency per dollar.

<u>/c</u> Relative domestic absorption deflator index divided by exchange rate index. It shows the real exchange movement.

/d Middle income, oil-exporting North African countries.

III. Conclusion

11. The 1982 per capita GNP for Algeria was computed at U.S. \$2,220 based on the official exchange rate. Algeria's national accounts estimates have improved considerably in the recent past and are now being compiled in line with the UN SNA with the exception of the sector deflators. There is not enough evidence on the divergence between the official and the average exchange rate effectively used in foreign payment transactions to warrant its being considered "exceptional". Therefore, the official exchange rate can continue to be used for the computation of the Atlas per capita GNP.

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COUNTRY BRIEF ON BRAZIL

I. National Accounts

1. The Getulio Vargas Foundation prepares data on gross domestic product /1 by industrial origin and expenditure, following an earlier version of the UN System of National Accounts. The current price and constant price expenditure series are complete, but only indices of production are available for the constant price value added by industrial origin. The most recent national accounts publication was in 1981, with complete data through 1980 and partial data for 1981.

2. The country economists have concluded that some weaknesses exist in the national accounts. In part, this is the result of inadequate resources and the low quality of basic data. There is also insufficient coordination among government agencies in compiling the accounts.

3. The country economists have made adjustments to the official Brazilian constant price export and import series, by using UNCTAD deflators for merchandise and the Bank's international price index for non-factor services (NFS). A comparison of the original Brazilian data with these adjusted estimates shows wide differences in real growth. It has not been possible to explain this discrepancy, which may not directly affect the validity of calculations bearing on the value of GNP, but nevertheless exemplifies some of the difficulties presented by official Brazilian accounts. The principal price indices also need further investigation, especially given Brazil's high inflation rates.

<u>Value added by industrial origin is given in terms of net domestic product.</u>

Table 1: EXTERNAL TRADE

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	1975	1976	1977	1978	1979	1980	1981
Exports of goods & NFS							
UNCTAD	12.5	0.4	7.0	3.4	5.0	20.2	20.7
Brazil	8.2	12.1	16.4	-2.5	0.2	1.5	••
Imports, goods & NFS	.7						
UNCTAD	-9.7	-1.2	-8.0	5.4	0.6	-4.8	-13.5
Brazil	-4.5	-1.2	-7.6	4.6	8.2	0.9	

(average annual growth, percent)

4. Overall, Brazil's national accounts data seem weak. Resources permitting, a thorough review is to be undertaken. Meanwhile, however, the weakness does not seem to be so fundamental as to preclude the use of the official GNP estimates.

II. Conversion Issues

Exchange Rate System

 Since August 1978, Brazil has periodically adjusted its currency (cruzeiro) taking into account (1) relative changes in domestic prices vis-avis its major trading partners; (2) the level of foreign exchange reserves;
(3) export performance; and (4) the overall balance of payments position.

6. Formally, Brazil maintains a single exchange rate. However, during the recent past (a period in which dollars were hoarded), a black market rate developed that runs about 60 percent above (more cruzeiros per dollar) the official rate. All but an estimated 5 percent of total external trade is believed to be transacted at the official rate. Black market transactions are said to be applied mostly to invisible and capital transactions. 7. Barter-type arrangements were limited to wheat imports from Argentina and trade with the CMEA (Council for Mutual Economic Assistance) countries, in total less than 10 percent of total trade. Brazil is now expanding such arrangements to other trading partners.

8. The role of quantitative restrictions on imports and countervailing arrangements for exports has also been increasing. Such measures have raised the average exchange rate (cruzeiros per dollar) effectively applied to foreign payments well above the official exchange rate; the divergence may now amount to 30-50 percent. Recent estimates prepared by the International Financial Corporation of the shadow exchange rate show a discrepancy with the official exchange rate of a little over 35 percent.

9. Table 2 shows that Brazil, like other middle-income South American countries, allowed its exchange rate to appreciate in real terms during the 1970s. This degree of appreciation (and other pertinent information on past transactions) may not be enough by itself to justify abandoning the official exchange rate. Moreover, Brazil devalued substantially in real terms in early 1983 (by about 30 percent).

10. Additional light is shed on this issue by the International Comparison project. In 1975, ICP III showed Brazil's PPP converted per capita GDP to be approximately 73 percent of that of Mexico. Extrapolating these GDP numbers by means of per capita GDP growth rates to 1982, the relationship has changed in favor of Mexico, slightly if terms of trade changes are ignored, and markedly if they are not. Yet in the most recent Atlas and operational guidelines, the per capita income of Brazil was shown to be somewhat higher than that of Mexico. Nevertheless, it is not clear that predevaluation trade restraints and other measures influencing the difference between the official exchange rate and the exchange rate effectively used in foreign payments were severe enough to warrant departure from the standard Atlas method.

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Table 2: REAL EXCHANGE RATE INDEX, BRAZIL

(1972 = 100)

		197 0	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
(A)	Relative price index/a	78.0	87.7	100.0	114.2	139.2	170.8	234.4	313.7	412.9	596.7	1059.8	2067.1	3814.7
(B)	Nominal exchange rate/ <u>b</u> index	77.4	89.1	100.0	103.2	114.4	137.0	179.9	238.4	304.5	454.1	888.3	1569.4	3025.2
(C)	Real exchange rate index (A/B) <u>/c</u>	100.7	98.4	100.0	110.6	121.6	124.7	130.3	131.6	135.6	131.4	119.3	131.7	126.1
(D)	Average real exchange rate index for com-				• :				÷					
	group/ <u>c,d</u>	99.9	101.8	100.0	106.8	116.6	107.3	122.8	114.4	118.6	131.0	141.3	141.8	125.9

/a Domestic absorption deflator index divided by U.S. domestic absorption deflator index.

/b Units of domestic currency per dollar.

<u>/c</u> Relative domestic absorption deflator index divided by exchange rate index. It shows the real exchange movement.

/d Upper middle income South American countries.

III. Conclusions

11. Although the national accounts estimates of Brazil have shortcomings which warrant a thorough review, the official data may be used for the time being. There are several indicators of a major and, until recently, growing divergence between the exchange rate and the average exchange rates effectively applied to foreign transactions. The recent significant devaluation of the cruzeiro in real terms has probably reduced this divergence to a normal level. Despite the earlier departure, which was probably not quite exceptional, the standard Atlas averaging procedure will be used.

BBE(BBE-R-006)

COUNTRY BRIEF ON GABON

I. National Accounts

1. Since 1974, the national accounts estimates of Gabon have been compiled on the basis of the UN SNA. The estimates are prepared by the Direction Générale de l'Economie, Direction de la Statistique. The latest official estimates at current prices cover the period up to 1980 and were published in 1982. The Bank and the IMF have made estimates for 1981-82 on the basis of information obtained in the country. EPD prepares the constant price estimates. One difficulty in computing per capita GNP is that Gabon has officially estimated its 1980 population at 1.2 million, whereas in 1982 the UN estimated it at 563,000 and the World Bank at 682,000./1

2. The official national accounts data seem to suffer from certain weaknesses in: (1) coverage, especially, of the informal sector; (2) the valuation of production, especially in the agricultural sector; (3) reconciliation between commodity exports and their value added. At present, there are few alternative surveys and objective administrative data that offer more reliable statistics. Documentation on data and methodology are not available in the World Bank files.

^{/1} The population was estimated at 449,000 in the 1961 census, which was considered reliable. The Ministry of Health of Gabon estimated the population at 620,000 (in December 1977) on the basis of statistics on incidence of diseases. This estimate could be corroborated from the official education statistics and age-structure of Gabon's population. Since these statistics are consistent with each other, the Bank's estimates based on them are considered reasonable. The 1980 census results giving an estimate of 1.2 million were not accepted by the UN Population Division.

3. The results of EPD quality control tests suggest many limitations in the national accounts estimates. It is also not clear to what extent the GDP estimates include imputations based on the official population figures, and should therefore be readjusted downward if the lower population estimates are used. Further analysis of these issues is hampered by the lack of information and the absence of a country economist over the past two years since the Bank does not lend to Gabon.

II. Conversion Issues

Exchange Rate System

4. Gabon belongs to the Franc zone and uses the "Franc de la Cooperation Financière en Afrique" (FCFA) as its currency; it is pegged to the French franc (FF) at a fixed rate of FCFA 1 to FF 0.02. Exchange rates for other currencies are derived from the currency rates in the Paris exchange and the fixed rate between the FF and FCFA franc. Apart from gold, there are no exchange controls applicable to France and those countries whose bank of issue is linked by an operations account with the French Treasury.

5. Gabon has a liberal trade policy. In general, imports from member countries of the UDEAC (Central African Customs and Economic Union) are free from regulation. Imports from countries outside the UDEAC are subject either to an authorization for imports over FCFA 500,000 or a license to import. Imports from countries outside UDEAC that are similar to and compete with domestic products are subject to licensing, although in practice licenses are granted quite liberally. There are no general regulations for exports.

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There is only one exchange rate, and no parallel or black market rates. 6. Nor are there any bilateral or barter trade agreements, no quotas or notable distortions in the domestic prices of tradables. Smuggling is reportedly insignificant. No significant changes occurred in the exchange and trade system in The real exchange rate has appreciated significantly during the the recent past. This reflects the substantial real gain in the terms of trade period, 1970-80. during the period, as also evidenced from the real exchange movements of the oil producing countries with similar level of per capita income. However, in 1981 and 82, Gabons FCFA depreciated with the French francs. On balance, there is no evidence of exceptionally large divergences between the official exchange rate and the average exchange rate effectively used in foreign transactions (Table 1).

Table 1: REAL EXCHANGE RATE INDEX, GABON

(1975=100)

		197 0	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
(A)	Relative	96.2	94 1	07 0	Q/, Q	01 6	100.0	110.9	110.2	103.0	121 8	122.8	125.9	12/ 5
(B)	Nominal	00.5	04.1	02.0	04.0	91.0	100.0	110.9	119.2	123.2	121.0	122.0	0.021	194.0
(0)	rate/ <u>b</u> index	129.6	129.3	117.7	103.9	112.2	100.0	111.5	114.6	105.3	99.3	98.6	126.8	153.3
(C)	rate index $(A/B)/c$	66.6	65.1	70.3	81.6	81.7	100.0	99. 4	104.0	117.0	122.7	124.6	99.2	87.7
(D)	Average real exchange rate index for com- parable country													
	group/ <u>c,d</u>	67.5	67.7	76.2	82.0	82.5	100.0	100.8	99.4	109.1	116.8	121.5	104.8	93.4

/a Domestic absorption deflator index divided by U.S. domestic absorption deflator index.

/b Units of domestic currency per dollar.

<u>/c</u> Relative domestic absorption deflator index divided by exchange rate index. It shows the real exchange movement.

/d Middle income oil-exporting Africa, south of Sahara, countries.

7. In the 1982 Atlas, Gabon's per capita GNP for 1982 was shown as U.S.\$4,000 and Gabon was treated as an exceptional case, because of the recent relatively rapid rise of its prices expressed in dollars. However, there is no indication that trade is particularly restrained or subjected to exceptionally high duties; there is no indication that Gabon's official exchange rate diverges in an exceptional manner from the rate effectively applied to foreign payment transactions. It is, therefore, proposed that Gabon no longer be considered an exceptional case.

III. Conclusions

8. Gabon's population statistics and national accounts estimates need considerable improvement. Pending a re-examination of these issues, the World Bank will use the official national accounts data and its own population estimates to derive per capita GNP in national currency. However, Gabon has a liberal system of trade and payments, its currency is strong and the current official exchange rate is fairly close to the average exchange rate effectively used in foreign transactions. The usual multi-year average of the official exchange rates will be used in future to convert GNP into US dollars.

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JEE(JEE-R-008)

COUNTRY BRIEF ON GHANA

I. National Accounts

1. Official estimates of Ghana's national accounts have been available since 1950. However, only since 1971 has the Central Bureau of Statistics, responsible for the compilation of the national accounts, begun to prepare its estimates in line with the UN SNA. GDP is estimated primarily on the production side. On the expenditure side, gross domestic fixed capital formation, changes in stocks, government consumption, and exports and imports are estimated independently, with private consumption derived as a residual. There is about a four year time lag in producing the GDP estimates. The most recent official GNP estimates now available are those for 1978.

2. The Bank's country economists, in consultation with country authorities and the IMF, estimate GNP for the years for which official estimates are not available. While documentation on the derivation of the estimates is inadequate, it appears that they are based on partial data on production of important agricultural and industrial products, on foreign trade statistics and on aggregate price indexes.

3. Agriculture is the most important sector in Ghana (about 60 percent of GDP), with subsistence farming quite important. Estimates of the value added in the subsistence sector are constrained by the lack of information and may produce substantial errors in the total estimates of GDP. Also, given the complex price system, including controlled and free market prices and prices governed by long-term trade contracts, it is difficult to obtain reliable price data for estimating national accounts. A comparison of Bank estimates of GNP for 1977 and

78 with subsequent official estimates shows that the Bank's estimates in current prices are about 30 percent and 20 percent higher than the respective official estimates, while the Bank's estimates of GNP in constant prices are about 5 percent and 10 percent lower than the official estimates. Efforts need to be made to improve the quality of the estimates, particularly the current price estimates. There is an urgent need to shorten the time lag in preparing national accounts.

4. Given the long time lag involved in the production of official estimates, the Bank will have to continue to make its own estimates and these will be used for calculating the Atlas per capita GNP. To improve the Bank's GNP estimates, priority will need to be given to obtaining more reliable and disaggregated price data.

II. Conversion Issues

Exchange Rate System

5. Up to 1982, Ghana had a highly restricted trading and payment regime with high export bonuses and import surcharges. The official exchange rate had been adjusted only to a very limited extent although a high rate of inflation was being experienced. Domestic prices converted into dollars at the official exchange rate rose sevenfold in relation to U.S. prices from 1970 to 1982. Because of these factors, until 1982 the Bank adjusted the official exchange rates and used these in estimating the Atlas per capita GNP of Ghana.

6. In April 1983, Ghana devalued the Cedi by more than tenfold (cedis per dollar) and abolished export bonuses and import surcharges. Restrictions on trade and foreign exchange transactions were relaxed, but still exist. Some imports are prohibited or restricted, while all others are subject to import

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licenses. Exports of cocoa (the major export item), diamonds, and a few agricultural products are handled by state-owned export agencies. Settlements relating to transactions covered by bilateral payment agreements with China, Romania, and Yugoslavia are made through clearing accounts. Current payments to or from the Central Bank of West African States (covering Benin, Ivory Coast, Niger, Senegal, Togo, and Upper Volta) and The Gambia, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Nigeria, and Sierra Leone are normally made through the West African Clearing House. On the whole, however, the restrictiveness of the system does not now appear to be exceptional.

7. If the 1970 exchange rate is extrapolated to 1983 by means of relative price movements between Ghana and the United States, the resulting rate comes close to the new official rate, as evidenced by a less than 10 percent real exchange depreciation in 1983 (Table 1). Therefore, when Ghana's 1982 per capita GNP was estimated in 1983, the conversion factor used was the rate extrapolated backward from the new official rate of April 1983. For the sake of consistency with other cases of adjustment, the average real exchange rate of the 1970-1972 period will be substituted to the official exchange rates during the predevaluation periods for the purpose of calculating the three-year average to be used as a conversion factor.

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Table 1: REAL EXCHANGE RATE INDEX, GHANA

(1970=100)

		197 0	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
(A)	Relative price index/ <u>a</u>	100.0	105.5	116.2	124.8	141.5	165.3	207.0	307.8	503.3	616.4	846.6	1538.6	1849.3	2674.1
(B)	Nominal exchange rate/ <u>b</u> index	100.0	100.9	129.8	113.8	112.7	112.7	112.7	112.7	172.8	269.5	269.5	269.5	269.5	2883.7
(C)	Real exchange rate index (A/B)/ <u>c</u>	100.0	104.6	89.5	109.7	125.5	146.6	183.7	273.1	291.2	228.7	314.1	570.9	686.2	92.7
(D)	Average real exchange rate index for com- parable comptry														
	group/ <u>c,d</u>	100.0	99. 0	104.2	118.7	121.4	132.6	129.3	140.4	160.0	176.4	214.5	160.0	149.8	n.a.

