

**MICRO IMPACTS OF MACROECONOMIC  
ADJUSTMENT POLICIES (MIMAP): PHASE II  
Integrative Report**

*Mario B. Lamberte, Gilberto M. Llanto  
and Aniceto C. Orbeta, Jr.*

**WORKING PAPER SERIES NO. 92-13**

**October 1992**

**Philippine Institute for Development Studies**

## Table of Contents

I.	Introduction .....	1
II.	Recent Macroeconomic Imbalances and Adjustment Measures .....	5
III.	Transmission Mechanisms: A General Perspective .....	15
	A. Transmission Channels and Mechanism .....	15
	B. Markets, Adjustment Policies and Transmission Mechanisms .....	17
IV.	Transmission Mechanisms and Hypotheses .....	24
	A. Social Services Sector .....	24
	B. Natural Resources and Environment Sector .....	33
	C. Agricultural Sector .....	39
	D. Industrial Informal Sector .....	43
	E. Gender Issues .....	48
	F. Impact of Government Regulations on Household and Firms .....	52
V.	Monitoring Systems .....	58
	A. Introduction .....	58
	B. Indicators .....	59
	C. Approaches and Issues in the Design of the Monitoring System .....	62
	D. The Proposed Monitoring System .....	63
Annex:	Terms of Reference and Principal Investigators .....	65
Bibliography	.....	69

## List of Figures

1.	Micro Impact of Macroeconomic Policies: General Framework .....	3
2.	Philippine Structural Adjustment Measures, 1986-1992 .....	6
3.	GNP Real Growth Rates .....	7
4.	Inflation Rate .....	10
5.	Estimated Income Elasticities of Health Care Expenditures: Philippines, 1985 .....	27
6.	Predicted Probabilities of Using Health Facilities: Philippines, 1985 .....	27
7.	Enrollment Rates by Age and Income Decile: Rural Philippines, 1982-1983 .....	29
8.	Enrollment Rates by Age and Income Decile: Urban Philippines, 1982-1983 .....	29

## List of Tables

1.	Balance of Payments Account, 1986-1991 .....	8
2.	Revenues, Disbursements and Deficits, 1980-1991 .....	9
3.	Budget Deficit and Interest Payments .....	9
4.	Consolidated Public Sector Deficit, 1985-1992 .....	11
5.	Monetary Indicators .....	11
6.	Relative Price Competitiveness Indices .....	13
7.	Dollar-Yield of 91-Day T-Bills .....	14
8.	Predicted Impact of Macroeconomic Policies on Relative Prices and the Rate of Depletion .....	34
9.	Predicted Impact of Forest Management Policies on Relative Prices and the Rate of Forest Depletion .....	36
10.	Predicted Impact of Mining and Mineral Management Policies on Relative Prices and the Rate of Mineral Exhaustion .....	37
11.	Predicted Impact of Coastal Resource Management Policies on Relative Prices and the Rate of Fishery Resource Depletion .....	38
12.	Result of Log-Linear Regression .....	39
13.	Local Production Effects of E.O. 470 Tariff Reforms .....	41
14.	Simple Average VAT Rates by Key Sectors .....	42

# **MICRO IMPACTS OF MACROECONOMIC ADJUSTMENT POLICIES (MIMAP): PHASE II Integrative Report**

*Mario B. Lamberte, Gilberto M. Llanto  
and Aniceto C. Orbeta, Jr.\*\**

## **I. INTRODUCTION**

Structural adjustment policies are economy-wide policies designed to induce efficiency and growth in the economy. In contrast, stabilization measures are those macro policies which are intended to correct fundamental imbalances in the economy, more particularly the fiscal and the balance of payments accounts. Structural adjustment policies like trade liberalization and market-oriented exchange rate policy will make for a more efficient and competitive economy while the take-off to the growth path is premised on the successful restoration of internal and external balance. Failing to do so will only lead the economy to more stagnation and retarded growth.

However, this does not mean that adjustment policies yield unqualified benefits. While internal and external balance may be restored through a package of adjustment policies, they may have differential impacts on households and firms. At the micro level, there may even be organized resistance against these policies because of the belief that livelihoods and survival are at stake as may be seen in the vehement opposition launched by urban workers and other organized groups to devaluation and fiscal restraint.

It is recognized that policy makers may introduce inappropriate package of adjustment policies which more discerning parties resist. But it may also happen that even with appropriate policies resistance will arise. The first case implies the need to completely do away with the harmful package; in the latter, design and recognition of adjustment costs will be needed to push for acceptance of policies that would propel the economy unto the path of efficiency and

---

\*This study was made possible through the financial assistance of the International Development Research Centre (IDRC). Special thanks go to Dr. Randy Spence and Mr. Jingjai Hanchanlash for encouraging the conduct of this study.

\*\*Vice President, Philippine Institute for Development Studies (PIDS); Executive Director, Agricultural Credit Policy Council (ACPC); and Deputy Director, ACPC.

sustainable growth. It may be that acceptance and promotion of such policies are hindered by the painful adjustments that hitherto protected sectors and the vulnerable will face.

The project, Micro Impacts of Macroeconomic Adjustment Policies (MIMAP), grew out of the concern that policy measures implemented to correct serious economic imbalances and induce the economy to efficiency and sustainable growth may have unanticipated and differential welfare impact at the household and firm level. To the extent that they have negative welfare effects on the most vulnerable groups of the society who may find great difficulty in coping with the new environment, then, policymakers must anticipate the nature and magnitude of said effects so that corrective measures may be appropriately designed.