/a Domestic absorption deflator index divided by U.S. domestic absorption deflator index.

/b Units of domestic currency per dollar.

/c Relative domestic absorption deflator index divided by exchange rate index. It shows the real exchange movement.

/d Low-income Africa, South of Sahara, countries.

III. Conclusions

8. Due to the long time lag associated with the availability of the official estimates, the Bank will continue to estimate Ghana's GNP at both current and constant prices. However, it is highly desirable to strengthen the statistical system for generating more reliable and more timely information.

9. The recent devaluation of Ghana's currency has greatly reduced the divergence between the official exchange rate and the average exchange rate effectively used in foreign transactions. The 1983 exchange rate can thus be used, without any adjustment, for calculating the 1983 per capita GNP estimate.

COUNTRY BRIEF ON GUINEA

I. National Accounts

1. The official national accounts estimates of Guinea for 1973-1980 were compiled only at current prices on the basis of a mixture of three national accounting systems -- the MPS, Courcier and the old UN SNA -- by the National Accounts Department of the Ministry of Planning. At the request of the government and with UNDP financing these estimates were reviewed by a World Bank Staff member and rebased on the UN SNA system in 1982. Guinea uses the latter estimates at international conferences; however, for domestic purposes it still uses the official estimates.

2. The basic statistics used in compiling national accounts suffer from several weaknesses. All sectors are not fully covered, and output is valued at prices that are neither representative nor reliable. The mix of national accounting systems also introduces some errors. Realizing these problems, the country economist has re-estimated all GDP figures in current and constant prices for the period 1973-80 and prepared fresh estimates for 1981-82 on the basis of information on production newly obtained by Bank staff and FAO. GDPs in constant prices have been also estimated. However, the imputation for ownership of dwellings has not been carried out, because of lack of information. Full documentation on the methodology used for these estimates is available in the Bank's files.

3. Quality control tests carried out on the country economist's estimates indicate that these estimates are reasonably consistent. The

relationship between sectoral growth rates shows consistency and reasonable reliability, as did the test for the food supply and utilization.

II. Conversion Issues

Exchange Rate System

4. The currency of Guinea is pegged to the SDR at Syle (GS) 24.6853 to SDR 1. On the parallel market, hard currencies command rates up to 9 times higher than on the official market.

5. The use of the official exchange rate is limited to exchange transactions effected via official channels. All other exchange transactions are effected through the parallel market. Transactions under the bilateral payments agreement with the People's Republic of China are cleared in yuan at a rate of 1 yuan to GS 10.030 (equivalent to GS21.11 per 1 SDR in July 1983). The transactions between the USSR and Guinea are cleared at a rate of GS 21 to the US\$ (equivalent to GS22.17 per 1 SDR in July 1983).

6. Oversight of all imports and exports is centralized in one government agency, Importex. Imports are effected through import licenses, of which there are two kinds: (1) licenses with settlement for government/public sector imports, and (2) licenses without settlement for private sector imports which are financed by importers from their own foreign exchange resources. All commodities are in principle subject to import surcharges, but exemptions are granted for imports by "mixed-economy" companies (joint venture companies) and some non-residents.

7. The annual export program for the public sector is set by Importex. All exports are subject to licences to permit the Treasury to levy duties, to prevent shortages of goods needed for domestic consumption, and to

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prevent capital flight. The export of certain commodities requires a special authorization in addition to export licenses.

8. All recorded imports are at official rates. About 95 percent are effected with settlements and 5 percent by the private sector with its own foreign exchange. Smuggling is substantial and it represents the main source of supply of consumer goods, spare parts, and construction materials for the private sector.

9. The IMF nominal trade-weighted exchange rate index (1975=100) declined by 24 percentage points by 1982, the real effective trade-weighted exchange rate by 44 percentage points. The 1982 shadow exchange rate, as estimated by the country economist, was three to five times the official exchange rate (units of domestic per foreign currency). There have been no major changes in the exchange rate regime in the recent past, and the proportions of transactions made at the various exchange rates have remained more or less the same. The government's trade policies and domestic price policies have not changed substantially either. The adjustment of domestic prices to international prices is being given somewhat more importance than in the past (e.g., fuel, electricity, etc.).

10. Guinea's per capita GNP for 1982 was computed at U.S.\$300. On the basis of the latest information, the divergence between the official exchange rate and the estimated shadow rate is considerable. The adequacy of the official exchange rate for per capita GNP calculation purposes is in doubt and hence it should be reviewed at the time of the next Atlas exercise.

III. Conclusions

11. The new national accounts estimates made by the country economist show reasonable consistency and reliability, an assessment that is confirmed

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by the quality control tests. For lack of reliable information on a deflator for domestic absorption and the difficulties encountered in finding a year since the 1960s when the official exchange rate approximated the effective transaction rate, it is not possible to determine with reasonable accuracy the size of divergence between the two rates. However, given the divergence between the two rates as evidenced from the comparison of the official exchange rate and the Bank estimated shadow rate, the adequacy of the official exchange rate for conversion purposes should be carefully reviewed when the next round of Atlas GNP per capita calculations are made.

JEE(JEE-R-005)

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COUNTRY BRIEF ON HONDURAS

I. National Accounts Data

1. The Central Bank of Honduras estimates gross domestic product by industrial origin and expenditure following the UN System of National Accounts. National accounts are prepared rapidly; for example, advanced preliminary estimates of the major economic aggregates for 1983 are already available.

2. The National Accounts Section of the Central Bank appears to have the necessary resources to produce the accounts. Nevertheless, a review of national accounting practices, conducted in 1974, found that: (1) the price information was weak; there is no wholesale price index; (2) input/output relationships utilized for estimating sectoral value-added were outdated; (3) technical skills needed improving; and (4) coordination among various statistical offices in the country was inadequate.

3. The quality of the national accounts data appear to have deteriorated over the past three years. In addition, given the significant structural changes in agriculture, communications, industry, and foreign trade, the 1966 base year is no longer suitable. Nevertheless, Bank staff have not made any revisions or adjustments to the national accounts data and a variety of quality control tests did not identify egregious weaknesses.

4. In particular, data on employment were broadly consistent with the growth of value added in industry and services for 1970-80, and a comparison of the FAO agriculture production index with growth in value added in

agriculture shows roughly the same movement in most years. Therefore, the national accounts data of Honduras can be used in the Atlas GNP per capita calculations. The issue may have to be reexamined if the reported recent deterioration of data quality continues.

II. Conversion Issues

Exchange rate system

5. The Lempira (L) has been pegged to the U.S. dollar since the 1950s, with a par rate of L2=U.S.\$1.00. A black market rate fluctuates within a 10 to 30 percent margin over the official rate. However, the transactions conducted at the black market rate are believed to be no more than 20 percent of all foreign transactions and relate mostly to capital movements and tourism expenditures.

6. All official foreign transactions are made at the official exchange rate. There is a general export duty of 1 percent of the f.o.b. value except for coffee, cattle, meat, sugar and minerals. Customs duties vary depending on the origin of the imports, i.e., the Central American Common Market versus other countries.

7. Until recently, Honduras did not engage in barter trade. However, such trade has been established with Nicaragua and El Salvador, with the balance of transactions settled at the official exchange rate.

8. The government has recently imposed various import restrictions by requiring import permits and deposits; imports were drastically curtailed in 1982, and again in 1983. The situation is not expected to improve in 1984, since trade deficits have become significant. Other exchange restrictions were introduced for both current and capital transactions in 1981 because of

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foreign exchange shortages, payments difficulties in the Central American Common Market, and declining exports and worsening terms of trade, as well as capital flight.

9. The Lempira has had a better position in terms of convertibility and purchasing power compared to the currencies of certain other Central American countries which have been experiencing serious civil unrest and capital flight (El Salvador and Nicaragua). One outcome has been a substantial increase in smuggling into Honduras from these two neighboring countries.

10. All in all, however, except for certain capital flows, there is no indication that the divergence between the average exchange rate effectively used in foreign payment transactions and the official rate is egregiously large. For the time being, therefore, the official rate will continue to be used for conversion purposes. If the divergence increases markedly, this conclusion may have to be reconsidered. The continued appreciation of the real exchange rate may well signal the need for such reconsideration.

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Table 1: REAL EXCHANGE RATE INDEX, HONDURAS

(1976 = 100)

		197 0	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
(A)	Relative price index/ <u>a</u>	100.0	95.7	97.7	99.0	104.1	101.1	100.0	106.2	103.8	104.0	103.6	105.9	110.4
(B)	Nominal exchange rate/ <u>b</u> index	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
(C)	Real exchange rate index (A/B)/ <u>c</u>	100.0	95.7	97.7	99.0	104.1	101.1	100.0	106.2	103.8	104.0	103.6	105 . 9	110.4
(D)	Average real exchange rate index for com- parable country	×												
	group/c,d	89.7	88.4	89.0	91.9	98.9	98.3	100.0	103.1	101.7	101.9	105.9	101.7	n.a.

/a Domestic absorption deflator index divided by U.S. domestic absorption deflator index.

/b Units of domestic currency per dollar.

<u>/c</u> Relative domestic absorption deflator index divided by exchange rate index. It shows the real exchange movement.

/d Lower-middle income Central America and the Caribbean countries.

Atlas procedure - Departure from the standard method

11. Honduras was treated as an exceptional case in the 1981 Atlas exercise. At that time, it was argued that the exchange rate for Honduras needed adjustment (the Lempira is pegged to the U.S.\$) because of the sharp deterioration in its terms of trade, because of declining coffee and banana prices and higher oil import prices. However, for the calculation of the 1982 per capita GNP, the standard Atlas method was applied on the grounds that the divergence between the official and effective transaction rate was not exceptional in comparison with other country cases. III. Conclusions

13. Although Honduras' national accounts data have some deficiencies, they are of reasonable quality to be used in the Atlas GNP per capita calculations. For the time being, there seems to be no need to deviate from the normal practice of using a conversion fator based on a multi-year average of the official exchange rates.

BBE(BBE-R-004)

COUNTRY BRIEF ON HUNGARY

I. National Accounts Methodology

1. Since 1968, Hungary has published GDP estimates, closely following the concepts and accounting methods of the United Nations System of National Accounts (UN SNA). An independent check has confirmed this. In 1976, a joint study of the U.N. methodology for linking SNA to the Material Product System (MPS) was undertaken by the Institut National de la Statistique et des Etudes Economiques (INSEE, France) and the Hungarian Statistical Office. One of the papers published following that study found that Hungarian GDP estimates for 1976 diverged by less than 1% in content and coverage from what they would have been if Hungary had strictly followed the UN SNA./1

II. Domestic Prices

a. Overall Comparability

2. A difficult conceptual issue concerns the comparability of prices and values in Hungary with those in market economies. Hungary has quite radically departed from the patterns of the early 1950s, when economic relations were commanded by plans established in physical volumes and by rationing. On the whole, prices for most commodities are now closely related to costs (including

^{/1} M. Personnaz, J-P. Milot and P. Horvath, "The France/Hungary Comparison of National Accounting Concepts and Data - Part One," presented at the Seventeenth General Conference of the International Association for Research in Income and Wealth, Gouvieux, France, August 16-22, 1981, Annex IV.
indirect taxes net of explicit subsidies). Most markets clear at the prices set, without excessive queuing, with the major exception of the markets for housing and for private cars, where queuing prevails, and the market for foreign exchange where Hungarians travelling abroad only get minimal allocations, and presumably buy the rest on the black market.

b. Taxes and Explicit Subsidies

3. Indirect taxes and profit taxes on firms constitute over two-thirds of budget revenues. Other things being equal, these tend to raise the general price level more than do personal income taxes. The latter, including social security contributions, account for only about one third of total budget revenues.

4. Subsidies also play a considerable role in the Hungarian price system. In particular, a broad array of food items is subsidized to the tune of 15 to 40 percent. Such subsidies account for a third of State budget expenditures, and were almost 20 percent of GDP in 1981. On fuels used for home heating, the subsidy is even heavier: about 2/3 of the cost of home heating oil at the end of 1981 (Ft 6700/ton) was subsidized. Such explicit subsidies clearly affect the comparability of the shares of national expenditures devoted to specific categories. The question is, however, whether they also affect the overall magnitude of GDP. The answer to that question would probably be negative. The subsidies which reduce the market price of one category of items (food, etc.) are financed by taxes on turnover and on production, which raise the prices of other goods. They do not seem to have a pronounced overall effect on the level of GDP.

5. One would reach a different conclusion if the distribution of taxes and subsidies was such as to have a differential impact on nontraded and

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traded goods. If, for instance, domestic sales were subsidized and the subsidy financed mainly by means of an export tax, this would cause the exchange rate effectively applied to exports to diverge markedly from the official rate, and to have fewer forints per dollar. However, in the present state of our knowledge, we have no reason to believe that in Hungary, consumer subsidies are financed through export taxes; on the contrary, according to internationally widespread practice even normal general taxes are partly rebated to exporters.

c. Implicit Subsidies

6. A somewhat different issue arises with sectors which receive implicit, and not explicit, subsidies. Housing is the most important case in point. Rents are very low, and rental housing is in effect severely rationed. However, only part of the difference between rental prices and economic costs is covered by explicit subsidies for the maintenance of buildings. A more important cause of undervaluation is that the housing authorities make little or no provision for the depreciation of buildings. As this does not show up in their operating deficits, no corresponding explicit budget subsidy needs to be provided for. Consequently, this particular element of undervaluation is not necessarily compensated by taxes which raise the price of other items.

7. The Hungarian Statistical Office has recognized the importance of this issue but it has been only partly successful in dealing with it. One of the major departures of the Hungarian GDP accounts from SNA practice is the treatment of rent. Its value is imputed at a notional cost, including depreciation, rather than accounted at the rentals actually charged. Depreciation is calculated on the basis of the book value of the capital

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stock, revalued from time to time to compensate for inflation. The practice is certainly desirable, and gives a more accurate and internationally more comparable picture of rentals than if the formal SNA rules had been followed. Nevertheless, some undervaluation may well remain, because the capital stock is revalued only at intervals of several years, during which prices continue to rise. Total gross rental payments, however, are typically around 5 percent of GDP for middle income countries. The possible undervaluation of Hungary's GDP resulting from these pricing and accounting practices almost certainly does not exceed 2 percent.

8. Similar remarks may also apply to some parts of the social infrastructure (railways, urban public transport, hospitals), whose prices may be lowered not only by the operating subsidies they receive, but also by the possibility of not fully reflecting capital costs in their price structure and financial accounts. In these respects, however, Hungarian practices are probably not very different from those of many market economies.

d. The Private Sector

9. Private activities account for a substantial part of total production in Hungary. This "second economy" is, in principle, included in the estimate of GNP. Such inclusion extends to goods produced by workers of public sector enterprises, after official working hours, for resale to households and enterprises, and to private services like taxicabs, repairs, etc.

10. Information on such production is only partly based on direct reporting by private firms, individuals and households licensed to carry out private production activities. Consumer expenditure surveys constitute a more important, and probably more reliable source of information. In such surveys, separate questions reportedly deal with the share and type of final

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consumption goods obtained from non-official sources, and this information is used to build up the production accounts.

11. The Bank is not in a position to assess directly the accuracy and completeness of this coverage. However, the methodology seems well-thought out, and correctly applied. There seems to be little reason to expect that the coverage of small-scale enterprise activity in the national accounts of Hungary is significantly less than in other middle-income developing countries.

12. In view of their considerable importance, a particular effort is made to estimate construction activities by households, and home consumption of food produced by agricultural households. This is also done (at least in principle) in other developing countries, while in industrial countries most of the value added by "do-it-yourself" home construction and remodelling projects is not included in GDP. Home consumption of food produced by households in the agricultural sector is accounted for at market prices rather than producers' cost. Both of these practices tend to raise the value of GNP relative to the practices followed elsewhere.

e. Illegal Activities

13. Most illegal activities, or even para-legal activities like prostitution, are not included in GNP, in Hungary, nor in most other countries. There is no indication that the excluded activities are particularly large in Hungary. However, there has been some discussion on the proper treatment of under the counter payments for legally provided goods and services. These are not included in GNP. Such payments mostly occur in the health sector, and while they reportedly amount to a significant share of

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health expenditures, their inclusion in GNP would not raise the value substantially.

f. Conclusion

14. It is impossible to evaluate fully the impact of these methodological and other divergences on the final value of Hungary's GDP. However, studies done by Hungarian and foreign experts indicate that the net effect is not likely to lead to a significant understatement of GDP.