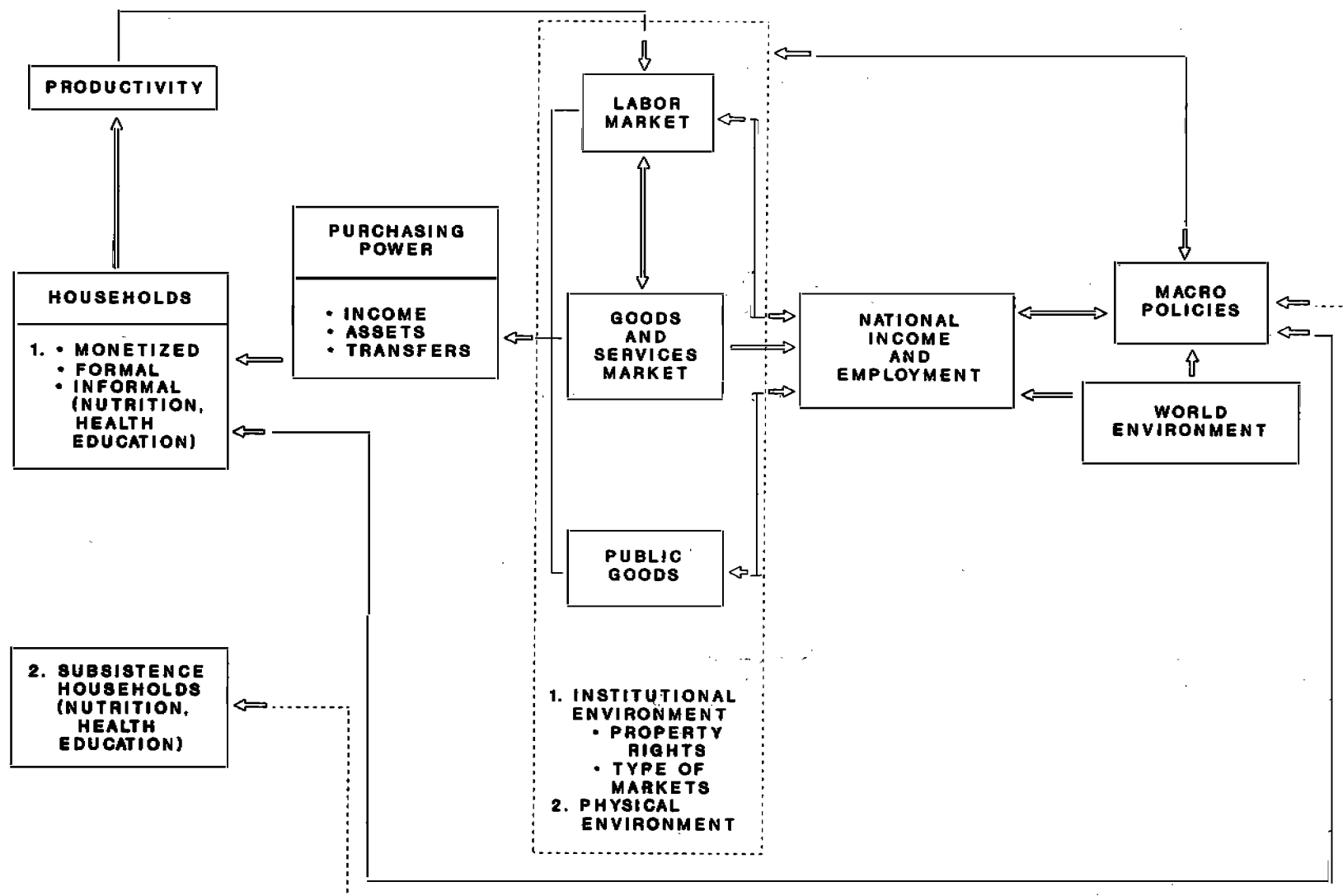
The paper prepared by Lamberte, Llanto, Lapar and Orbeta (1991) provides a general framework for analyzing the micro impacts of macroeconomic adjustment policies (Figure 1). In particular, macroeconomic adjustment policies impact on households and firms through three possible transmission channels namely factor markets, product markets and government expenditures, given the country's institutional structure.

During the workshop held in February 1991 in which the said framework paper was presented, the participants representing various sectors arrived at the conclusion that their knowledge of how a particular policy works its way through the various transmission channels and eventually impact on the households and firms is seriously inadequate. This knowledge is extremely important to provide policymakers with a concrete policy handle. It was then suggested that the next phase of the MIMAP project should focus on a few issues or sectors to make the analysis of the effects of specific policies on the welfare of vulnerable groups tractable. Aside from the effects of macro adjustment policies, effects of sectoral adjustment policies may be included in the analysis. The main objective of the research at this stage is to develop specific testable hypotheses on how adjustment policies affect the welfare of households, especially the vulnerable groups. The research at this stage must rely on available theoretical and empirical literature. This exercise is necessary to provide more focus to future research on the micro impacts of macroeconomic adjustment policies, which admittedly is a relatively new research area.

The MIMAP research project requires quantification of the welfare effects of adjustment policies at the household level, thus, it was felt necessary to identify a few welfare and intervening indicators that are highly sensitive to adjustment policies and can be regularly monitored. This is to be accompanied by an analysis of the quantity and quality of social services received by households in recent years, the factors determining them and how these will be affected by current and future adjustment policies.

Since the main concern of the MIMAP is to see how vulnerable groups are affected by adjustment policies, it was thought necessary to identify these groups to facilitate the selection of sectors or areas to be included in the research. There was a consensus among participants that the vulnerable groups are those that are heavily dependent on agriculture and natural resources for their livelihood and those that belong to the industrial informal sector. It was also recognized that adjustment policies may have gender-specific effects that ultimately impact on

**Figure 1**  
**MICRO IMPACT OF MACROECONOMIC POLICIES: GENERAL FRAMEWORK**



Source: Lamberte, Lianto, Lapar and Orbeta (1991)

the vulnerable groups. Thus, a more detailed analysis of these areas are included in the second phase of the MIMAP project.

There were other issues raised by the framework paper and suggested by the participants for closer examination. But the one given top priority is the regulatory framework, which is the embodiment of or a translation of policies into operational terms. Essentially, it defines the limits within which various markets can operate and, in effect, modifies the manner by which policies impact on the households.

Seven principal investigators were invited by the MIMAP Project Management Office to undertake studies on the following areas: macroeconomic analysis, agriculture sector, natural resources and environment sector, industrial informal sector, social services sector, government regulations and monitoring. The specific objectives of these studies are presented in Annex A. Each investigator worked with a network composed of individuals who are knowledgeable with the issues related to the respective topics.

This paper reports and integrates the major findings of these studies. It also draws on information or results of related studies to complement the findings of the seven studies.

The next section discusses the evolution and scale of recent macroeconomic imbalances and the adjustment measures adopted by policymakers. Section III provides a general perspective of the transmission mechanisms. Section IV discusses the transmission mechanisms in each selected areas and the major research issues/hypotheses that emerged from the discussions. The last section presents a system of monitoring the micro impacts of macroeconomic adjustment policies.

## II. RECENT MACROECONOMIC IMBALANCES AND ADJUSTMENT MEASURES

This section sets the tone for analyzing the micro impact of macroeconomic adjustment policies by discussing the scale and evolution of macroeconomic imbalances and by identifying certain options that might allow the country to deal with these imbalances. This sets out the constraints within which policy choices in specific sectors have to be made.

Since the Second World War, the Philippines already encountered seven balance of payments crises. For purposes of this paper, the period of analysis covers only the years 1986-1992, the administration of President Aquino, because first of all, many wide-ranging adjustment measures were introduced during this period and secondly, most of the effects of these measures will be felt in the next few years.

The Philippines suffered the worst balance of payments crisis in 1983-1985, when GNP growth rate averaged -4.8 percent. Upon assumption to power in 1986, the Aquino administration put together an economic program designed to achieve economic recovery in the short-term and sustainable growth in the medium-term. The real GNP growth rate target was set at 6.8 percent on the average for the period 1987-1992.