III. Conversion Issue

a. General

15. Hungary's trade and financial transactions with the Western industrial countries and with major developing country trade partners are settled in convertible currencies. The value of the forint in terms of a weighted basket of nine currencies is adjusted at periodic intervals, notably to maintain trade competitiveness. Exchange rates are quoted weekly on the basis of cross-rates to the basket. Actual purchases or sales of foreign exchange are neither taxed nor subsidised. The exchange rates of the forint against currencies of the member countries of the Council for Mutual Economic Assistance (CMEA),/ $\underline{2}$ Albania and the Democratic People's Republic of Korea are fixed by official agreement for long periods. Trade with these countries is settled mainly in transferable rubles. In addition, Hungary has bilateral payments agreements with several Latin American countries, Finland, Iran and China, and trade agreements with bilateral payments features for certain commodities with Afghanistan, Bangladesh, and Pakistan.

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^{/2} The member countries of the CMEA are Bulgaria, Cuba, Czechoslovaki, German Democratic Republic, Hungary, Mongolia, Poland, Romania, USSR and Viet Nam.

Trade and Payments in Convertible Currencies

16. Trade settled in convertible currencies has accounted for 50-60 percent of the total trade in recent years. These transactions take place at international market prices. A fee of 2 percent is levied on all such imports, in addition to import duties whose trade-weighted average is about 15 percent. In view of recent payments difficulties, imports of components have been subjected to a further 20 percent import surcharge. Hungary has been a member of the GATT since 1973. As part of the Multilateral Trade Negotiations (MTN), the weighted average tariff level applied on a most-favored-nation basis is to be reduced from 17.2 percent in 1979 to 10.7 percent in 1987. Foreign trade is a state monopoly. Exports and imports are effected 17. only by specialized foreign trade organizations, and by a limited number of productive enterprises authorized to conduct foreign trade directly. All imports are subject to licensing. Consumer goods imports have always been limited by quotas; more recently, raw material imports have also been subjected to quantitative restrictions.

18. Exports are subject to licensing; licenses are liberally given, except for security and similar restrictions. Agricultural products and processed foods may receive a subsidy of not more than 8 percent of the value of the agricultural raw material they contain. Indirect taxes are refunded to exporters. Exporters also receive a variety of other tax refunds and credit privileges.

19. All this suggests that the average exchange rate effectively applied to the foreign payment transactions settled in convertible currencies is higher (more forints per dollar) than the offical exchange rate. However, the difference cannot be considered exceptionally large.

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c. Trade and Payments in Rubles

20. Most trade with CMEA countries is conducted within the framework of annual and five-year bilateral trade and payments agreements. Prices and quotas representing delivery obligations and conditions of delivery are fixed annually. Trade exceeding the quota is settled in convertible currencies. Whenever feasible, prices are set at the five year moving average international prices converted into transferable rubles at the official ruble/dollar exchange rate.

21. A comparison of the forint dollar cross rate via the official ruble exchange rate, with the direct forint-dollar rate, shows that the forint is more highly valued in trade with the CMEA than in trade with convertible currency areas. The official dollar exchange rate is 44 forints per U.S. dollar. The exchange rate of 26 forints per ruble, combined with the official exchange rate of .72 rubles per U.S. dollar yield a forint-dollar cross rate, via the ruble, of about 19 forint to the dollar.

22. There can be little doubt that, at its official exchange rate, the ruble is overvalued for many purposes. The forint/ruble rate partly corrects for this overvaluation. However, for raw materials, including petroleum, which constitute the bulk of Hungary's imports from the USSR, the official rate causes their forint prices to be very low, when compared to international prices converted at the official forint-dollar rate.

23. For instance, the price of petroleum exported by the USSR to Hungary, fixed on the basis of the five-year moving average formula, now approximates \$30 per barrel; for the simplicity of illustration, that figure is used. In rubles, the price is therefore set at 21.6 rubles per barrel. In forints, that costs 561.60 forints, which is (at the official dollar - forint exchange rate) equal to \$12.8 per barrel of petroleum.

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24. From the point of view of national product comparisons, this raises the issue whether the forint/ruble and forint/dollar exchange rates should be treated as multiple exchange rates, to be averaged somehow. After a thorough examination of the available evidence, it has been concluded that such a process would not be justified. Exchange rates and prices do not play a dominant influence in determining the volume and composition of trade among CMEA members. The price of imports above the quota must be settled in convertible currencies. This is all the more necessary as the volumes of raw material and fuel imports are strictly limited by the bilateral agreements. The raw materials imported at the favorable price described above are resold to Hungarian users at forint prices which, in general, reflect their international prices, calculated at the forint/dollar exchange rate.

25. The forint prices of non-quota items (30-40 percent of imports from CMEA countries), do not seem to be particularly attractive when compared to imports from convertible currency countries, taking quality differentials into account. While Hungary has been running a trade deficit with the CMEA area (in fact, with the USSR), this too cannot be taken as an indication that the forint is particularly over-valued vis-a-vis the other currencies used in the area. It is rather a consequence of the facilities Hungary has for financing these deficits through semi-automatic, low interest loans.

26. The implications of exchange and trade relations between Hungary and the CMEA countries deserve further investigation. In the present state of our knowledge, however, they do not offer convincing reasons for departing from the use of the dollar/forint rate for conversion purposes. Even if, after further studies, a different conclusion were reached, the alternative rate would probably apply at most to raw material imports, say 70% of imports from CMEA countries, or about 12 percent of Hungary's total foreign trade.

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III. Conclusion

27. Hungary's official GDP estimates are quite reliable. The official exchange rates applied to trade with convertible currency countries in 1982 do not appear to show an exceptionally wide divergence from the average rate at which foreign payments transactions are effectively taking place. Despite major organizational and institutional differences between Hungary and other developing countries, the significance of Hungary's GNP numbers converted at the official exchange rate (properly averaged), is reasonably comparable to those of other developing countries.

28. There is indirect evidence to support this conclusion. The PPPconverted values of per capita GDP in 1980 for Hungary and a few other countries with comparable per capita income levels appear to be broadly consistent with the Atlas estimates of per capita GNP (see Table 1).

Per capita GDP index in ICP terms (Austria=100)	Per capita GNP in Atlas/ <u>c</u> (US\$)
54 . 9/ <u>a</u>	1,930
59.7/ <u>a</u>	4,160/ <u>d</u>
52.6/ <u>b</u>	1,980
46.9/ <u>a</u>	2,300/ <u>d</u>
57.0/ <u>b</u>	2,620/ <u>d</u>
48.2/ <u>a</u>	2,540 <u>/d</u>
	Per capita GDP index in ICP terms (Austria=100) 54.9/ <u>a</u> 59.7/ <u>a</u> 52.6/ <u>b</u> 46.9/ <u>a</u> 57.0/ <u>b</u> 48.2/ <u>a</u>

Table 1: 1980 PER CAPITA GNP/GDP ESTIMATES

/a Obtained directly from preliminary data of Phase IV of ICP.

Phase IV data for these countries are not yet /Ъ available. Data from Phase III of ICP on Purchasing Power Parity (PPP) ratios of domestic absorption in 1975 were extrapolated to 1980 by the use of relative price indices. The resulting updated PPP ratios were applied to data on domestic absorption at current prices in 1980. Net exports in 1980 (as shown in the national accounts) were converted at the official exchange rate. The sum of these two items, divided by the 1980 midyear population, gives per capita GDP in 1980 "international dollars". This calculation was performed for Mexico and Uruguay, and for Austria. Dividing the per capita GDP of the former two countries by that of the latter, we obtained the "index in ICP terms".

/c 1983 World Bank Atlas.

/d Re th nu

Recent sharp devaluations by these four countries imply that the exchange rates used to compute the 1980 Atlas numbers may have diverged significantly from the corresponding effective transaction rates, and thus overstated the resulting per capita GNP numbers in U.S. dollars.

JPE(JPE-R-014a), November 17, 1983

COUNTRY BRIEF ON IVORY COAST

I. National Accounts

1. Since 1974, the national accounts estimates have been compiled on the basis of the UN SNA by the National Accounts Directorate of the Ministry of Planning. The latest official national accounts estimates cover the period up to 1979, published in July 1981. The estimates for the period 1980-82 are based on the Budgets Economiques prepared by the Forecasting Directorate at the Ministry of Finance. Since 1980, the Budgets Economiques has become de facto a parallel provisional national accounts system. The World Bank is using these estimates without adjustments.

2. Official GDP estimates at constant prices are not available. The estimates used in the World Bank are made by EPD staff in consultation with country economists and IMF staff, on the basis of price indices provided by the Direction de la Statistique to IMF and World Bank missions.

3. The national accounts data appear weak in terms of: (1) coverage of the informal sector; (2) the relevancy and reliability of the price statistics for the valuation of the output of the agricultural sector; (3) the time lag in the publication of official estimates. There are few censuses and surveys, the administrative reporting system relies on reporting by establishments and subjective staff estimates, production of establishments employing less than five persons are not covered, and all informal sector activities in urban areas are excluded from the value added estimates. 4. Despite these weaknesses, the national accounts data of Ivory Coast are acceptable by the standards for countries with similar income levels. One particular factor that may affect the computation of GNP is the relatively large number of immigrants, who may not be adequately reflected in estimates of total population. This issue merits further investigation.

II. Conversion Issues

Exchange Rate System

5. The Ivory Coast is a member of the Franc Zone and uses the CFA franc (FCFA). This is pegged to the French franc (FF) at a fixed rate of FCFA 1 to FF 0.02. Apart from gold, no exchange controls apply to France, and to countries whose bank of issue is linked by an operations account with the French Treasury.

6. All imports are grouped into: (1) prohibited; (2) subject to import licenses (over FCFA 25,000 f.o.b.); (3) declaration of intent to import, and (4) prior authorization and declaration of intent to import. Requirements (3) and (4) apply to transactions of over FCFA 100,000. In addition, certain commodities are subject to annual import quotas (e.g., rice), while other imports are subject to limits in terms of transaction values. Imports over FCFA 1.5 million are subject to preshipment inspection (in terms of price, quantity, and quality control). About 25 percent of the trade in both directions is with France, 30 percent with the rest of the European Community, 10 percent with the Organization of Central African States, and 35 percent with the rest of the world.

7. There are no parallel or black market rates, nor any bilateral or barter trade agreements. Since 1975 quotas have been introduced for some 500

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products, and now about 30 percent of imports are subject to quotas. Import licenses are traded in the domestic market at a premium. There are no export subsidies.

8. The exchange rate regime has not changed recently. Moreover, the existing trade policies pertaining to tariffs, quantitative restrictions, and domestic price policies are being reformed in the framework of a structural adjustment program. The real exchange movements as shown in Table 1 indicate a marked appreciation in real terms until 1980, followed by a decline which still leaves relative prices higher than in the early 1970s.

Table 1: REAL EXCHANGE RATE INDEX, IVORY COAST

(1975 = 100)

		197 0	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
(A)	Relative price index/ <u>a</u>	88.5	85.1	90.5	84.9	102.6	100.0	103.7	111.6	117.6	119.1	119.9	122.5	126.4
(B)	Nominal exchange rate/ <u>b</u> index	129.6	129.3	117.7	103.9	112.2	100.0	111.5	114.6	105.3	99.3	98.6	126.8	153.3
(C)	Real exchange rate index (A/B)/ <u>c</u>	68.3	65.9	76.9	81.8	91.4	100.0	93. 0	97.4	111.7	120.0	121.6	96.7	82.4
(D)	Average real exchange rate index for com- parable country group/ <u>c,d</u>	84.2	82.6	85.1	95.1	98.8	100.0	94.9	98.9	103.1	110.1	115.3	104.1	93.1

/a Domestic absorption deflator index divided by U.S. domestic absorption deflator index.

/b Units of domestic currency per dollar.

/c Relative domestic absorption deflator index divided by exchange rate index. It shows the real exchange movement.

/d Lower-middle income Africa, South of Sahara, countries.

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III. Conclusions

9. The national accounts estimates of Ivory Coast need some improvement in terms of timeliness, coverage, and valuation. The country should also make efforts to compile constant price GDP series. On the basis of the findings of a forthcoming EPD and Region review mission, technical assistance may be needed. However, for the purpose of calculating per capita GNP, the accounts (as completed by calculations in the Bank) are adequate. The population estimates on the other hand merit review.

10. Although there are certain trade restrictions, it is considered that Ivory Coast's official exchange rate does not diverge in any exceptional manner from the average rate effectively applied to foreign transactions. Therefore, the official rate can continue to be used for converting GNP into US dollars for the Atlas.

JEE (JEE-R-008)

COUNTRY BRIEF ON PARAGUAY

I. National Accounts

1. The national accounts data of Paraguay are produced by the National Accounts Division of the Central Bank. The national accounts generally follow the UN SNA and are issued quickly. However, documentation on the methodologies employed is sparse.

2. Although the national accounts have not been comprehensively reviewed by the Bank, recent Bank missions have noted some need for strengthening the coverage and methodology. The existence of large-scale smuggling affects coverage. The large hydroelectric projects of Itaipu and Yacyreta appear to be inadequately included in value added in construction and investment and GDP.

		1976	1977	1978	1979	1980	1981
(A)	Official	9,038	10,560	15,470	23,205	34,317	46,790
(B)	Recent Bank mission estimates <u>a</u> /	11,646	17,465	28,322	34,570	49,122	63,687
	A/B (%)	77	60	55	67	70	73

Table 1: VALUE ADDED IN CONSTRUCTION (millions of guaranies)

a/ Including hydroelectric projects.

Given the distortions introduced by the inaccurate measurement of the valueadded in the construction sector, the country economist has made some partial adjustments to the official accounts. 3. Another shortcoming in the compilation of the national accounts is the use of outdated input/output ratios, based on relationships existing in the early 1960s, for determining value added in many sectors. The absence of independent data sources precludes testing the validity of the official estimates. A comparison of the growth of employment and value added in industry shows a large enough discrepancy (e.g., 1970-80 growth was 5.4 percent for employment, and 10.6 percent for value added), to warrant some questions, notwithstanding the possibility that part or all of gains in productivity may explain these differences. Similarly, value added in the agricultural sector does not conform to movements in the FAO production index (the movements for 1972, 1975, 1978, and 1981 are in opposite directions). Mining value added also shows some unusual real gains, for example, 126 percent in 1971.

4. Considering the above, Paraguay's national accounts need improvement and the use of the official national accounts requires some caution. Since the country economist's adjustments are not made on a thorough sector by sector basis, and their partial adjustment yields marginal changes to GDP (e.g., about a 2 percent change in GDP in 1981), however, the official estimates have been used for computing the Atlas per capita GNP. The weaknesses of Paraguay's national accounts certainly warrant a significant effort to improve them, but they do not seem abnormal enough to justify rejecting use of these accounts in the absence of a valid substitute set of accounts.

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II. Conversion Issues

Exchange Rate System

5. The Guarani (G) has been pegged to the U.S. dollar at G126 per U.S.\$ since 1960. In addition a free parallel market rate has existed, at about 3-8 percent above (guaranis per dollar) the official rate until 1981. When Paraguay started construction of the largest dam in the world in late 1976, it did not face any shortages of foreign exchange because of large capital inflows, thus the difference between the two rates was minimal.

The completion of the dam in 1981 coincided with a decline in 6. exports and rising imports. As a result, the free market rate jumped to G200 per U.S.\$ in September 1981. In response, the Central Bank authorized exporters to sell 50 percent of their earnings in the fluctuating free market, a measure that immediately brought about a decline in the free market rate to G160 per U.S.\$. The spread between the two rates widened more rapidly during 1982, and the free rate went above G300 per U.S.\$ in May/June. Although the basic official rate remained at G126 per U.S.\$, in July 1982, the Central Bank officially sanctioned trading at the new rate of G160 per U.S.\$ and formally abolished the free market rate. Further, exporters were required to sell 50 percent of their export earnings at the rate of G160 per U.S.\$ and 50 percent at G126 per U.S.\$. For all imports, the newly sanctioned rate of G160 per U.S.\$ was used, with the exception of petroleum, wheat, agricultural machinery and service payments on external debt for which the basic rate of G126 per U.S.\$ was applied.