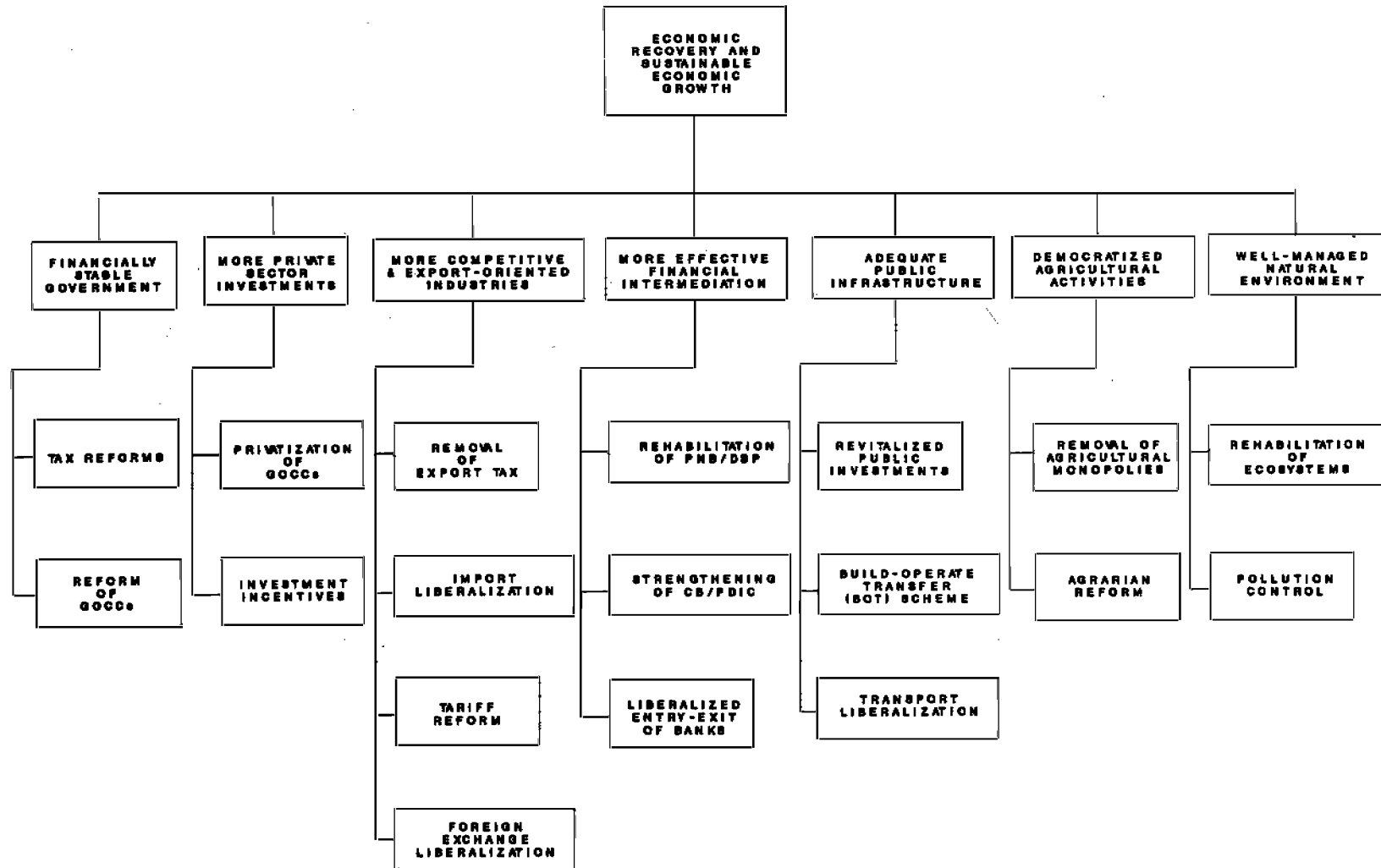
The Aquino administration undertook major reforms to deal with certain structural weaknesses of some areas of the economy (Figure 2). These reforms were supposed to attain specific objectives, such as financially stable government, more private sector investments, more competitive and export-oriented industries, more effective financial intermediation, adequate public infrastructure, democratized agricultural activities and well-managed environment, all of which are necessary to bring the economy into the path of economic recovery and sustainable growth. Most of the reforms were supported by financial assistance from multi-lateral agencies, such as the World Bank and Asian Development Bank, and development agencies of developed countries, such as the USAID and OECF, to reduce any short-run negative impact they might create in the process of implementation.

The economy showed strong recovery during the first three years of the Aquino administration, with real GNP growth rate averaging 5.5 percent (Figure 3). Unfortunately, the growth momentum was not sustained. Real GNP growth rate started to decline in 1989 and became negative in 1991. The first quarter growth rate for 1992 was only very modest at 2.4 percent.

External and internal factors accounted for the unsustained growth of the economy. Growth of developed countries slowed down and adversely affected demand for Philippine exports. This occurred at the same time when prices of imported commodities, particularly oil, increased in 1990, while prices of Philippine exports declined. The Gulf crisis significantly raised the oil import bill of the Philippines and also adversely affected the tourism industry. Conspiring with the unfavorable external environment were the series of natural calamities that occurred within a span of three years, inflicting severe damage to the productive capacity of the

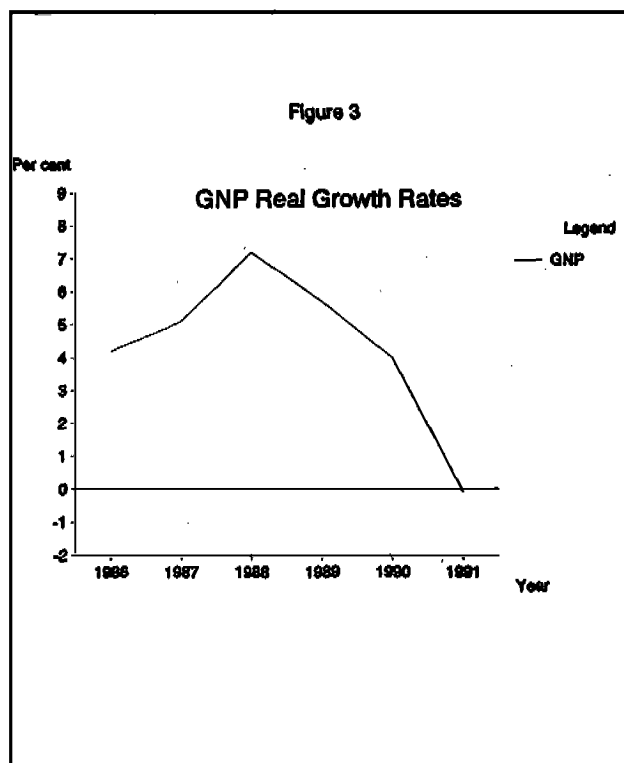


**Figure 2**  
**PHILIPPINE STRUCTURAL ADJUSTMENT MEASURES**  
**1986 - 1992**



Source: Ms. Cecilia G. Soriano (1992).

economy and several coup attempts launched by disgruntled military officers that shook the confidence of local and foreign investors in the economy. Perhaps, more important among the internal factors that contributed to the slowing down of economic growth was the delay in the implementation of much needed policy reforms in key sectors of the economy to correct structural weaknesses. For instance, the restructuring of the tariff system was implemented only in 1991 and its full effects can only be felt in mid-1990s because the tariff reduction is being phased over a five-year period. The liberalization of foreign investment started only in 1991 and it would take some time for foreign investors to take advantage of this new foreign investment environment. Some aspects of the tax reforms were approved by Congress only lately. The liberalization of bank entry and branching and of the foreign exchange market was undertaken only in the 1990s. The same is true of transport liberalization. Inappropriate exchange rate policy was also a big contributory factor. Specifically, the exchange rate policy pursued by the Monetary Authorities failed to maintain a realistic and competitive exchange rate, thereby undermining the competitiveness of Philippine exports.



Signs of external imbalance actually started to appear as early as 1986. Since that year the balance of payments worsened and became negative in 1990 (Table 1). This was due to the deteriorating current account position, which declined from US\$996 million in 1986 to -US\$2.7 billion in 1990. This, in turn, was caused by the deficit in the merchandise trade, which consistently widened during the period 1986-1990 from -US\$202 to -US\$4 billion. It means that export growth substantially lagged behind import growth. As a percent of GNP, the current account deficits surged to 6.1 percent in 1990 from a surplus of 3.4 percent of in 1986. The gross international reserves reached an uncomfortable level of US\$2 billion as of end-1990, well below the target level of US\$3 billion.

The Aquino administration started out with a very high budget deficit (as a percent of GNP) as a result of the carryover of the effects of the election spending, the assumption by the National Government of non-performing assets of government financial institutions, which was one of the reforms undertaken to rehabilitate ailing government financial institutions, and the expansionary fiscal programs adopted by the government to revive the economy. The government was relatively successful in reducing the deficits by introducing certain measures, such as those that resulted in an increase in total revenue effort (Table 2). However, current

Table 1  
BALANCE OF PAYMENTS ACCOUNT \1  
1986-1991  
(In Million US Dollars)

ITEM	1986	1987	1988	1989	1990	1991
<b>I. CURRENT TRANSACTIONS</b>						
Merchandise Trade	-202	-1017	-1085	-2598	-4020	-3212
Exports	4842	5720	7074	7821	8186	8839
Imports	5044	6737	8159	10419	12206	12051
Non-Merchandise Trade	757	0	-80	312	611	1351
Inflow	3791	3454	3592	4586	4842	5624
Outflow	3034	3454	3672	4274	4231	4273
Transfers	441	573	775	830	714	827
Inflow	445	575	778	832	717	828
Outflow	4	2	3	2	3	1
CURRENT ACCOUNT, TOTAL	996	-444	-390	-1456	-2695	-1034
% of GNP	3.4	-1.4	-1	-3.5	-6.1	-2.3
<b>II. NON-MONETARY CAPITAL</b>						
Long-Term Loans	815	159	-519	381	406	922
Inflow	2545	2598	2412	2797	4321	3613
Outflow	1730	2439	2931	2416	3915	2691
Foreign Investments	140	326	986	843	480	654
Inflow	186	439	1077	961	706	798
Outflow	46	113	91	118	226	144
Short-Term Capital	-814	80	-303	-89	19	369
Errors and Omissions	-102	-144	479	383	587	-150
NON-MONETARY CAPITAL, TOTAL	39	421	643	1518	1492	1795
Monetization of Gold	279	365	314	288	218	245
Allocation of SDR	0	0	0	0	0	0
Revaluation Adjustments	-72	-78	83	101	800	399
III. UNREMITTABLE ARREARS/ADJUSTMENTS	0	0	0	0	0	0
IV. OVERALL SURPLUS/DEFICIT (-)	1242	264	650	451	-185	1405

\1 After rescheduling and new money

Source: Central Bank of the Philippines

expenditures continued to grow as a result of rising interest payments on liabilities of the government corporations and financial institutions assumed by the National Government. In 1990, the fiscal deficit suddenly ballooned due to an unanticipated rise in interest payments that were brought about by a combination of high interest rates and greater volume of Treasury bills being sold, the increase in outlays for personal services as the number of employees increased and government salaries increased with the implementation of the Salary Standardization Law,

and advances related to the debt reduction program and subsidies to the Oil Price Stabilization Fund (OPSF).

The extent of the contribution of interest bill to the fiscal deficit may be appreciated more by looking at **Table 3**. If interest payments were netted out, the primary fiscal balance shows a generally increasing surplus.

**Table 2**  
**REVENUES, DISBURSEMENTS, and DEFICITS, 1980-91**  
(In Billion Pesos)

YEAR	REVENUE	AS % OF GNP	DISBURSEMENTS	AS % OF GNP	DEFICIT	AS % OF GNP
1980	34.7	13.13	38.1	14.41	3.4	1.28
1981	35.9	11.82	48.1	15.84	12.2	4.02
1982	38.2	11.39	52.6	15.68	14.4	4.29
1983	45.6	12.04	53.0	13.99	7.4	1.95
1984	56.8	10.77	66.9	12.69	10.1	1.92
1985	69.0	11.54	80.1	13.40	11.1	1.86
1986	79.2	12.88	110.5	17.98	31.3	5.09
1987	103.2	14.67	119.9	17.05	16.7	2.37
1988	112.9	13.72	136.1	16.54	23.2	2.82
1989	152.4	15.84	172.0	17.88	19.6	2.04
1990	180.9	15.97	218.9	19.33	37.2	3.29
1991	219.9	17.30	246.3	19.38	26.4	2.09

SOURCES: Department of Budget and Management  
Bureau of the Treasury

**Table 3**  
**BUDGET DEFICIT AND INTEREST PAYMENTS**  
(In Billion Pesos)

	TRADITIONAL BUDGET DEFICIT	INTEREST PAYMENTS			PRIMARY BUDG. SURPLUS	% OF GNP
		REGULAR	ASSUMED LIABILITIES	TOTAL		
1985	(11.1)	14.6	0	14.6	3.5	0.6
1986	(31.3)	20.9	.7	21.6	(9.7)	(1.6)
1987	(16.7)	24.7	12.2	36.9	20.2	2.9
1988	(23.2)	32.7	13.2	45.9	22.7	2.8
1989	(19.6)	41.4	13.3	54.7	35.1	3.7
1990	(37.2)	57.1	14.0	71.1	33.9	3.2
1991	(26.6)	69.8	13.6	83.4	56.8	4.5

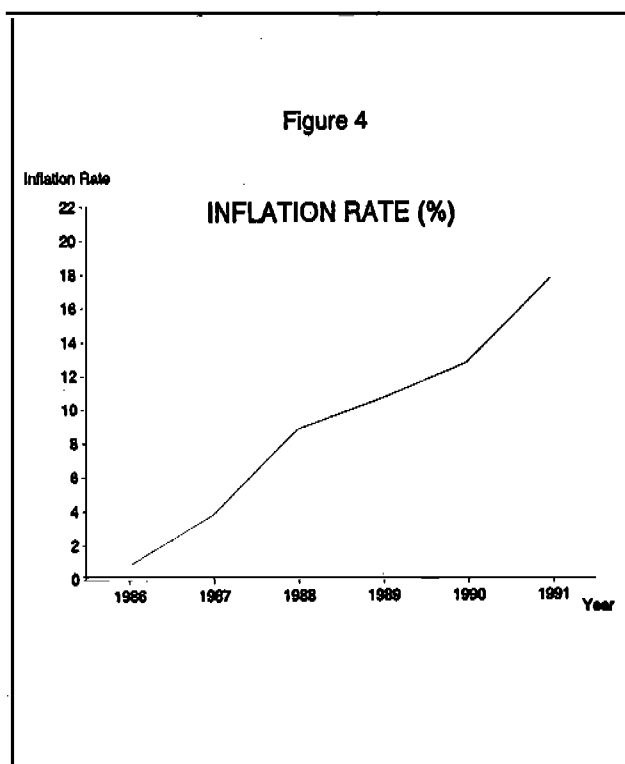
SOURCES: Department of Budget and Management  
National Economic and Development Authority  
Bureau of the Treasury