7. Despite its official abolition, the free market continued to operate, and the difference between the official and free market rates continued to widen. The free market rate reached approximately G400 per U.S.\$ in mid-1983. Faced with a rapid loss of reserves, the Central Bank gradually tightened administrative constraints on access to the preferential rates and

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imposed controls to ensure that the foreign exchange was used for authorized purposes.

8. For calculating the GNP per capita for 1982, instead of the official rates, exchange rates of G146 and G160 per U.S.\$ for 1981 and 1982 respectively were used in the computations./<u>1</u> These rates were used because the divergence between the official and freely fluctuating rates had widened, and with it the divergence between the official rate and the average rate effectively applied to foreign payment transactions. For future calculations, and assuming no change in the trade and payments systems, the Bank will attempt to estimate directly the average rate effectively applied to foreign payments. Failing that, the adjusted rate will be based upon the average 1970-1972 real exchange rate extrapolated forward.

III. Conclusion

9. Although the Paraguayan national accounts data need improvement, their quality is still acceptable by the standard for countries with similar income levels. The official national accounts data may therefore continue to be used for the Atlas per capita GNP calculation. There is, however, a wide divergence between the official exchange rate of G126 per U.S.\$ and the free market rate of G400 per U.S.\$ in 1983; and the real exchange rate has appreciated substantially without being accompanied by any improvement in the terms of trade and general productivity (Table 2). Therefore, in the next round of Atlas GNP per capita calculations, the official exchange rate to be used

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^{/1} G146 per U.S. dollar for 1981 is the weighted average of the basic official and the free market rates and G160 per U.S. dollar for 1982 is the government sanctioned rate.

can be obtained by extrapolating the 1970-72 average official exchange rate by means of relative domestic absorption price movements between Paraguay and the U.S.

Table 2: REAL EXCHANCE RATE INDEX, PARAGUAY

(1976=100)

		197 0	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
(A)	Relative price index/ <u>a</u>	78.9	78.6	81.2	89.5	101.6	104.6	100.0	100.9	104.8	119.5	125.4	135.5	134.7
(B)	Nominal exchange rate/ <u>b</u> index	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
(C)	Real exchange rate index (A/B)/ <u>c</u>	78.9	78.6	81.2	89.5	101.6	104.6	100.0	100.9	104.8	119.5	125.4	135.5	134.7
(D)	Average real exchange rate index for com- parable country group/ <u>c,d</u>	84.6	84.7	86.1	87.3	99.7	100.6	100.0	105.8	112.0	123.5	131.7	141.6	141.2

/a Domestic absorption deflator index divided by U.S. domestic absorption deflator index.

/b Units of domestic currency per dollar.

/c Relative domestic absorption deflator index divided by exchange rate index. It shows the real exchange movement.

/d Lower-middle income South American countries.

COUNTRY BRIEF ON SENEGAL

I. National Accounts

1. Starting from 1974, the national accounts of Senegal have been compiled on the basis of the UN SNA. The National Accounts Unit of the Statistical Office (Ministry of Finance) has published national accounts estimates to 1979. For 1980-82, unofficial estimates have been prepared by a special group consisting of representatives of the Ministry of Finance, Ministry of Planning, Central Bank and the Statistical Office.

2. The official national accounts estimates need further improvements in terms of better coverage of the informal sectors, and more up-to-date estimates. The country economist has been making adjustments to the GDP components of exports and imports at current and at constant prices in consultation with the IMF, using deflators based on the Bank's indices for international prices (merchandise unit value index for developed countries). Still other adjustments are desirable, notably concerning private consumption and savings estimates, but have not been effected because of a lack of basic data. There is little documentation on the methodology in the World Bank files.

II. Conversion Issues

Exchange rate system

3. Senegal is a member of the Franc Zone and uses the CFA Franc (FCFA). This is pegged to the French franc (FF) at a fixed rate of FCFA 1 to FF 0.02. Exchange rates for other currencies are derived from the rate for those currencies in the Paris exchange and the fixed rate between the FF and the FCFA. Apart from gold, there are no exchange controls applicable to France and countries whose bank of issue is linked by an operations account with the French Treasury. The French Treasury guarantees the convertibility of the currency with the French franc.

4. Imports of a number of commodities are subject to licensing; the requirements also vary according to the area of origin. Exports to countries in the FF area are free of licensing requirements. Most exports to other countries require licenses, basically to assure adequate domestic supplies and to prevent certain re-exports.

5. There are no parallel or black market exchange rates. Import quotas cover only about 5 to 10 percent of total imports. Import duties and taxes on finished consumer goods vary from 70 percent of c.i.f. to around 100 percent. However, the share of such finished consumer goods in total imports is not very large.

6. On balance, Senegal's trade and payments regimes do not seem to be exceptionally restrictive; nor has the real exchange rate moved drastically in recent years. There seems to be no case for departing from the normal practice of using the average official exchange rate for conversion purposes.

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Table 1 REAL EXCHANGE RATE INDEX, SENEGAL

(1972=100)

		197 0	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
(A)	Relative price index/ <u>a</u>	100.5	98.8	100.0	101.9	106.0	111.2	113.5	103.1	101.6	101.5	107.3	108.7	114.5
(B)	Nominal exchange rate/ <u>b</u> index	110.1	109.9	100.0	88.3	95.4	85.0	94.8	97.4	89.5	84.3	83.8	107.7	130.3
(C)	Real exchange rate index (A/B)/ <u>c</u>	91.2	89.9	100.0	115.4	111.2	130.8	119.8	105.8	113.6	120.4	128.0	100.9	87.9
(D)	Average real exchange rate index for com- parable country group/ <u>c,d</u>	98.6	96.8	100.0	111.6	116.0	118.4	112.3	116.7	121.5	129.5	135.4	122.1	109.3

/a Domestic absorption deflator index divided by U.S. domestic absorption deflator index.

/b Units of domestic currency per dollar.

<u>/c</u> Relative domestic absorption deflator index divided by exchange rate index. It shows the real exchange _ movement.

/d Lower-middle income Africa, South of Sahara, countries.

III. Conclusions

10. The national accounts estimates of Senegal need strengthening in terms of improving coverage and valuation, especially for the external sector. The Senegal national accounts unit should, in particular, make more use of existing survey data in cross-checking their estimates of personal consumption expenditures and put more effort into producing national accounts data in a timely manner. The current practice of special government groups preparing unofficial estimates for a recent period seems undesirable from the point of view of longerterm development of a capability for compiling national accounts. There is no indication that Senegal's official exchange rate diverges in an exceptional manner from the rate effectively applied to foreign trade transactions.

COUNTRY BRIEF ON SUDAN

I. National Accounts

1. The data on gross domestic product by industrial origin and expenditure are prepared by the Department of Statistics (DOS), Ministry of National Planning. These data are published in National Income Accounts and Supporting Tables. The latest volume for 1978/79 was issued in May 1983. The data more or less conform to the standard UN SNA.

2. The efforts of the Department of Statistics to produce timely and comprehensive data on national accounts have been hampered by inadequate resources and the lack of the basic data. Consequently, the official national accounts data for Sudan appear with considerable time lag. Their usefulness is further diminished by the fact that they are available only in current prices. The World Bank and the Planning Advisory Team of the Ministry of Planning (PAT) have been estimating the constant price series, as well as the current price series for recent years for which official estimates are not available.

3. There is no documented information on the methodology employed by the World Bank/PAT team to prepare these estimates. The constant price GDP is first estimated from selected physical indicators, such as the output of certain crops, and the number of employees in the government and public enterprises. These are supplemented by estimates of the value of public utilities and government. The current price GNP at the aggregate level is then derived by multiplying the constant price GNP by the appropriate price index. This price index is the weighted average of the cost of living indices for salaried workers in the Khartoum area. The GDP estimates by the World Bank/PAT team were reasonably - close to the DOS data when the latter became available.

4. Overall, Sudan's official national accounts data are considered very weak and in need of substantial upgrading. Adjustments do not seem feasible, given the absence of detailed data and sufficient information on the methodologies applied by the World Bank/PAT team.

II. Conversion Issues

5. The pound is pegged to the U.S. dollar at LSdl=U.S.\$0.7692. There has been a significant devaluation since the fourth quarter of 1982. Thus, the new official rate compares with rates of LSdl=U.S.\$2.8716 in 1977 and U.S.\$2.000 in 1980. Apart from the official exchange rate used for essential imports and official invisible transactions, a free market rate is used for non-essential imports, travel, most private invisible transactions and certain capital transfers. The exchange rate in this free market is allowed to fluctuate freely; it has fluctuated between LSdl = U.S.\$0.54 to LSd = U.S.\$.0.83 since 1982.

6. Some imports are prohibited. Import licenses are required for permitted imports which are financed from several sources. Most imports are subject to an import surcharge of 10 percent and a defense tax of 10 percent ad valorem. Most private sector imports are also subject to advance deposit requirements. Bilateral and barter trade agreements are estimated to account for less than 10 percent of total trade.

7. The 1982 per capita GNP for Sudan was computed at U.S.\$460 and Sudan was treated as an exceptional case. The official exchange rate was applied to a relatively small portion of the total trade, and did not reflect the average rate at which the foreign payment transactions were effectively taking place. The divergence between the official and effective transaction rates was estimated at

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about 30 percent for 1981/82. This takes into into consideration the import surcharges and defense taxes, but excludes quantitative restrictions on trade since their tariff equivalents could not be computed with a reasonable degree of accuracy. However, in the fourth quarter of 1982, the pound was devalued by about 35 percent. The real exchange rate movements as shown in Table 1 indicate significant appreciation until 1981, followed by a decline in 1982, reducing the divergence to a normal level.

Table 1: REAL EXCHANCE RATE INDEX, SUDAN

(1973 = 100)

	197 0	1971	1972	1973	1974	1975	1976	1977	1978	1979	198 0	1981	1982
Relative price index <u>/a</u>	84.4	80.8	89.0	100.0	112.0	113.9	113.6	108.3	.114.6	134.2	153.3	180.3	208.5
Nominal exchange rate <u>/b</u> index	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	103.8	114.5	131.9	143.6	201.6
Real exchange rate index (A/B) <u>/c</u>	84.4	80.8	89.0	100.0	112.0	113.9	113.6	108.3	110.4	117.2	116.2	125.6	103.4
Average real exchange rate index for com- parable country group/ <u>c,d</u>	85.3	84.2	88.2	100.0	102.7	111.5	109.1	118.6	135.1	148.1	179.7	136.1	128.6
	Relative price index <u>/a</u> Nominal exchange rate <u>/b</u> index Real exchange rate index (A/B) <u>/c</u> Average real exchange rate index for com- parable country group/ <u>c</u> ,d	1970Relative price index/a84.4Nominal exchange rate/b index84.4Nominal exchange rate index100.0Real exchange rate index (A/B)/c84.4Average real exchange rate index for com- parable country group/c_d85.3	19701971Relative price index/a84.480.8Nominal exchange rate/b index100.0100.0Real exchange rate index (A/B)/c84.480.8Average real exchange rate index for comparable country group/c,d85.384.2	197019711972Relative price index/a84.480.889.0Nominal exchange rate/b index100.0100.0100.0Real exchange rate index (A/B)/c84.480.889.0Average real exchange rate index for com- parable country 	1970 1971 1972 1973 Relative price index/a price index/a 84.4 80.8 89.0 100.0 Nominal exchange rate/b index 100.0 100.0 100.0 100.0 Real exchange rate index (A/B)/c 84.4 80.8 89.0 100.0 Average real exchange rate index for comparable country group/c,d 85.3 84.2 88.2 100.0	1970 1971 1972 1973 1974 Relative price index/a 84.4 80.8 89.0 100.0 112.0 Nominal exchange rate/b index 100.0 100.0 100.0 100.0 100.0 100.0 Real exchange rate index (A/B)/c 84.4 80.8 89.0 100.0 100.0 102.0 Average real exchange rate index for comparable country group/c,d 85.3 84.2 88.2 100.0 102.7	1970 1971 1972 1973 1974 1975 Relative price index/a 84.4 80.8 89.0 100.0 112.0 113.9 Nominal exchange rate/b index 100.0 100.0 100.0 100.0 100.0 100.0 100.0 Real exchange rate index (A/B)/c 84.4 80.8 89.0 100.0 112.0 113.9 Average real exchange rate index for comparable country group/c,d 85.3 84.2 88.2 100.0 102.7 111.5	1970 1971 1972 1973 1974 1975 1976 Relative price index/a 84.4 80.8 89.0 100.0 112.0 113.9 113.6 Nominal exchange rate/b index 100.0	1970 1971 1972 1973 1974 1975 1976 1977 Relative price index/a 84.4 80.8 89.0 100.0 112.0 113.9 113.6 108.3 Nominal exchange rate/b index 100.0	1970 1971 1972 1973 1974 1975 1976 1977 1978 Relative price index/a 84.4 80.8 89.0 100.0 112.0 113.9 113.6 108.3 114.6 Nominal exchange rate/b index 100.0	1970 1971 1972 1973 1974 1975 1976 1977 1978 1979 Relative price index/a 84.4 80.8 89.0 100.0 112.0 113.9 113.6 108.3 114.6 134.2 Nominal exchange rate/b index 100.0 10	19701971197219731974197519761977197819791980Relative price index/a84.480.889.0100.0112.0113.9113.6108.3114.6134.2153.3Nominal exchange rate/b index100.0100.0100.0100.0100.0100.0100.0100.0100.0101.0Real exchange rate index (A/B)/c84.480.889.0100.0102.0113.9113.6108.3110.4117.2116.2Average real exchange rate index for com- parable country group/c_d85.384.288.2100.0102.7111.5109.1118.6135.1148.1179.7	197019711972197319741975197619771978197919801981Relative price index/a84.480.889.0100.0112.0113.9113.6108.3114.6134.2153.3180.3Nominal exchange rate/b index100.0100.0100.0100.0100.0100.0100.0100.0100.0100.0Real exchange rate index (A/B)/c84.480.889.0100.0112.0113.9113.6108.3110.4117.2116.2125.6Average real exchange rate index for com- parable country group/c_d85.384.288.2100.0102.7111.5109.1118.6135.1148.1179.7136.1

/a Domestic absorption deflator index divided by U.S. domestic absorption deflator index.

/b Units of domestic currency per dollar.

<u>/c</u> Relative domestic absorption deflator index divided by exchange rate index. It shows the real exchange movement.

/d Low income Africa, South of Sahara, countries.

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III. Conclusions

8. The most important issue in the computation of the per capita GNP of Sudan is the weak nature of the national accounts data. Sudan would greatly benefit from longer term assistance in the development of its statistcal system and the expansion of the underlying basic data base. The Bank's Eastern Africa Region expects some improvement in the data in the near future as a result of the inputs to be provided under a technical assistance project to the DOS. The program will need to be monitored closely.

9. Sudan was treated in the 1982 per capita GNP computation as an exceptional case when the 1982 per capita GNP computations were undertaken. The wide divergence between the official and the estimated effective transaction rates was taken into account. As Sudan has since devalued its currency by a sufficient margin and the divergence between the two rates has been virtually eliminated, it is proposed that Sudan be no longer treated as an exceptional case. The standard Atlas method with three-year averaging will be used.

SLE(SLE-R-003b)

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COUNTRY BRIEF ON TURKEY

I. National Accounts

1. Official national accounts for Turkey are available from 1948 on. The State Institute of Statistics has been compiling these estimates, closely following the concepts and definitions of the UN SNA. The national accounts on the production and expenditure sides are estimated independently. Therefore, the estimates are subject to a built-in check. However, documentation of the detailed methodology is not available in the Bank's files.

2. There is virtually no time lag in the estimates of GNP. For example, the preliminary GNP estimates for 1982 were available in November 1982, the final estimates in April 1983. A comparison of some aggregate GNP data with a few related indicators (e.g., employment, money supply, and consumer price index) shows no "abnormality." This, together with the country's long history in GNP estimation, suggests that Turkey's national accounts data are reliable.