The consolidated public budget deficit (CPSD), which sums up the deficits of all the organizations within the public sector, tells a grimmer picture. After it tapered off in 1987 to 2.2 percent of GNP from a high of 4.8 percent in 1986, it began to rise in the subsequent years and posted at 5.4 percent in 1990 (Table 4). Aside from the deficit of the National Government which almost doubled in 1990, the huge deficits of the Central Bank, government corporations and the OPSF accounted for the big jump in the CPSD.

Part of the CPSD had been financed by money creation. As may be gleaned from Table 5, the growth of base money accelerated during the period 1986-1989. Although the growth rate declined in 1990, it is still high compared to historical levels, except 1989. The accelerating growth in the money supply, combined with cost-push factors such as severe weather disturbances and natural calamities and the third oil shock, exerted pressure on domestic prices. As may be seen from Figure 4, inflation rate accelerated from 0.8 percent in 1986 to 17.7 percent in 1991.

The macro imbalances above clearly called for drastic corrective measures, which the government promptly did. It first discontinued the IMF-supported EFF program because the targets were already unattainable, and negotiated for a new economic stabilization program that was approved and began in early 1991. The program includes the following measures: selective cut on expenditures; elimination of subsidies to the OPSF; increasing user charges of government corporations to improve their revenue position; increasing revenues through improved tax collection and new taxes; and allowing base money and broad money to grow by about 12 percent per annum. The refusal by Congress to pass new tax measures prompted the government to temporarily impose a 9 percent import levy.

So far, the stabilization program seems to have worked. The current account deficit dropped significantly from 6.1 percent of GNP in 1990 to 2.3 percent of GNP in 1991. Gross international reserves shot up to US\$4.5 billion at end-1991 (equivalent to about 3.2 months of imports) from US\$2 billion a year ago. The fiscal deficit was reduced to 2.1 percent of GNP in 1991 from 3.5 percent in 1990. Likewise, the CPSD dropped to 2.8 percent of GNP from 5 percent in the same period. The decline in the oil prices and appreciation of the peso acted favorably on the CPSD. The drop



in the 91-day Treasury bill rate from an average of 23.4 percent in 1990 to an average of 21.1 percent in 1991 also eased up the interest bill of the government. The annualized monthly

**Table 4**  
**CONSOLIDATED PUBLIC SECTOR DEFICIT, 1985-92**  
(In Billion Pesos)

	1985	1986	1987	1988	1989	1990	1991 Estimate	1992 Forecast
National Government	11.1	31.3	16.7	23.2	19.6	37.2	26.6	3.6
Major Corporations	8.1	6.8	3.2	-2	4.4	19.1	15.4	13.7
LGUs and Social Security Inst.	-0.9	-5.9	-5.3	-5.4	-4.2	-11.6	-8.9	-11.5
Gov't Financial Institutions	18.5	12	-1.3	-1.8	-3.3	-3.1	-2	-3.2
Central Bank	15.5	18.2	10.9	16.9	20.8	21.9	21.5	36.1
Oil Price Stabilization Fund	0	0	0	0	7.1	7.4	-11.5	2.5
Intersectoral Transfers	-16.1	-32.7	-8.7	-1.1	-5.3	-13.1	-9.6	-4.2
<b>Total Public Sector Deficit</b>	<b>36.2</b>	<b>29.7</b>	<b>15.5</b>	<b>29.8</b>	<b>39.1</b>	<b>57.8</b>	<b>31.5</b>	<b>37.0</b>
As a percent of GNP	6.1	4.8	2.2	3.6	4.1	5.4	2.5	2.6

Source: Department of Budget and Management

**Table 5**  
**MONETARY INDICATORS**  
(In Billion Pesos)

	1986	1987	1988	1989	1990	1991
1. Base Money /1	56.0	61.3	71.8	97.4	123.0	141.0
% Change		9.5	17.1	35.7	26.3	14.6
2. Reserve Money	50.0	56.9	67.3	92.9	108.7	129.4
3. Domestic Liquidity	141.1	159.2	198.5	253.9	300.5	347.1
% Change (end period)	6.2	12.8	24.6	27.9	18.4	15.1
Money supply	42.6	52.1	59.7	78.5	89.0	101.4
Quasi-Money	93.6	103.5	136.3	172.6	208.3	242.7
Deposit Substitutes	4.9	3.6	2.5	2.8	3.2	3.0

/1 Data reflects expanded coverage of deposit money banks and other changes in the classification of accounts

Source: Central Bank of the Philippines

inflation rates in the last months of 1991 and the first half of 1992 decelerated to less than 10 percent.

While the success of the recent stabilization program is welcome, still it inflicted high social costs. Moreover, it presents some uncertainties in the future. First, the correction of the current account balance was accomplished largely by dampening imports, instead of increasing exports, through a combination of tight monetary and fiscal policy that led to a recession. Since the program left the structure of trade unchanged, there is a big possibility that as growth resumes, import growth will far exceed export growth, and in a few years, another external imbalance is going to occur as happened in the past crises. Second, the fiscal deficit was put under control partly through steep cuts in capital outlays and partly through the temporary imposition of the 9 percent import levy. Given the poor state of infrastructure in the country, these cuts will have severe implications on the expected economic recovery. The recent elimination of the import levy presents another problem especially since Congress is not sympathetic to any new tax measures proposed by the executive branch. And third, the sharp decline in the demand for imports coupled with substantial foreign remittance and portfolio investment inflows caused substantial appreciation of the peso, thereby worsening incentives for exporters.

It seems that the new Administration is going to hang on to the same stabilization approach, i.e., tight monetary and fiscal policy, to avoid the "boom and bust" scenario. It means that a slower growth is to be expected in the next few years. The social costs of this approach will definitely be far greater than the previous occasions. It is well known that slow growth of the economy exacts a heavy toll on those occupying the lowest rung in the society. Between 1985 and 1988, when the economy achieved relatively impressive growth rates, poverty incidence only marginally decreased from 58.9 percent to 55.2 percent. In terms of actual levels, however, the number of families falling below the poverty line increased from 5.8 million in 1985 to 5.817 million families. This has certainly increased further between 1988 and 1991 considering the slowdown in the economy during this period. It only means that the poverty alleviation objective will never be achieved with a low growth rate.

The issue is whether there are other options that would put the economy into the high growth path without falling into the "boom and bust" scenario and extracts lesser adjustment costs during the adjustment process. Medalla (1992) and Intal (1992) have pointed out the social costs of stabilization could have been lower had the policymakers given exchange rate policy a greater role and reduce their reliance on fiscal and monetary tools. In fact, the exchange rate pursued by the government during the period 1986-1991 had weakened the peso's competitiveness *vis-a-vis* other ASEAN countries (Table 6).<sup>1</sup> There are several reasons why policymakers are averse to a major depreciation of the peso. One is that it would add to the losses of the Central Bank whose foreign liabilities greatly exceed foreign assets. It would also

---

<sup>1</sup>Medalla (1992) pointed out that Thailand's high growth of imports did not need a large depreciation of the Baht because it has been able to attract foreign investments in export-oriented firms.

add more burden to the fiscal sector since a greater proportion of external debts are public. Another reason is that it would create more pressure to adjust the legislated minimum wages, which would just wipe out the gains from large depreciation.

Since mid-1991, the Central Bank started to deregulate the foreign exchange market. Among the important measures adopted were the lifting of restrictions on the repatriation of foreign investment flows; allowing exporters to take out foreign currency loans from the Foreign Currency Deposit Units (FCDUs); and allowing exporters to keep and use freely 40 percent of their export proceeds. The expectation was that it would lead to a depreciation of the peso without the Central Bank having to intervene actively. However, the opposite has occurred, i.e., the peso has appreciated; with the appreciation accelerating towards the second half of 1991. The foreign exchange deregulation has contributed to this condition by easing the way for portfolio inflows and by inducing additional inflows in the form of a massive increase in overseas workers' remittances.

The response of the Central Bank was to try to prevent the appreciation of the peso by buying foreign exchange from the bourse. However, to meet the monetary ceilings under the current IMF stabilization program, the Central Bank had to sterilize its purchases by issuing its own liabilities. This has the effect of increasing money market rates, which all the more makes holding domestic financial assets very attractive. Medalla (1992) calculated the sum of the rates of interest and the peso appreciation which represents the rate of return to an investor who converts US dollars into pesos to buy Treasury bills and then reconverts back into dollars the proceeds from the maturing Philippine Treasury bills, and found this to be four times higher than the US rates (Table 7). So long as the Central Bank pursues the same strategy, that is, purchasing foreign exchange and sterilizing its purchases to meet the stabilization program's ceilings, foreign exchange inflows will continue and will cause more appreciation of the peso.

This clearly calls for an alternative approach to the current macroeconomic problem. The stabilization program was designed without having in mind the possibility of massive foreign exchange inflows occurring during a recessionary period. The massive inflows suggest that inflationary expectation has come down, and therefore the demand for real cash balances has increased. If this is not being accommodated by the Monetary Authorities because of some ceilings on monetary aggregates, real interest rate will likely increase, thereby discouraging investments. Thus, the appropriate measure seems to be to accommodate the increase in demand

Table 6

RELATIVE PRICE COMPETITIVENESS INDICES <sup>1</sup>  
(December 1980 = 100)

	Malaysia	Thailand	Indonesia
1986	86.32	96.15	111.92
1987	87.11	96.56	161.79
1988	93.73	96.82	164.98
1989	99.06	99.90	168.65
1990	98.00	95.15	162.81
1991	100.12	93.71	165.99

<sup>1</sup> Ratio of Philippine peso's REERI to those of selected ASEAN currencies. Over/Under 100 indicates that the Philippines is less/more competitive than the other countries.

Source: Central Bank of the Philippines



for real cash balances, which means that monetary aggregates should be allowed to grow higher than what is being prescribed in the current stabilization program. This would allow for higher growth and therefore the stabilization program will inflict less social cost.

For the gains of the stabilization program to be preserved, other macroeconomic adjustment measures should be put in place. One area is increased mobilization of domestic savings. This would involve improvement in tax collection and introducing new tax measures to deal with the gaps left behind by the 1986 tax reforms. Aside from improving efficiency in the use of resources, the government needs to increase its revenues to compensate for the sharp decline in capital outlays in the past year. More private savings could be mobilized by increasing the competitiveness of the banking system through bank entry and branch banking policy that is more liberal than the current policy, by eliminating intermediation taxes, and by developing the capital markets by automating the trading, clearing and settlements systems, establishing investor information services, by strengthening the supervisory function of the

regulatory body. The tariff reform program is already in place. But the possibility of accelerating it for some key items should be seriously considered, especially since the foreign exchange market is now more open than two years ago.

The discussions above brought out several key points. One is that when an economy is experiencing macroeconomic imbalances, stabilization measures are necessary. It must be well

understood that the adjustment to an equilibrium path inflicts some social costs. However, efforts could be exerted to lessen their social costs. This brings us to the next point, that is, some adjustments must be accommodated in any stabilization program whenever some unanticipated phenomenon occurs. In the case of the Philippines, it shows in the form of foreign exchange shocks coinciding with the severe drop in import demand causing some appreciation of the peso. And third, adjustment measures necessary to address structural weaknesses must be implemented. Delay in their implementation could undermine the sustainability of the growth process.

While policymakers, academics and the general public are aware of adjustment costs and the need to address this issue, little is known about the process of adjustment, the specific costs borne by different sectors (i.e., non-homogeneous groups), coping mechanisms, survival strategies - information that can help the government formulate appropriate policy handles and intervention.

Table 7

DOLLAR-YIELD OF 91-DAY T-BILLS  
(Quarterly Data)

PERIOD	RATE OF APPRECIATION (A)	INTEREST (91-DAY T-BILL) (B)	(A+B)	EXCHANGE RATE (P/\$)
1991.1	0.0%	25.3%	25.3%	28.0000
1991.2	0.2%	19.5%	19.7%	27.7955
1991.3	8.8%	19.7%	28.5%	26.9834
1991.4	4.1%	21.4%	25.5%	26.6183

Source: Central Bank of the Philippines

### **III. TRANSMISSION MECHANISMS: A GENERAL PERSPECTIVE**

An adjustment program designed to restore macro balances and to position the economy into a sustainable growth path is important. However, there may be strong resistance against its implementation in a developing economy like the Philippines because it can aggravate the economic circumstances of certain groups in the economy, especially the so-called vulnerable groups. The way the adjustment program is designed and implemented is critical to a successful launch of the economy to the growth path.

Adjustment policies have differential impacts on different groups of households and firms. When the government decides, for example, to pursue a tight budgetary policy as a component of the adjustment program the incidence of public expenditures (i.e. of public goods and services that remain after the budget cuts ) falls disproportionately over different income classes and types of households and firms. Based on their capacity (1) to cope with the slowdown in economic activity following the budget cuts and to take advantage of opportunities created by a new policy regime and (2) their ability to influence the distribution of public goods and services, households will experience divergent degrees of welfare loss and firms will face different growth and profit contours.

For these reasons knowledge of the transmission mechanisms of adjustment policies is important. The Lamberte, Llanto, Lapar and Orbeta framework paper provided a cursory outline of transmission mechanisms. This section tries to bring out more sharply the issues and to define in greater detail the intricate links and relationships between adjustment policies and households/firms and their implications for future empirical investigation.