II. Conversion Issues

Exchange Rate System

3. Since June 1981, Turkey has followed a flexible exchange rate policy in which the exchange rates are adjusted daily. A uniform exchange rate is applied to most foreign transactions. Settlements with a few countries (Iran, Iraq, Libya, Pakistan, and Romania) are made under bilateral payment agreements or through special clearance accounts. 4. A significant proportion of imports are subject to import licensing. Most imports fall in the category of "liberalized" items as specified by the government's annual import program. There are no limits as to either the value or quantity of goods imported under this category. Imports of goods not specified in the import programs need to be authorized by the government. Exporters of industrial and mining products are entitled to a special allocation of foreign exchange equivalent to 50 percent of their export earnings for their own import needs. In addition to customs duties, imported goods are subject to various charges ranging from 1 percent of the applied customs duty to 75 percent of the sum of c.i.f. value and other charges. Exports are classified broadly into (1) those that can be carried out freely, (2) those subject to permission, (3) those subject to license (mostly agricultural products), and (4) those subject to registration.

5. Since the floating exchange rate was initiated in the middle of 1981, the real exchange rate has become stabilized, starting from the last quarter of 1982. If the exchange rate of 1970, when inflation was moderate and the balance of payments situation favorable, is extrapolated to 1982 by means of an index of relative domestic absorption deflators, the resulting rate is very close to the actual exchange rate prevailing in 1982 (Table 1). Moreover, studies of Turkey's effective protection rate show that the divergence between the average exchange rate effectively applied to foreign payments and the official rate has decreased significantly. It seems reasonable to use the official exchange rate of 1981 and thereafter as inputs into the average exchange rate used for conversion.

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Table 1: REAL EXCHANCE RATE INDEX, TURKEY

(1970=100)

		197 0	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
(A)	Relative price index/ <u>a</u>	100.0	112.2	125.5	143.4	170.0	182.8	201.5	236.6	316.1	501.8	947.3	1246.6	1497.0
(B)	Nominal exchange rate/ <u>b</u> index	100.0	129.7	123.0	123.0	121.1	125.6	139.6	156.5	211.2	270.2	661.2	967.1	1413.5
(C)	Real exchange rate index (A/B)/ <u>c</u>	100.0	86.5	102.0	116.6	140.4	145.5	144.3	151.1	149.7	185.7	143.3	128.9	105.9
(D)	Average real exchange rate index for com- parable country group/ <u>c,d</u>	100.0	98. 0	100.9	109.4	117.5	118.0	115.6	119.4	121.1	127.2	130.4	124.6	118.9

/a Domestic absorption deflator index divided by U.S. domestic absorption deflator index.

/b Units of domestic currency per dollar.

<u>/c</u> Relative domestic absorption deflator index divided by exchange rate index. It shows the real exchange movement.

/d Lower middle income countries.

III. Conclusions

6. Turkish national accounts data are reliable and timely. Since late 1981, the official exchange rates have been reasonably close to the average rate effectively used for foreign payments. The average official rate can be used to convert the local currency GNP into US dollars.

WORLD BANK / INTERNATIONAL FINANCE CORPORATION

November 15, 1983

Please make appropriate changes on the report "Methodological Problems and Proposals Relating to the Estimation of Internationally Comparable Per Capita GNP Figures" with these new pages:

Page (v) replaces the old (v) of the "Summary of Findings and Recommendations" section.

Page (3) replaces the old (3) of Annex 8.

impact to the guidelines corresponding to exchange-rate converted GNPs, which will have to continue to be applied simultaneously to the countries for which PPP information is not yet available;

- PPP converted GNP numbers can be updated annually; and

 a satisfactory solution has been found for the application of the guidelines when the PPP-converted information and the exchange-rate converted information give different results.

Proposals for the Interim Period

xi. The adoption of PPP-converted GNP values even for a minority of countries will take time, and their universal adoption will, at best, take many years. Interim procedures must be adopted. The normal method will have to continue to rely on a suitable multiannual average of official exchange rates. However, <u>it is proposed</u> that divergences from that rate be justified more systematically in terms of an egregious difference between the official rate and the rate at which foreign exchange transactions are effectively taking place. The existence of such a difference will be established, when appropriate, in the course of regular intensive consultations between the central data-base management staff, the country economists and, when appropriate, the country authorities.

xii. In such cases, which must be defined very limitatively, <u>it is</u> <u>proposed</u> that the per capita GNP should be converted at a rate which approximates the rate at which foreign transactions have been actually taking place, taking into account not only the exchange rate and taxes and subsidies directly applicable to foreign exchange transactions, but also those applied to trade, including the tariff equivalent of quotas. These rates will have to be estimated with the help of all information available from country

- v -

Table 11.1: GROSS DOMESTIC PRODUCT AS A PERCENT OF GROSS NATIONAL PRODUCT, SELECTED COUNTRIES, 1981

01

	10
2	
Botswana	1.08
Swaziland	1.14
Zaire	1.05
Zambia	1.05
Congo, P.D.R.	1.13
Gabon	1.14
Liberia	1.13
Algeria	1.02
Bahrain	1.22
Iraq	1.02
Libya	1.09
Oman	1.20
United Arab Emirates	1.08
Chile	1.05
Guyana	1.10
Jamaica	1.11
Peru	1.06
Lesotho	0.59
Upper Volta	0.92
Jordan	0.85
Malta	0.95
Kuwait	0.75
Saudi Arabia	0.99
Syria	0.97
Turkey	0.98
Yemen, A.R.	0.87

Sometimes problems arise in estimating net factor income flows because of the difficulty of identifying the residents of a country. In some cases, workers' remittances are divided into factor income receipts and private transfer payments received. The latter are left out of the GNP of the recipient and are not deducted from the GNP of the originating country. THE WORLD BANK/INTERNATIONAL FINANCE CORPORATION

For MC Consideration Record

Nov. 21, 1983

OFFICE MEMORANDU

DATE: November 11, 1983

TO Managing Committee

FROM Anne 0. Krueger ack

EXTENSION 69001

SUBJECT Report on Research

The annual reports on research have heretofore been presented in early spring. This has had the double disadvantage that it was presented in the period when the load was greatest and that it necessarily could not present data by fiscal year. We are therefore switching to a report to cover complete fiscal years and to be presented in late fall or early winter. The attached report covers the transition period, completing the account of FY83 described in last spring's Annual Report.

Attached is a draft of the report which has benefited from comments from members of the Research Policy Council; OPS, ERS, and EIS departments; the Research Committee; and commentators from EIS, OPS, ERS and PBD. The report updates the information contained in the previous report on research, which was discussed by the Board in April, 1983 and which covered the period FY82 and FY83 first half, to cover the whole of FY83. It includes a section describing the work of the Research Policy Council. As presently scheduled, it will be circulated to the Board on December 5 for discussion on January 12.

Next year's report, that for FY84, will contain the conclusions reached to date by the Research Policy Council and will also focus far more than in the past on the output side of research, and upon its impact in the Bank and elsewhere.

Attachment

ERS/MC83-14

November 28, 1983

MEMORANDUM TO THE EXECUTIVE DIRECTORS

Subject: Bank Group Research Program

The attached report provides the tenth annual review of socioeconomic research of the Bank. It will be reviewed by the Board on January 12, 1984.

The report surveys all research sponsored by the Bank, except for research activities financed under loans and credits or conducted by technical consortia such as the Consultative Group on International Agricultural Research (CGIAR). It serves to update the March 1983 <u>Report on the World Bank Research Program</u>, discussed by the Board in April, which covered FY82 and the first half of FY83. The coverage is updated herein through FY83.

The next report, covering FY84, will mark a return to an entire fiscal year as its reporting frame. It is expected to convey the newlyformed Research Policy Council's progress in evaluating the impact of the research program and setting priorities for its evolution.

UPDATING REPORT ON THE WORLD BANK RESEARCH PROGRAM

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November 11, 1983

I. INTRODUCTION

The previous report on research, discussed by the Board in April 1983, described developments and accounted for expenditure during FY82 and the first half of FY83. $\frac{1}{}$ The present report serves to update the FY83 data to cover the entire fiscal year. An updating, rather than a full report, is presented to the Board now for two main reasons. First, it has been decided to return to a single fiscal year as the reporting period for research. By updating the information for FY83, the current report is intended to facilitate the transition to a reporting cycle by fiscal year, starting with FY84. Second, during the April discussions, as during earlier occasions, interest was expressed in a stronger reporting focus on the output and impact of the research program, rather than upon the level and allocation of the resources used by the program. Consideration is currently being given to how this may best be done. It is expected to present the FY84 report in this new format, in about twelve months from now.

II. THE RESEARCH PROGRAM IN FY83

FY83 was the first full year of existence of the new departments and research and policy units created by the FY82 reorganization of the economic analysis, research, and policy functions. The work of these new units was

^{1/} Report on the World Bank Research Program - Parts I and II, Report No. 4328, March 1983.
consolidated during the year as they completed many previously-initiated projects, defined their objectives, and started new projects. During FY83, also, a new Vice President, Economics and Research Staff (ERS), took up her appointment. The Vice President, ERS, chairs the newly-formed Research Policy Council, which is responsible for providing guidance to the Bank-wide research program.

Research topics to be given particular attention were identified, as described in the March 1983 Report on the World Bank Research Program. These topics include issues in the field of international trade and finance, the area of government intervention, the study of household economics, and the area of technology. New research projects, or grants to prepare new ones, have been approved in each of these areas. The main focus of research on poverty continues to be in policy studies in the several sectors and in the Living Standards Measurement Study. In addition, more Bank research will be developed along the lines originally recommended by the General Research Advisory Panel in 1979. The panel identified a particular advantage of the Bank in carrying out large, multicountry comparative studies of important development and policy issues. Several such studies, notably on the process of trade liberalization, on labor market and wage policy, and on the political economy of agricultural pricing, are now at various stages in the pipeline of research project design and approval.

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There were 21 new research projects approved by the Research Committee during FY83. Brief descriptions of those approved in the second half of FY83 are included in the Annex. $\frac{1}{}$

As shown by the data assembled in Table II.1, the level of expenditure on research in constant 1983 dollars was maintained at about \$16 million from FY78 to FY80. It increased by about ten percent in FY81 and remained stable at a new plateau of about \$18 million from FY81 to FY83. Over the same periods, other administrative expenditures increased steadily from year to year, so that, with the exception of FY81, the share of research in total administrative expenditures declined each year. From being 4.0 percent in FY78, the share declined to 3.4 percent in FY80, increased to 3.6 percent in FY81 and declined thereafter to reach 3.2 percent in FY83. Parallel movements occurred in the share of research in total analytical work; its share declined from about 23 percent in FY78 to about 16 percent in FY83.

Total expenditure upon research was programmed to be \$16.6 million in FY83. Its actual level was \$17.8 million, about one million dollars more than programmed, but the same level in real terms as in FY82. The constancy of the total masks changes in opposite directions of two of its components. First, the level of higher-level staff inputs to research declined by about three percent from FY82 to FY83. Second, and offsetting this decline, was a 18 percent real increase in expenditures from the external research budget--from \$2.8 million in FY82 to \$3.3 million in FY83. The external research budget had been underutilized by about one quarter during FY81 and FY82, so that the

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^{1/} Projects approved in the first half of FY83 are described in the March 1983 Report on the World Bank Research Program. For a complete description of the program through September 1983, see Abstracts of Current Studies, 1983.

Table II.1: RELATIONSHIP OF RESEARCH TO OTHER BANK ANALYTICAL WORK AND ADMINISTRATIVE BUDGET (Current US\$ million; percent of Bank analytical work)

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	\$	x 78 %	\$ <u>F</u>	¥79 %	\$ <u>F</u>	<u>¥80</u> %	\$ <u>F</u>	<u>¥81</u> %	\$	FY82 <u>a/</u> %	\$	<u>FY83</u> <u>a</u> / %
Research	9.4	23.0	10.3	21.8	11.4	20.4	15.8	20.5	16.6	16.0	17.8	16.0
Economic and Sector Work	25.5	62.3	28.5	60.2	34.7	62.2	48.5	62.8	63.5	61.4	69.5	62.3
Policy Work b/	6.0	14.7	8.5	18.0	9.7	17.4	12.9	16.7	23.4	22.6	24.2	21.7
Total Analytical Work	40.9	100.0	47.3	100.0	55.8	100.0	77.2	100.0	103.5	100.0	111.5	100.0
Memo Item: Research as a % of Bank Administrative Expenses	2	4.0	3.	.7	3	3.4		3.6	3	3.3		3.2
Memo Item: Research Expenditures in constant 1983 dollars	16	5.4	16.6		16.2 18.3		3.3	17.8		17.8		
Cumulative Inflation Factors	1	.745	1.608		1.419		1.157		1.073		1.000	

Notes: Source: PBD. Details may not add due to rounding.

a/ Revised. b/ Includes

/ Includes only ERS, OPS and EIS policy work.

11/10/83

increase in FY83 represents a return to a situation where actual expenditures are closer to planned ones than had been the case in previous years. At the same time, as can be seen from the data in Table II.2, the share of centrally approved research in total research increased from about 50 percent in FY82 to about 60 percent in FY83.

As discussed in the March 1983 <u>Report on the World Bank Research</u> <u>Program</u>, some improvements in the management of the research program were initiated in the first half of FY83. The first stage of a computerized management system covering research projects funded through the External Research Budget was completed during FY83, and the system came on stream at the beginning of FY84. When the second stage is completed in FY84, the system will also cover research projects funded from departmental resources. When fully operational, this management system will permit individual research projects to be tracked more efficiently from initiation to completion and will identify lagging ones and those likely to incur cost overruns. It will also permit the portfolio of research projects to be analyzed in several dimensions such as size, subject matter, country or regional focus, and extent of collaboration with local research institutes.

A second important innovation in FY83 was the institution of a "problem projects" list. By this means, research departments were strongly encouraged to bring stalled or lagging projects to completion. As a consequence, there were 22 research projects completed during FY83, rather more than double the average completion rate of recent years.

The reorganizational shift of research activity from ERS to the Operations complex was consolidated during FY83. Taking all research resources -- staff time plus the costs financed by both the External Research

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	F	¥76	F	¥77	F	¥78	F	¥79	F	¥80	F	Y81	F	¥82 b/	F	Y83 b,
	\$	ž	\$	2	\$	%	\$	%	\$	z	\$	%	\$	×	\$	%
Centrally Approved Research of which:	5.0	62.5	5.7	62.6	5.7	60.6	7.3	70.9	7.8	68.4	8.7	55.1	8.5	51.2	10.3	57.9
- External Research Resources - Staff Costs	(2.1) (2.9)		(2.0) (3.7)		(2.2) (3.5)		(2.9) (4.4)		(2.7)		(2.6)		(2.6) (5.9)		(3.3) (7.0)	
Departmentally Funded Research (stafftime costs)	3.0	37.5	3.4	37.4	3.8	40.4	3.0	29.1	3.6	31.6	7.1	44.9	8.1	48.8	7.5	42.1
TOTAL RESEARCH	8.0	100.0	9.1	100.0	9.4	100.0	10.3	100.0	11.4	100.0	15.8	100.0	16.6	100.0	17.8	100.0

$\frac{\text{Table II.2: RESOURCES } \underline{a}^{\prime} \text{ DEVOTED TO RESEARCH BY COMPONENT, FY76-83}}{(Current US$ million; percent of total research resources)}$

Note: Percentages do not add, due to rounding. a/ Includes all administrative costs. b/ Revised.

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11/9/83

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Budget and by departments -- into account, as is done in Table II.3, the share of ERS in Bank-wide research was about 48 percent, with the remainder in Operations. Of the share in Operations, the bulk (40 percent of the Bank-wide total) was in Operations Policy (OPS), with eight percent in Energy and Industry (EIS), and the remaining five percent in the Regions. This is very close to the pattern planned for in the reorganization.