#### **A. TRANSMISSION CHANNELS AND MECHANISMS**

It is important to distinguish between transmission channels and mechanisms. The channels are the routes or conduits through which adjustment policies are worked out and eventually impact on households and firms. The identified channels are (1) the product or goods market; (2) the factor markets, of which the labor market is a major element because here the vulnerable groups are participants and (3) government expenditure or the provision of public goods and services. Households and firms (i.e. economic agents in general) are both consumers and producers in varying capacities. They participate in the market economy through their behavior in factor and product markets and in their utilization of public goods and services ( from hereon, public goods). But factor and product markets and the distribution of public goods do not exist in a vacuum. They are strongly affected and determined by the parameters set by government policies and the regulatory/institutional environment, external factors and initial endowments.

What is little understood and empirically verified but which is more interesting is how adjustment policies affect households and firms. An understanding of the transmission mechanisms is more important because the design and implementation of a successful adjustment program hinges on it. The identification of the right policy handle is only possible if the

government were properly informed of the ramifications of specific adjustment policies, or of a combination of those policies, particularly on the incidence of those policies. It is relatively easy to identify what ails the economy but the prescription of the appropriate policy measures to address the malady is not a picnic, to say the least. To a very great extent, the correct diagnosis of the illness depends on an understanding of the illness and what gives rise to it. But equally important is to understand the likely impact of corrective or preventive measures, the routes or channels through which these measures will work and the mechanisms or manner in which these measures will affect households and firms whose welfare is the ultimate objective of adjustment measures/policies.

An important assumption in the study of transmission mechanisms is that rational economic agents participate in the market economy. The agents produce and consume in the market economy and in so doing, they are affected by policies, rules and regulations and interventions that are introduced by an important actor in the economy, the government. However, the MIMAP framework paper distinguished between subsistence and above-subsistence households who are affected differently by adjustment policies. The subsistence households engage in their own production and consumption activities which are largely outside the reach of the formal market economy, and perhaps, even by direct government intervention. Their interaction with the formal economy is quite minimal and is confined to activities that pertain to survival. While they may be the objects of various governmental and private initiatives, there is a great chance that they are not effectively touched or reached by these attempts.

This strong view has to be qualified. There is a large informal sector in many developing economies which for practical reasons participate in the formal market economy albeit in an "invisible" way. Households and even fledgling firms in the informal sector constitute the so-called "parallel" or "underground" economy many of whose members belong to the subsistence sector. Thus, to a certain extent, subsistence households and firms do participate in the formal market although such participation is somewhat weakened by their inability to access directly resources and services from formal institutions.

The literature identifies three transmission mechanisms, namely: (1) relative prices; (2) incomes or purchasing power and (3) access (or lack of it) to resources, like public goods.

The first set of transmission mechanism consists of (a) the relative price of factors and (b) the relative price of outputs. Economic agents respond to relative prices by changing the structure of demands for and supplies of inputs and outputs. When adjustment policies tilt relative output prices in favor of say, of a given good, resources shift towards that sector which produces the particular good and the sector is benefitted by the adjustment policies. The reverse happens in the sector that produces the goods which face a weak demand. This sector loses resources. Households, therefore, who possess skills that have become redundant because of the shift in demand for other types of skills induced by the increased production in the favored sector suffer a welfare loss.

The second transmission mechanism, that is, income or purchasing power, determines the consumption bundle of households while the budget constraint determines the production possibilities of firms. Household members who are laid off as a result say, of a reduction in

expenditures for infrastructure, immediately lose the capacity to demand goods and services and suffer the consequences of a reduction in well-being. Firms whose investment budgets, for example, are held back for fear of losing specific markets due to the change in macro policies, will not realize their profit and output potential and may become stagnant. The loss of markets for their goods can spell disaster for those firms, the capital-owners and workers alike.

By the same token, an adjustment program with a tight fiscal policy component will likely reduce the amount of public goods that the government "produces". Households who are dependent for their well-being on continuous access to decent health, education and nutrition services, will be immediately affected by the budget cuts. On the other hand, a reduction in infrastructure outlays will mean a drop in private sector employment and output with adverse impacts on households. In both instances, the lack of access to certain public goods will affect adversely the level of welfare (in the case of households) and the output and profit potential (in the case of firms). In the final analysis, the absence (or presence) of those public goods pursuant to specific adjustment policies will define to some degree the overall level of productivity of the economy which determines whether or not the economy can sooner move into the growth path.

## **B. MARKETS, ADJUSTMENT POLICIES AND TRANSMISSION MECHANISMS**

### **1. Impacts through Factor Markets**

The impact of adjustment on labor markets is not known a priori but it is determined by the households' and the firms' propensities to work and produce, respectively, as well as by their response to shifts in production incentives and correspondingly in relative wages in the labor markets. Relative wages determine the decision by households to work and the willingness of firms to hire labor. Adjustment policies that induce the hiring of more labor will be beneficial to households whose only marketable asset is their labor power. The adjustment policies must, however, contend with the structure of the labor markets which will condition the way labor will respond to the changes brought about by those policies.

If labor surplus is assumed, a demand deflation that is brought about by adjustment policies will add to the pool of the unemployed and underemployed as firms retrench workers. If a neoclassical labor market structure is postulated, then labor adjusts to what the market dictates and theoretically, there will be equilibrium in the product and labor markets. If a dualistic labor market is premised, then the modern sectors will behave differently from the traditional sector which if dominated by marginal and subsistence households may care less for adjustment policies that only indirectly impinge on their consumption and production activities. However, if the modern sector in the dualistic labor market suffers a decline in output and employment because of adjustment policies, the informal sector might act as absorber of the labor laid off in the modern sector. The unemployed will spill over to the traditional or informal sector depressing further labor's marginal productivity and thus, real wages. The decline in real wages will negatively affect their demand for wage goods and their productivity declines over time.

Horton *et al.* (1991) observed that many adjustment programs focus on changes in the composition of output. Expenditure-switching policies change relative prices of goods and induce the production of exportables and importables and a reduction of the production of non-tradables. This will involve a reallocation of resources used in the production of the concerned goods which include factors of production such as labor. The reallocation of resources following the new incentive structure created by adjustment policies will bring about employment shifts from non-tradables towards importables and exportables.

On the other hand, the evidence for this proposition is not as conclusive as may be expected. This is because growth in output in the tradables sector can also be possibly brought about by the reallocation of resources other than labor. Horton *et al.* (1991) further noted that changes in relative wages due to adjustment policies are even more difficult to predict with certainty. In particular weak labor demand may lead to changes in formal/informal relative wages, and changes in relative wages by skill or education group, which may crosscut changes in sectoral relative wages. However, given these qualifications, employment shifts from non-tradables towards tradables and changes in relative wages yield important information on the impact of adjustment policies on the labor markets.