The guidelines for the distribution of research among subject categories and the actual distribution in FY83 are presented in Table II.4. As has been stressed in previous years' reports on research, these guidelines are indicative only and the assignment of many research activities to one or other subject category is often difficult or arbitrary. Does, for example, research on urban transport systems fit most appropriately under category V (Transportation, Water and Telecommunications) or under category VII (Urbanization and Regional Development)? Because of such difficulties of classification, the estimates in Table II.4 need to be interpreted with caution. Nevertheless, even within the unavoidable margin of error in these data, there are notable shortfalls from the guidelines in the actual research expenditures on transportation, water, and telecommunications; energy; and urbanization and regional development.

The guidelines themselves, however, have been subject to only marginal changes since they were initiated during the early years of the research program. It seems appropriate now that they should be reconsidered in the light of new institutional priorities and the changing needs of the developing countries. In particular, the priority given to economy-wide policy and institutional issues and to international trade and finance relative to research on sectoral issues, as well as the distribution among

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· · · ·	Central	d Research		Departmentally Funded Research		Total Research				
 Ext	xternal Research			7 1		66	c.		Total P	occarab
	Budget Expenditure	Time a/	Costs b/	Costs	Time a/	Costs b/	Time a/	Costs b/	Costs c/	%
Operations Policy Staff										
Agriculture and Rural Development	301.4	2.0	349.5	650.9	6.0	1041.7	7.9	1391.2	1692.6	9.4
Country Policy	282.1	4.1	710.9	993.0	6.0	1058.0	10.1	1768.9	2051.0	11.4
Education	220.2	0.2	40.6	260.8	3.8	675.6	4.1	716.2	936.5	5.2
Population and Human Resources	195.1	0.7	129.4	324.5	1.3	225.1	2.0	354.5	549.6	3.1
Transportation and Water	246.0	1.8	320.6	566.6	2.7	475.9	4.6	796.5	1042.5	5.8
Urban Development	279.2	2.6	447.2	726.4	0.6	101.7	3.1	548.9	828.1	4.6
Projects Advisory	0.0	0.0	2.0	2.0	0.0	8.1	0.1	10.1	10.1	0.1
Total OPS	1524.0	11.4	2000.2	3524.2	20.4	3586.1	31.9	5586.3	7110.3	39.6
Energy and Industry Staff										
Energy	11.9	0.2	45.0	56.9	2.4	466.7	2.7	511.7	523.6	2.9
Industry	145.6	2.1	397.8	543.4	1.7	325.0	3.8	722.8	868.4	4.8
Total EIS	157.5	2.3	442.8	600.3	4.1	791.7	6.5	1234.5	1392.0	7.7
Economics Research Staff										
Development Research	1103.7	18.7	3761.9	4865.6	11.3 <u>d/</u>	1972.8	30.0	6034.7	7138.4	39.7
Economic Analysis and Projections	e/ 319.0	1.7	344.6	663.6	2.1	426.5	3.8	771.1	1090.1	6.1
Economics and Research Staff	140.7	0.8	162.1	302.8	0.3	48.1	1.0	210.2	350.9	2.0
Total ERS	1563.4	21.2	4268.6	5832.0	13.7	2747.4	34.8	7016.0	8579.4	47.8
Regions	285.7	1.1	242.8	528.5	1.3	293.1	2.4	535.9 .	821.6	4.6
Other f/	0.0	0.1	10.2	10.2	0.5	47.1	0.6	57.3	57.3	0.3
FY83 Total	3530.6	36.1	6964.6	10495.2	40.0	7465.4	76.2	14430.0	17960.6	100.0
Adjustments g/	-190.9	0.0	0.0	-190.9	0.0	0.0	0.0	0.0	-190.9	n.a
Net	3339.7	36.1	6964.6	10304.3	40.0	7465.4	76.2	14430.0	17769.7	n.a

RESOURCES DEVOTED TO RESEARCH, BY DEPARTMENT, FY83 Table II.3 (Current US\$ '000; staffyears)

NOTE: Details may not add due to rounding.

Data on stafftime are taken from the Bank's time reporting system. They include regular professional, <u>a/</u>

consultant, and Y.P. staffyears only.

Cost factors used are all-inclusive average unit costs by vice-presidency, b/

and do not differentiate between regular professional stafftime and consultant time.

Includes external research budget expenditure and total stafftime costs.

Includes 3.9 staffyears for work on the Living Standards Measurement Study.

Excludes routine work on commodity analysis and projections.

Young Professionals Program, and research done under collaborative arrangements with UN organizations.

FY82 accrual-related adjustments.

^{11/9/83}

		1982 Guidelines	Distribution of Actual FY83 Expenditures
I.	Development Policy and Planning	20	24.5
11.	International Trade and Finance	5	7.0
111.	Agriculture and Rural Development	20	16.0
IV.	Industry	10	13.3
۷.	Transportation, Water and Telecommunications	s 10	5.5
VI.	Energy	10	6.6
VII.	Urbanization and Regional Development	10	5.3
VIII.	Population and Human Resources	15	17.7
IX.	Other	-	4.1
	TOTAL	100	100.0

Table II.4: GUIDELINES FOR DISTRIBUTION OF BANK RESEARCH AMONG SUBJECT CATEGORIES (Percent)

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sectors, should be re-examined. Research priorities will be an important item on the agenda of the Research Policy Council.

III. THE RESEARCH POLICY COUNCIL

Following a study of research management in the Bank, conducted by the Organization Planning Department, the Research Policy Council was formed in August 1983 in order to provide leadership in the guidance, coordination and evaluation of all Bank research. The Council is chaired by the Vice President, Economics and Research, and its other members are the Vice President, Operations Policy; the Vice President, External Relations; a regional vice president; and the Vice President, Financial Policy, Planning and Budgeting.

Research in the Bank is conducted mainly in the three vicepresidential units, Economics and Research Staff, Operations Policy Staff, and Energy and Industry Staff, involving a total of eleven departments, each with a significant research responsibility. It is, therefore, a highly decentralized activity. However, about 60 percent of all research is subject to central approval by the Research Committee. The Research Committee has also provided guidelines (presented in Table II.4) for the allocation of research activity among subject-matter areas. Within those guidelines, the initiative in identifying research needs and in sponsoring and designing research projects lies with the departments.

The Research Policy Council will provide a greater degree of Bankwide coordination and planning. Its role will be to ensure that the program is well designed and that it addresses important problems, that it is carried out in a cost-effective manner, that its results are disseminated and applied, and that its overall effectiveness and impact are evaluated. In carrying out its responsibilities, the Council will be guided by the longstanding objectives of the research program: to support all aspects of the World Bank's operations; to broaden understanding of the development process; to improve the Bank's capacity to provide advice to member countries; and to assist in developing indigenous research capacity in member countries.

The Council started its work in August. Its first tasks are to redefine Bank-wide research priorities, to redefine the role and composition of the Research Committee in relation to the Council's own role, to set up procedures for evaluating the output and impact of Bank research in the main subject-matter categories, and to evaluate the effectiveness of present procedures for the dissemination of research results. It is anticipated that next year's report on research will contain the Council's initial assessment of the research program and its priorities for the program's further evolution.

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ANNEX I

Narratives of Research Projects Authorized by the

Research Committee in the Second Half of FY83

Twenty-one research projects were authorized by the Research Committee in FY83, of which 11 were added to the portfolio in the second half of the fiscal year.

The title, reference number, objectives, methodology, research team, and collaborators involved in each of these new projects are presented below, in numerical order:

Managing African Agricultural Development: Lessons from the Tanzanian Experience

Ref. No. 673-04

This study aims at producing a detailed review of the experience of governments and donor agencies in managing and supporting agricultural development in Africa during the postindependence period. Based on evidence from six countries, the analysis will attempt to discuss the nature of, the reasons for, and the consequences of the major policy and institutional choices with a view to identifying the type of changes needed to induce selfsustained agricultural growth. The objective is to stimulate a dialogue among scholars, donors, and African policymakers on how governments, acting with the support of donors in the area of agricultural management, can improve agricultural performance and prospects.

The genesis of the study is the World Bank's study on the agriculture sector in Tanzania. Detailed comparisons will be made in key areas of agricultural policy, constraints, and performance with regard to Tanzania and a number of other African countries chosen to exemplify the diversity of the continent with regard to geography, endowment of physical resources, economic structure, and agricultural policy.

The research has two parts: a series of background studies analyzing particular issues on a cross-country comparative basis and the simultaneous development of individual country profiles containing statistical and qualitative data for each country case. A final report will synthesize the findings of these studies, drawing conclusions about the types of policies that can induce agricultural growth and the necessary conditions for their implementation, including the implications for donor assistance.

<u>Responsibility:</u> <u>Development Research Department</u> and <u>Eastern Africa</u> <u>Projects Department</u> -- Uma Lele and Wilfred Candler, respectively, in collaboration with Ellen Hanak (consultant). A team of consultants will be involved in the preparation of background studies and country profiles. The project will involve close collaboration with the Bank's operational staff and with African government officials.

Completion date: September 1985.

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Demand for Personal Travel in Developing Countries

Ref. No. 673-05

The broad objective of this research project is to bring modern consumer theory to bear on the analysis and prediction of demand for personal travel in developing countries. Consumer demand analysis will be applied to urban and rural data to estimate models that can simultaneously serve as the basis for forecasting, policy analysis, and the assessment of the distributional consequences of changes in travel opportunity. By analyzing the determinants of travel expenditure and ownership of vehicles, projections of broad categories of demand for travel will be facilitated and a framework for discussion of issues of transport policy, such as pricing, taxation, subsidization, and provision of services and infrastructure, will be provided.

The study is expected to be based on data already available in selected developing countries, supplemented by surveys of travel behavior and household surveys. As data sources, the two types of survey are complementary; combined, they will allow for more specific and detailed analysis, as required by World Bank staff in their appraisal of projects in client countries, and be representative and reliable in forecasting demand.

Responsibility: <u>Transportation and Water Department</u>* -- Esra Bennathan; <u>Urban Development Department</u>* -- Alan Armstrong-Wright; and Development Research Department -- Gregory K. Ingram.

Completion date: June 1985.

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^{*} In FY84, Transportation and Water Department (TWD) became Transportation Department (TRP) and the Urban Development Department (URB) became Water Supply and Urban Development Department (WUD).

A General Algebraic Modeling System (GAMS)

Ref. No. 673-06

Mathematical modeling has developed into one of the major tools of strategic planning. Its potential power and relevance in sectoral and economywide applications have been demonstrated convincingly over the last decade in a research-oriented environment. Increasingly over recent years these techniques have been used as analytical tools in an operational context. The project explores a machine-intensive route to modeling and aims at a dramatic reduction in the time needed to develop a model, in the technical skills required, and in the total cost associated with existing modeling and data systems. GAMS is a system that provides a formal framework for the specification, manipulation, generation, and reporting of models and their associated data.

The two main components of GAMS are the definition of a uniform notation (formal language) to allow unambiguous representations of models and data, and a modeling system that automatically analyzes and translates models from one representation into another, as required by different solution processes.

Phase I of the project concentrated on language definitions, the integration of a relational data base into the system, and the automatic interface to commercial linear programming systems. Phase II was developed on the basis of responses and recommendations from users. The major thrust was in the area of large nonlinear models that use new concepts in automatic recognition of structures and the facilities of an extended data base. The project is now in Phase III which plans to make the system available for a

- 15 -

large number of computer and operating systems to permit wider distribution in developing countries. Phase III is jointly sponsored by the World Bank and the Communication and Computer Science Department of Exxon Corporation.

Responsibility: <u>Development Research Department</u> -- Alexander Meeraus and Arne Drud, in collaboration with Paul van der Eijk and Charlene Bashford of Exxon Corporation (consultants).

Completion date: June 1985.

Reports

- Bisschop, J., and Meeraus, A. "Matrix Augmentation and Partitioning in the Updating of the Basis Inverse." <u>Mathematical Programming</u>, vol. 13 (3) (1977):241-54.
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Department, 1982.

A Series of Technical Notes that addresses specific issues related to the development of GAMS is available from the World Bank's Development Research Department. Agricultural Pricing Policy in Eastern Africa

Ref. No. 673-07A

Governments intervene actively in agricultural input and output markets in pursuit of such goals as efficient resource allocation, food selfgufficiency, equitable income distribution, and resource mobilization. In an earlier research project, "Taxation and Pricing Policies in Rural and Urban Korea" (Ref. No. 672-61), the World Bank developed a methodology for exploring the consequences of alternative agricultural pricing policies for the Korean government's major goals. Unlike earlier work, this analysis is based firmly on the microeconomic behavior of producers and consumers and explicitly recognizes the importance of the farm household as a microeconomic unit. The present project applies this basic approach to the analysis of agricultural pricing policy in Malawi. Other applications are being undertaken in Cyprus, Senegal (see Ref. No. 673-08A below), and Sierra Leone.

Government intervention in agricultural markets in Malawi is both extensive and effective. The producer and consumer prices of the major food crops -- maize, groundnuts, rice -- are set by the government. The state is also responsible for exporting the major cash crops of tobacco and cotton produced by smallholders and for importing their fertilizer. The objective of the project is to explore the consequences of alternative pricing (including a movement towards free trade) and taxation policies for government revenue, producer incomes, consumer welfare, and food self-sufficiency.

Responsibility: Country Policy Department -- Lyn Squire, and Eastern Africa Regional Office -- Inderjit Singh.

Completion date: February 1984.

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Agricultural Pricing Policy in Senegal

Ref. No. 673-08A

This research project shares a methodology and will extend to Senegal in Western Africa the application of a previously developed model that explored alternative agricultural pricing policies in the Republic of Korea. The model has a microeconomic structure in that it uses simple models of farm household behavior as its building blocks. This allows for an investigation of the response by producers and consumers to externally induced changes in prices, derivation of aggregate demand and supply curves as the basis for analysis of alternative pricing policies, and precise measurement of the changes in welfare of selected socioeconomic groups following a particular market intervention.

In Senegal, where agriculture is the dominant sector of employment and a major contributor to gross domestic product and total value of exports, the government intervenes in its agricultural markets. The application of the model has potentially important implications for policymakers regarding questions about urban versus rural income distribution, parastatal efficiency, the role of private traders, the level of incentives to farmers, the budgetary cost of food subsidies, and the role of agriculture as the source of foreign exchange.

Responsibility: <u>Country Policy Department</u> -- Avishay Braverman and Jeffrey Hammer, in conjunction with Christopher J. Redfern and Joseph Baah-Dwomoh of the Western Africa Country Programs Department II and Western Africa Projects Department, respectively.

Completion date: June 1984.

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- Braverman, A.; Hammer, J; and Levinshon, J. "Balance of Payments, Government Deficit Reduction, and Agricultural Pricing in Senegal." Country Policy Department Discussion Paper. The World Bank, September 1983.
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Workshop on the Effects of Externalities on the Efficiency of Irrigated Agriculture in Developing Countries

Ref. No. 673-09

Research on irrigation has focused attention on the significant social costs incurred when the development of irrigation neglects physical interdependencies. The core of the problem is that private agents individually do not take into account the physical externality that dependence on a common resource imposes on them collectively when allocating the resources at their disposal. Regions where the neglect of environmental interdependence has begun to affect production include the North China Plain and the Indus and Ganges Plains of South Asia.

In developing countries, any of the schemes proposed to internalize efficiently the externality due to an aquifer or to its linkage with a surface water distribution system have not been applied to any significant extent, despite the incentive of significant benefits. The strategy of this workshop was to bring the conceptualizing theorists together with engineers and administrators with operating experience in irrigation systems to reexamine the problem and find solutions that can be implemented. The workshop was held at the World Bank between May 11 and 13, 1983, with 20 invited guests and a number of interested Bank staff participating. A staff working paper summarizing workshop discussion and conclusions will be forthcoming in the near future. A conference volume is expected to be available in about one year.

Responsibility: Agriculture and Rural Development Department --Gerald T. O'Mara.

Completion date: December 1983.

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World Bank Seminar on the Quality of Education in Developing Countries Ref. No. 673-10

During the past five years, the World Bank has conducted a series of research projects on educational quality in developing countries, addressing such phenomena as rising enrollments in the face of decreasing capital resources and higher expectations regarding the variety and sophistication of cognitive skills to be acquired from schooling.

More than 40 operational and research staff of the Bank participated in this seminar on the quality of education in developing countries between May 15 and 17, 1983, at Harpers Ferry, West Virginia. The seminar had been designed to reflect on what the Bank had learned from its research and lending programs to improve educational quality. Policy issues on school management, the financial implications of the specifications of alternative curricula, and the trade-offs between expanding schools or improving the quality of schools were explored in depth.

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As a result of the seminar, two products are anticipated: a paper on the status of educational quality in developing countries, to be written by staff of the World Bank's Education Department, and an edited volume on World Bank research on education.

<u>Responsibility:</u> <u>Education Department</u> -- Stephen Heyneman, with the contribution of Benjamin Makau, Examinations Unit, Ministry of Education (Kenya); Anthony Somerset, Institute of Development Studies, Sussex (United Kingdom); Henry Levin, Stanford University School of Education, California; Philip Altbach, State University of New York at Buffalo; Birger Fredriksen, University of Oslo (Norway); and C. E. Beeby, New Zealand Council for Educational Research, Wellington.

Completion date: The paper and summary volume are in process.

Analysis of the Tax Systems in Developing Countries: Applications to Pakistan and Mexico

Ref. No. 673-13

The immediate objective of this research is to study the tax systems of Pakistan and Mexico to identify the direction tax reform should take and the most efficient and equitable ways in which to raise extra revenue, as well as to provide information on the working of the current tax system of the sort needed for informed decisionmaking. The more fundamental objective is to develop a methodology of public finance so that similar studies can be undertaken in the future for a wider range of developing countries.

Although much economic theory and most empirical research has tended to treat these issues separately, modern developments in the theory of public

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finance explicitly link taxation, social objectives, production, and public expenditure. Although the theory has developed rapidly, it has only recently been applied in a systematic way to the analysis of the tax system of a developing country -- India. In the extension of this work to Pakistan and Mexico, each country's tax structure will be described in a form useful for policy analysis, which is a major task of considerable interest to the countries and the World Bank, and improvements will be identified, given some specification of each country's objectives.

The study will entail analyses of the impact of indirect taxes on prices (taking account of the taxation of intermediate goods), the implicit tax component in public enterprises, tariffs, personal income tax reforms, and market structure.

<u>Responsibility</u>: <u>Development Research Department</u> and <u>Country Policy</u> <u>Department</u> -- Pradeep K. Mitra and Lyn Squire, respectively, with the previous substantive contribution of David M. Newbery, currently of Churchill College, Cambridge University (United Kingdom), who will continue with the project as a consultant. Other consultants are Nicholas H. Stern, Ehtisham Ahmad, and Jesus Seade, Warwick University (United Kingdom). The British Social Science Research Council is cofunding part of the study.

Completion date: June 1986.

Collaborative Research with China (Phase II)

Ref. No. 673-14

After an initial exploratory phase, now completed, the World Bank and the Institute of Economic Research at the Chinese Academy of Social Sciences

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have agreed on a program of collaborative research. The program has two parts.

The first part will be an analysis of the system of enterprise guidance in China: the system as it worked in the past, the effect of current reforms, and the likely effect of proposed reforms. The main source of information will be interviews with key personnel in 20 enterprises. Pilot interviews have already been completed.

The second part is concerned with structural change. While studies of other aspects of the Chinese economy are contemplated in the future, during the present phase the emphasis will be on the study of consumption patterns in China in comparison with other developing countries. In parallel, an initial attempt will be made to compare the overall structure of the Chinese economy with other large countries.

<u>Responsibility</u>: <u>East Asia and Pacific Country Programs Department</u> and <u>Development Research Department</u> -- Edwin R. Lim and Gregory K. Ingram, respectively. For the Chinese Academy of Social Sciences, overall supervision of the program is being provided by Dong Furen, Deputy Director of the Institute of Economics. Gene Tidrick and William Byrd, of the East Asia and Pacific Country Programs Department, together with Chen Jiyuan and others of the Institute of Economic Research, are the principal researchers on enterprise guidance, while Benjamin King (consultant), Shujiro Urata, and Jacob Van Der Gaag of the Development Research Department, together with Li Xuezeng and others of the Institute of Economic Research, are the principal researchers on structural change.

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Supply Response of Aggregate Crops Output

Ref. No. 673-15

Price regimes in many developing countries discriminate substantially against agriculture. Discrimination takes the form of taxes on production or exports, or protection given to other sectors of the economy. Lending institutions, such as the World Bank, have argued that these discriminatory policies result in reducing agricultural output substantially from what it otherwise would have been, dampening agricultural, as well as overall, economic growth.

It is essential to provide a sound empirical basis for the World Bank's general position, as well as that of other development agencies, on the movement toward more rational agricultural pricing policies in developing countries. At issue is whether time-series data from an individual country provide a valid experiment for the measurement of long-run price elasticities, because countries generally pursue high or low price strategies for decades, with price peaks and troughs around these policies being maintained for only short periods. These price movements would not lead to the kind of investment response that would be seen if a country were to abandon its discriminatory stance for good.

Utilizing recent advances in the pooling of time-series and crosssectional data and in estimation techniques for variable coefficients, this study will estimate aggregate crop supply responses to output price changes, as well as to changes in input prices, from data of a large number of countries.

The assembled data base for about 90 industrial and developing countries will comprise, for example, data on agricultural output by

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commodity, producer prices, wage rates, expenditure on research and extension, fertilizer consumption and prices, tractors, literacy rates, as well as measures of agricultural potential. This data base will allow further analysis to be carried out on aggregate livestock production response and disaggregation by regions and products.

<u>Responsibility:</u> <u>Agriculture and Rural Development Department</u> -- Hans P. Binswanger, and <u>Economic Analysis and Projections Department</u> -- Ronald C. Duncan and Maw-Cheng Yang, in collaboration with Yair Mundlak (consultant) of Hebrew University (Israel).

Completion date: April 1984.

Agricultural Mechanization in Africa: Review and Prospects

Ref. No. 673-16

The driving forces of the mechanization process -- scarcity of labor, abundance of land and capital, elastic demand for agricultural output, and innovation and invention by the private sector -- are fairly well understood for most regions of the world. Yet, in Africa mechanization has proceeded very slowly. Hoe cultivation is tenaciously maintained in areas where labor appears to be very scarce, and successful mechanization is restricted to sharply defined areas. While recent reviews of mechanization have looked at management factors and constraints to the supply of farm machinery, this project will center on factors that determine the demand for mechanization, particularly agroclimatic and soil conditions, seasonality of crops and peaks in the demand for labor, and the final demand for agricultural products. In the study, mechanization is defined as the replacement of human labor by animal or mechanical power. The project aims at identifying persistent forces that govern the profitability of mechanized investments and that remain relevant when shorter-run impediments, such as sociocultural or institutional factors, could be overcome. The study will examine the evolution and extent of mechanization in twenty to thirty different areas of sub-Saharan Africa. The geographical areas selected for analysis include regions where animal traction has long been established, such as Botswana and Ethiopia; where animal traction spread shortly after World War II, such as the areas of groundnut cultivation in Senegal or of cotton cultivation in Mali; and regions where it has spread in the past 10 years, such as southwestern Upper Volta and central Ivory Coast. A similar comparative approach will be used in the case of tractors, with reference to their introduction in selected areas of northern Ivory Coast, Kenya, and Sudan.

Responsibility: Agriculture and Rural Development Department -- Hans P. Binswanger, with the assistance of Prabhu L. Pingali (consultant), and <u>Eastern Africa Regional Office</u> -- Inderjit J. Singh, in collaboration with Ives Bigot, Institut de recherches agronomiques tropicales et des cultures vivrieres (IRAT), Paris (France), and Surender Virmani and N. S. Jodha, International Crops Research Center for the Semi-Arid Tropics (ICRISAT), Hyderabad (India).

Completion date: June 1984.

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APPENDIX TABLE I

RESEARCH COMMITTEE MEMBERS 1/

Anne O. Krueger (Chairman)	Vice President, Economics and Research Staff
Bela Balassa	Consultant, Development Research Department
Jean Baneth	Director, Economic Analysis and Projections Department
Anthony Churchill	Director, Water Supply and Urban Development Department
Vinod Dubey	Chief Economist, Europe, Middle East and North Africa Regional Office
John H. Duloy	Senior Research Adviser, Economics and Research Staff
Ravi Gulhati	Chief Economist, Eastern Africa Regional Office
John Holsen	Chief Economist, South Asia Regional Office
Robert Picciotto	Director, Europe, Middle East and North Africa Projects Department
D. C. Rao	Assistant Director, Energy Department
Marcelo Selowsky	Research Adviser, Operations Policy Staff
Alexander Shakow	Senior Adviser, International Relations Department
Herman van der Tak	Director, Operations Policy Staff
Christopher Willoughby	Director, Economic Development Institute

1/ As of June 30, 1983.

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Appendix Table 2: EXTERNAL RESEARCH BUDGET FINANCIAL STATUS OF ONGOING AND RECENTLY COMPLETED PROJECTS 1/ (Current U.S. \$'000)

Category Title	Project Code	Department Responsible	Total Authorization <u>2</u> /	FY83 Actuals <u>3</u> /	Authorized FY84 and Beyond 2
I. Development Policy and Planning					
I.A. Income Distribution					
Evaluation of Latin American Data on Income Distribution	670-83C	DRD	141.2	-	-
Employment and Income Distribution in Malaysia	670-94	DRD	63.9	-	-
Evaluation of Asian Data on Income Distribution	671-08C	DRD	219.3	1.4	-
Income Distribution in Thailand (Phase I)	671-36C	DRD	43.0	-	-
Real Incomes and Economic Welfare of Selected Socio-Economic Groups in Colombia, 1964-78	672-05C	DRD/LC2	6.3	2.1	-
Studies on Brazilian Distribution and Growth	672-21	CPD/DRD	83.8	12.5	3.3
Income Formation and Expenditures of Poor Urban Households	672-57	URB	90.3	37.9	8.5
Resource Mobilization and the Household Economy in Kenya	672-96P	URB/CPD	9.8	6.6	3.2
Production Relations, Income Fluctuations, and Income Distribution in Agriculture	673-12P	AGR	9.5	-	9.5
Sub-total:			667.1	60.5	24.5
I.B. Planning, Growth, and Country Economic	Analysis				
International Comparison Project	670-68	EPD	66.1	-	-
Social Accounts and Development Models	671-27	DRD	197.5	3.0	9.6
A General Algebraic Modeling System (GAMS)	671-58	DRD	216.0	-	-
Research Support for the World Development Report	671-66	EPD	726.9	0.8	36.2
Growth, Poverty & Basic Needs: Development Policies in Sri Lanka, Kerala, and Punjab	671-72	DRD	80.0	-	4.0
Real Product & World Income Distribution	671-870	EPD	113.3	-	-
Real Product & Purchasing Power Comparisons	671-91	EPD	116.2	2.3	11.1
Research Dissemination: A Computable General Equilibrium Model of Turkey	672-04	DRD/EM2	24.9	-	-
Reduced Information Methods of International Real Income Comparisons	672-16	EPD	238.6	131.2	36.7
The Development of a SAM Basis for Planning and Modeling in Egypt	672-25A	DRD/EM1	110.0	16.1	18.7

Category Title	Project Code	Department Responsible	Total Authorization <u>2</u> /	FY83 Actuals 3/	Authorized FY84 and Beyond 2,
Multisector and Macroeconomic Models of Structural Adjustment for Yugoslavia	672-26A	DRD/EM1	158.9	47.6	75.2
Redistributive Aspects of Social Programs in Costa Rica	672-27P/1	D LAC1	22.0	-	0.7
Development of Social Accounts and Models for the Cyprus Five-Year Plan	672-38A	DRD/EM2	69.0	3.1	2.8
The Development and Extension of Macromodeling in Relation to Thailand	672-47	DRD/AEA/EPI	228.0	81.3	85.2
Development Paths for Oil Exporters: A Long-Run Macroeconomic Analysis	672-49	DRD	197.0	50.9	96.0
Taxation and Pricing Policies in Rural and Urban Korea	672-61	CPD	71.3	37.9	5.9
Economic Consequences of the Coffee Boom in East Africa: A Comparative Analysis of Kenya and Tanzania	672-65	EA1	215.2	73.0	120.6
Econometric Modeling of Investment and Saving in Korea	672-66	AEA	27.0	8.2	12.4
Collaborative Research with China (Phase I)	672-68	AEA/DRD	75.0	58.8	6.1
Tax and Contractual Arrangements for Exploiting Natural Resources	672-71	DRD	74.0	34.1	39.6
Evaluation and Estimation of National Accounts Statistics for Centrally Planned Economies	672-73	EPD	123.9	78.9	5.8
Cross-Country Analysis of Growth in Sub-Saharan Africa	672-75	WAN	18.5	17.9	0.6
Medium- and Long-Run Issues in Economies with an Exhaustible Resource-Based Traded Sector	672-77	DRD	110.0	31.0	78.9
Relative Prices in Hungary, Poland, and Romania	672-79A/0	EM1	8.4	-	0.9
A Computable General Equilibrium Model for the Ivory Coast	672-87A	DRD/WAP	34.3	47.7	-
Book on Modern Tax Theory for Developing Countries	672-92	DRD	63.2	12.4	50.8
A General Algebraic Modeling System (GAMS) (Phase III)	673-06	DRD	165.0	25.4	139.6
Analysis of the Tax Systems in Developing Countries: Applications to Pakistan & Mexico	673-13	DRD/CPD	350.0	8.2	341.8
Collaborative Research with China (Phase II)	673-14	DRD/AEA	245.0	28.5	216.5
Sub-total:			4145.2	798.3	1395.7
Total Section I:			4812.3	858.8	1420.2
II. International Trade and Finance					
Natural Resources and Planning: Issues in Trade and Investment	671-09C	DRD	165.1	9.0	0.1
Promotion of Non-traditional Exports	671-10	EAl	40.0	-	-
Linkage of Commodity & Country Models	671-28C	EPD	100.5	-	-

Category Title	Project Code R	Department esponsible	Total Authorization <u>2</u> /	FY83 Actuals <u>3</u> /	Authorized FY84 and Beyond <u>2</u>
Export Incentives in Developing Countries	671-35	DRD	179.0	9.6	3.3
Effects of Increased Imports of Manufactured Goods from Developing Countries	671-67	EPD	104.8	-	-
Key Institutions and Expansion of Manufactured Exports	671-68	EAN	93.0	11.6	19.0
Penetration of Industrialized Country Markets by Imports of Manufactures from Developing Countries	671-82	EPD	72.0	-	-
The Direction of Developing Countries Trade: Patterns, Trends and Implications	672-32	EPD	189.4	84.9	21.8
Agricultural Trade Patterns in an Expanding European Community and their Effects on Tunisia	672-33	CPD	188.6	66.0	74.4
Changes in Comparative Advantage in Manufactured Goods	672-41	DRD	131.0	26.2	61.1
Liberalization with Stabilization in the Southern Cone	672-85	DRD/LCN	374.6	149.2	225.4
The Sequencing and Phasing of Trade Liberalization Policies	672-97P	CPD	18.5	12.5	6.0
Assessment of Country Foreign Borrowing Strategies	673-01P 4	CPD	400.0	5.0	395.0
Study on Export Instability and Growth in Sub-Saharan Africa	673-18P	WAN/EPD	15.0	-	15.0
Total Section II:			2071.5	374.0	821.1
III. Agriculture and Rural Development					
Analytics of Change in Rural Communities	671-17C	DRD	239.0	1.7	-
Raising the Productivity of Small Farms	671-22	AGR	30.0	-	-
Country Case Studies of Agricultural Prices and Subsidies	671-42C	AGR	205.2	0.1	-
Agricultural Innovation & Rural Development	671-44	AGR	69.7	-	-
Programming and Designing Investment: Indus Basin	671-45	AGR	320.0	-	-
Distribution of Income through the Extended Family System	671-57	EM2/WAP	175.3	-	7.4
Evaluation of Food Distribution Schemes	671-80	AGR	107.0	2.5	18.4
Adoption of Farm Technology in Northern Nigeria	671-88C	WAP	162.0	1.6	-
India: Impact of Agricultural Development on Employment and Poverty (Phase II)	671-89	DRD	517.0	95.3	76.1
The Construction of Econometric Models for the Supply of Perennials: A Case Study of Natural Rubber and Tea in Sri Lanka	672-02	DRD	128.0	7.3	18.6
Land Tenure Study in Indonesia	672-08C	AEA(RSI-J)	10.0	-	-
A Framework for Agriculture Sector Analysis	672-11C	AGR	145.0	-	-

Category Title	Project Code	Department Responsible	Total Authorization <u>2</u> /	FY83 Actuals <u>3</u> /	Authorized FY84 and Beyond 2/
Agricultural Innovations in India: A District and Farm Level Analysis of Fertilizer Use and HYV Adoption	672-14	DRD	79.3	17.5	23.4
Improved Technology for Animal Powered Agriculture	672-17C	AEA(RSI-ND) AGR)/ 20.0	-	12.9
Food Policy Analysis for Practitioners	672-18	AGR	65.0	-	-
Agriculture Sector Modeling Conference	672-24A	EAP/DRD	30.0	-	28.6
The Impact of Agricultural Extension: A Case Study of the Training and Visit Method in Haryana, India	672-29	AGR/ASP	199.7	53.1	102.5
Production & Distributional Implications of Dairy Development Projects: Effects on Income, Consumption and Nutrition of the Poor	672-30	ASP	248.9	54.7	188.7
Project Design in Bank-Financed Agricultural Projects	672-31P	AEA	9.0	-	-
Market and Agricultural Policy Determinants of Rural Incomes	672-39	AGR	173.2	55.3	43.9
Canal Command Model for Project Design & System Operation in the Indus Basin	672-50A	ERS/AGR/DRI	63.0	-	-
Direct and Indirect Effects of Irrigation: Matar Taluka, Gujarat, India	672-51P & 672-84	AGR/ASP	103.2	61.3	17.1
Market Interventions in Agriculture: A Study of Rubber in Thailand	672-62C	CPD	40.0	3.0	-
Conditions for Sustained Farm Mechanization	672-67	AGR	132.0	53.7	-
Rural Development in the PRC (Phase II) (Dissemination Ref. No. 671-90C)	672-69	AEA	10.0	1.0	3.5
Agricultural Pricing Policies in Turkey	672-78A	AGR/EMP	50.0	21.9	19.9
A Manual of Agriculture Sector Programming Models	672-80A	AGR/DRD	68.6	22.7	36.1
Agricultural Household Models: Extensions and Policy Implications	672-82	CPD/EAN	20.0	6.4	13.6
The Political Economy of Agricultural Pricing	673-02P	VPERS	20.0	7.7	12.3
Managing African Agricultural Development: Lessons from the Tanzanian Experience	673-04	DRD	60.0	12.1	47.9
Agricultural Pricing Policy in Eastern Africa	673-07A	CPD	33.1	18.0	15.1
Agricultural Pricing Policy in Senegal	673-08A	CPD	41.6	8.1	33.5
Workshop on the Effects of Externalities on the Efficiency of Irrigated Agriculture in Developing Countries	673-09	AGR	20.0	20.8	-
Supply Response of Aggregate Crops Output	673-15	EPD	28.5	-	28.5
Agricultural Mechanization in Africa: Review and Prospects	673-16	AGR	85.2	5.8	79.4
Tenure, Security, and Farm Productivity: Case Study in Thailand	673-19P	AGR	9.0	-	9.0
Total Section III:			3717.5	531.6	836.4

Category Title	Project Code	Department Responsible	Total Authorization <u>2</u> /	FY83 Actuals <u>3</u> /	Authorized FY84 and Beyond 2,
IV. Industry					
Scope for Capital-Labor Substitution in the Mechanical Engineering Industry	670-23	DRD	128.1		-
Programming in the Manufacturing Sector	670-24	DRD	252.6	-	-
Industrial Policies and Economic Integration in Western Africa	670-87	DRD	95.0	-	0.8
A Comparative Study of the Sources of Industrial Growth and Structural Change	671-32	DRD	228.5	13.4	38.0
Small-Scale Enterprise Development	671-59	DRD	318.4	19.1	10.4
Managerial Structures and Practices: Public Manufacturing Enterprises	671-71	DRD/WAP/EMM	97.8	5.3	9.9
Appropriate Industrial Technology (Phase II)	671-77	DRD	102.9	-	-
The Sources of Growth and Productivity Change: A Comparative Analysis	671-79	DRD	66.2	-	· . •
The Industrial Incentive System in Morocco	671-85	EM2/DRD	132.5	9.0	0.1
Industrial Statistics	671-92C	EPD	123.4	-	-
A Statistical Analysis of the Efficiency of the Indonesian Manufacturing Sector	672-12	CPD	112.0	19.4	48.4
Programming in the Manufacturing Sector: A GAMS Application	672-22A	DRD	15.0	0.4	14.6
Analysis of Small-Scale Enterprise Lending in Kenya	672-34	DRD	17.0	-	3.6
Protection and Incentive Systems in the Turkish Manufacturing Sector	672-36A	EM2/DRD	75.9	13.3	26.4
The World Aluminum Industry Study	672-43A	EPD/DRD	13.0	-	-
Experimental Support Unit for Work on Industrial Incentives and Comparative Advantage (INCA)	672-44A	IND	243.5	135.2	52.1
The Acquisition of Technological Capability	672-48	DRD	359.0	73.1	220.0
Productivity Change in Infant Industry (Phase I)	672-86	DRD	165.7	80.1	85.6
Small-Scale Cement Study	672-94P	IPD/PAS	14.5	10.4	4.1
India: Study of Industrial Incentive System	673-03P	ASA	10.0	-	10.0
Total Section IV:		2	2571.0	378.7	524.0
V. Transportation, Water, and Telecommunica	tions				
Substitution of Labor and Equipment in Civil Construction	670-26	TWD	1001.1	-	-
Highway Design Maintenance Standards Study (Phase II)	670-27	TWD	1270.4	233.0	199.0
Pricing and Financing of Urban Public Services: Water Supply and Sewage Disposal	671-18C	DRD/AEA	60.1	-	0.5
Design and Monitoring Tools for Water Supply and Sanitation Technology	672-06C	TWD	35.0	-	5.9

Category Title	Project Code B	Department Responsible	Total Authorization <u>2</u> /	FY83 Actuals <u>3</u> /	Authorized FY84 and Beyond 2/
The Determinants of Railway Traffic, Freight Transport, and the Choice of Transport Modes	672-07	TWD	66.7	-	64.7
Rural Mobility and Communications Study	672-53P/D	TWD	10.0	1.0	7.8
Demand for Personal Travel in Developing Countries -	673-05	TWD	81.0	12.0	69.0
Total Section V:			2524.3	246.0	346.9
VI. Energy					
Standards of Rural Electrification	671-86	EGY	112.1	-	-
Pricing of Indigenous Energy Resources	672-15C	EGY	50.0	-	2.8
Investment Planning in the Power Sector in Indonesia	672-54A	CPD/DRD/AE	54.0	15.7	16.6
The Development and Application of a Minimum Standard Energy Demand Model for Developing Countries	672-63	EPD	105.1	20.9	19.2
The Welfare Implications of Eliminating Energy Subsidies in Indonesia	672-70	CPD	69.0	21.1	28.9
Adjustment in Oil-Importing Countries	672-74	DRD	179.2	31.0	145.4
Pricing and Taxing Transport Fuels in Developing Countries	672-83	DRD/TWD	197.9	41.5	156.4
Energy Conservation in Developing Countries	672-89P	EGY	12.5	11.9	0.6
Total Section VI:			779.8	142.1	369.9
VII. Urbanization and Regional Development					
Urban Public Finance and Administration	670-70C	DRD/AEA	80.6	-	-
Urban Traffic Restraint	671-20C	URB	267.5	-	-
Strategic Planning to Accommodate Rapid Growth in Cities of Developing Countries ("The City Study")	671-47	URB	1043.5	14.7	7.9
National Spatial Policies: Brazil	672-13	URB	430.6	23.3	3.1
Follow-up Survey of Rio Favela Dwellers	672-20D	DRD	9.0	1.2	-
Identifying the Urban Poor: A Case Study of Brazil	672-37	LCP	21.4	-	-
Housing Demand and Housing Finance in Developing Countries (Phase I)	672-46	URB	366.4	64.4	223.0
An Evaluation of Industrial Location Policies for Urban Deconcentration (Phase I)	672-58	URB	48.0	19.4	2.0
Participant-Observer Evaluation of Urban Projects	672-59	LCP	205.1	24.5	106.5
National and State Analysis of Indian Urban Development	672-64	URB	128.4	59.1	20.6

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Category Title	Project Code	Department Responsible	Total Authorization <u>2</u> /	FY83 Actuals <u>3</u> /	Authorized FY84 and Beyond <u>2</u> /
Development of a Model for Urban Land & Infrastructure Pricing, Costing,& Design	672-81	ASP	97.2	48.5	48.7
An Evaluation of Industrial Location Policies for Urban Deconcentration (Phase II	672-91 .)	URB	265.6	52.6	213.0
Developing Urban Productivity Measurements	673-11P	ASP	9.8	-	9.8
Singapore Area Licensing Scheme	673-17P	URB	16.0	1.2	14.8
Follow-up Impact Evaluation of the First Colombian Urban Project	673-20P	LCP	8.6	-	8.6
Total Section VII:			2997.7	308.9	658.0
VIII. Population and Human Resources					
VIII.A. Education					
Education and Rural Development in Nepal and Thailand	671-49	PHN	156.7	-	0.3
Economics of Educational Radio	671-54	EDC/PHN	69.7	-	-
International Study of the Retention of Literacy and Numeracy	671-55	EMP/DRD	380.5	-	2.5
Textbook Availability & Educational Quality	671-60	EDC/PHN	145.7	-	6.2
Education and Other Determinants of Farm Household Response to External Stimuli	671-78	PHN	30.9	-	-
The Labor Market Consequences of Educational Expansion	672-01	DRD	185.8	24.3	35.6
Mass Media and Rural Development	672-09	EDC/PHN	30.0	-	4.6
Diversified Secondary Curriculum Study (DISCUS)	672-45	EDC/LCP/EAD	P 420.0	194.1	6.0
Conference on the Consequences of Educational Expansion in East Africa	672-56C	DRD	20.1	9.9	-
Returns to Investment in School Quality in Rural Brazil	672-93P -	4/ LCP/EDC	52.7	10.8	41.9
The Effect of Education in the Informal Sector of the Economy	672-98P	EDC	25.0	7.5	17.5
World Bank Seminar on the Quality of Education in Developing Countries	673-10	EDC	18.3	18.6	-
Sub-total:			1535.4	265.2	114.6
VIII.B. Labor and Employment					
Labor Force Participation: Income and Employment	670-45C	DRD	122.1	-	-
Employment Models and Projections	671-06	DRD	144.2	-	-
Structure of Rural Employment, Income, and Labor Markets	671-30	DRD	142.6	-	2.1
Urban Labor Markets in Latin America	671-48D	CPD	58.1	-	-

Category Title	Project Code	Department Responsible	Total Authorization <u>2</u>	FY83 / Actuals <u>3</u> /	Authorized FY84 and Beyond <u>2</u>
Wage and Employment Trends and Structures in Developing Countries	671-84	CPD	163.2	6.0	11.2
Structure of Employment & Sources of Income by Socioeconomic Groups & Regions in Peru	672-40	LC1/DRD	20.0	-	-
International Labor Migration in the Middle East and North Africa	672-95P	EMP	10.0	9.3	0.7
Sub-total:			660.2	15.3	14.0
VIII.C. Population, Health, and Nutrition					
Population Growth and Rural Poverty	671-02	DRD	62.5	-	-
Case Studies of Determinants of Recent Fertility Decline in Sri Lanka and South India	671-70	PHN	110.0	6.4	7.5
Kenya: Health, Nutrition, Worker Productivity, & Child Development Studies	671-73	PHN/TWD	97.3 .	5.0	6.9
The Economics of Schistosomiasis Control	671-74	TWD	102.3	-	- 1
Determinants of Fertility in Egypt	671-81	PHN/DRD	179.0	6.8	-
Narangwal Population & Nutrition (Phase II)	672-03	PHN	94.5	4.6	8.1
Health and Rural Development in Nepal	672-10	PHN	137.0	4.8	3.7
Poverty, Fertility, and Human Resources in Indonesia	672-19	CPD	215.5	62.6	70.8
Policy Analysis of Fertility and Contraceptive Behavior in Bangladesh	672-23A/	C PHN	41.3	-	26.6
Policy Analysis of Fertility and Family Planning in Kenya	672-35A	PHN	61.2	25.7	0.2
Determinants of Fertility in Egypt: An Analysis of the Second Round of the Egyptian Fertility Survey	672-42	PHN	179.8	61.3	118.5
Impact of Selected Programs, Projects and Policies on Food Consumption and Nutrition	672-52P	PHN	15.9	-	-
The Determinants of Fertility in Rural Bangladesh	672-60	PHN	98.0	77.0	-
Demand for and Willingness to Pay for Services in Rural Mali	672-72	CPD	40.0	16.1	3.4
The Nutritional Effects of Projects Leading to Increases in Small Farmers Marketed Surpluses	672-88P	AGR/PHN	10.0	4.2	5.8
The Effectiveness of Family Planning Programs	672-90P	PHN	10.0	3.5	6.5
Sub-total:			1454.3	278.0	258.0
Total Section VIII:			3649.9	558.5	386.6

Category Title	Project Code	Department Responsible	Total Authorization <u>2/</u>	FY83 Actuals <u>3</u> /	Authorized FY84 and Beyond <u>2</u> /
IX. <u>Other 5/</u>			344.7	132.0	27.4
TOTAL:			23468.7	3530.6	5390.5
ADJUSTMENTS 6/	*	14	n.a.	-190.9	n.a.
NET:			23468.7	3339.7	5390.5

Note: Details may not add due to rounding.

- 1/ This table includes all "centrally approved" research projects, i.e., approved by the Research Committee, both ongoing and completed, that spent funds in FY83 and/or had authorizations for FY83 or FY84. Ref. No. 673-20 is the last project included in this report. Research projects completed prior to FY83 are not included in this table. For financial information on such projects, please consult World Bank Research Program, March 1983, Appendix Table 2.
- 2/ These amounts represent Research Committee authorizations as of October 19, 1983, and do not include
- contributions from outside sources.
- 3/ Year-to-date disbursements and outstanding commitments as of June 30, 1983.
- $\frac{1}{4}$ / Indicates research preparation grant in FY83; for which project funding was approved for FY84.
- 5/ Includes provision for the Bank Research Documentation Center (672-76), the External Research Program Information System (672-28), and the External Research Contingency and Reimbursement Funds (671-99 and 672-99).
- 6/ FY82 accrual-related adjustments.
- KEY: A Research Application
 - C Completed Project
 - D Discontinued Project
 - P Research Preparation

DEPARTMENT CODES:

Operations Policy Staff

- AGRAgriculture and Rural Development DepartmentCGRConsultative Group on International Agricultural ResearchCPDCountry Policy DepartmentEDCEducation DepartmentPASProjects Advisory StaffPHNPopulation, Health and Nutrition Department
 - TWD Transportation and Water Department
 - URB Urban Development Department

Energy and Industry Staff

- EGY Energy Department
- IND Industry Department

Economics and Research Staff

DRD	Development	Research	Department	
EPD	Economic Ana	lysis and	Projections	Department

Regional Offices

AEA	East Asia and Pacific Programs Department
AEP	East Asia and Pacific Projects Department
ASA	South Asia Programs Department
ASP .	South Asia Projects Department
EAP	East Africa Projects Department
EA1	East Africa Programs Department I
EA2	East Africa Programs Department II
EMP	Europe, Middle East, and North Africa (EMENA) Projects Department
EM1	EMENA Programs Department I
EM2	EMENA Programs Department II
LCP	Latin America and the Caribbean Projects Department
LC1	Latin America and the Caribbean Programs Department I
LC2	Latin America and the Caribbean Programs Department II
RSI-J	Resident Staff, Jakarta
RSI-ND	Resident Staff, New Delhi
WAP	West Africa Projects Department
WAP1	West Africa Programs Department I
WAP2	West Africa Programs Department II