An important phenomenon is the change in labor participation rates and the growth of the informal sector. Horton *et al.* (1991) distinguished between the added or the discouraged worker effect and considered which will predominate. The added worker effect occurs when the fall in income during recessions causes households to increase labor supply in order to at least maintain their current level of consumption. The discouraged worker effect is observed when the fall in wage rates during recessions induce households to reduce labor supply. One qualification that may be made, however, is that the "discouraged" workers may seek employment in the informal sector where there is relative ease of entry and exit. They do not reduce their labor supply but compete with those already in the informal sector. Thus, the weak labor demand in the formal sector causes lay offs which force labor to seek self employment, mostly within the confines of the informal sector. The entry of newly-informal workers enlarges the parallel sector as they join those already in the sector. There may be movements between employment and self employment as workers adjust to the changing labor market demands with corresponding impacts on their level of incomes and consumption.

Following Demery and Allison (1991), we can point out that the impacts of adjustment policies are transmitted to households and firms depending on their responsiveness to labor market conditions. Wage rigidities created by such institutions as labor unions, minimum wage legislation and the political power of the urban working class may worsen the situation of declining output and employment as firms choose to retrench workers or freeze the hiring of new workers because of the costs that the rigidities entail for the firms. Labor demand falls and employment and output contract. Those unable to find jobs in the formal sector seek informal employment in both rural and urban areas. However, one big assumption here is that wage rigidities are effective: in the case of minimum wage legislation, it is observed by most, if not all, of the firms. From another vantage point, the contraction of the goods market has serious implications on the quantity of labor demanded and supplied, as well as the relative wages in the labor market.

The way the labor market behaves has in turn some ramifications for the course of adjustment in the goods or product market. As real wages fall, there may be an incentive to hire more labor in the expanding sectors. Those, however, who fail to find urban formal employment may either choose to stay in the urban sector as informal workers or go to the agriculture sector and enter subsistence farming.

An important dimension of the impacts of adjustment policies working through the labor markets is the welfare implication of shifts in the composition of output and employment. A change in the policy environment gives rise to losers and gainers in society. The losers tend to be owners of fixed factors that are employed in those sectors that will contract as a result of the adjustment policies. For example, the laborers, especially the older members of the work force, may resist the changes brought about by the new policy environment. It may be because of the difficulty of finding a new job which is compounded by the fact that the retraining that they will have to undergo to be competitive in the new labor market environment is expensive and time-consuming. Capitalists may also resist the changes in view of their inability to recover immediately sunk investment costs in sectors that will decline as a consequence of the new policy environment. It is clear that viewed from this context, adjustment policies and the costs they impose on economic agents must be thoroughly understood for intelligent policymaking and government intervention in the market economy.

By the same token, owners of capital just like labor are affected by the change in the policy environment and the rules of the game. It is recognized that a primary objective of the adjustment package is to direct the economy as quickly as possible to the growth path with the least pain or cost possible. The application or implementation of the adjustment policies will change the incentive structure of the economy and as earlier mentioned, there will be corresponding shifts in the composition of outputs and utilization of factors of production.

How capitalists are affected by the changing business and economic environment and how they respond or cope with the changes are also as interesting and important issues to tackle as labor adjustments. The market economy's engine of growth is private capital and entrepreneurship and one sure way towards economic stagnation and decay is for capitalists to lose their desire to invest and produce real goods and services. One way to assess the impacts of adjustment policies will be to take a look into the investment decisions and expectations of capitalists.

Uncertainty and risk perception over what adjustment policies entail and how the implementation of adjustment policies sometimes becomes a drawn-out process, dampen the willingness to invest and expose more risk capital into new but promising ventures. The situation is worsened if the executive branch of government decides to implement a package of adjustment policies which has not been the subject of consultation and/or coordination with the legislative branch of government, the Congress. Thus, we may have government speaking in two distinct and mutually exclusive voices which only tend to confuse investors and discourage risk taking. A contrary view, however, is that capitalists take the intramural among these two branches of government as a given and then proceed to lobby with both branches to maintain the protectionist bias of certain policies which are the targets of reform in the adjustment package

or to secure access to resources which they will need in view of the adjustment costs imposed by the new set of policies.

This is not to say that all adjustment policies will have a dampening effect on investment decisions. On the contrary, the new set of policies may in fact create an incentive structure for firms to move into their areas of comparative advantage. In short, efficiency considerations are introduced by the adjustment package and progressive-minded capitalists take advantage of the potential offered by new businesses or industrial ventures. More investments into the growth areas arise and thus, in the final analysis output is enlarged and employment increases. But this event is a process in time and notwithstanding the fact that there may be clear and tangible gains in the future, capitalists may be overwhelmed by the inertia of the prolonged protectionist character of macro and industrial policies. The perverse outcome may be the resistance to change not only by the clear losers in different industry groupings but also by those who expect to gain from the new policy environment! The irony is that the latter group who stands to gain retreats from the growth path by investing less, adopting a wait-and-see attitude or parking the investible surplus in non-productive but surely profitable government securities.

If a decline in the level of investments occurs, output and employment contract and this phenomenon will raise "the political and social costs of adjustment and increases the odds that the political system will not be able to maintain stable policies and adequate business conditions" (Blejer and Ize 1989). Uncertainty and apprehension over the political and social costs of adjustment policies so paralyze investors that they may stop from investing altogether and this leads to further contraction in output and employment.

The behavior of capitalists is determined to a very great extent by the changes in relative rewards or in a generic sense, relative prices of capital to labor. Macro adjustment policies change relative prices and depending on the level of economic development, initial factor endowments, technology and the characterization of product and factor markets, one factor becomes more intensively used and rewarded over the other. While there is an impact between classes of factors (i.e. labor and capital), there is also an impact within a class of factors because of the heterogeneity that is all too present in the real world. If capital were the factor used intensively in the production of tradables then it will enjoy bigger rents and consequently, there will be a reallocation of capital away from the non-tradables into tradables. On the other hand, if the tradables are the labor-intensive goods, the rewards go to labor. In either case, gainers and losers surface: gainers will support the adjustment package while losers will ambush or thwart any attempt to introduce a new policy regime and incentive structure.

Adjustment policies have short-run and long-run effects on households and firms. Budget cuts imposed by the government can have immediate adverse impacts especially if these are taken from expenditure items like food subsidies. The impacts of other adjustment policies like trade liberalization are felt by economic agents in the long run. However, exogenous shocks continually buffer the economy at the same time that adjustment policies are being implemented. The simultaneous occurrence of exogenous shocks and an adjustment program makes it difficult to distinguish the impacts exerted by adjustment policies from those created by the exogenous shocks. The difficulty in isolating the source of impacts and estimating the extent and magnitude of such impacts together with the interaction between the shocks and the adjustment policies

makes analysis a nightmare. But given the rather profound implications of a vacuum in knowledge about the ramifications of adjustment policies at the level (i.e., households and firms) where it matters most, an investment in this type of study is almost priceless.

## 2. Impacts through Product Markets

This brings us to an equally important point which has been so far only implicitly brought into the discussion and that is, the impact on the product or goods market which may be verified through a closer scrutiny of household and firm behavior in an era of adjustment. We are forewarned, however, by Behrman and Deolalikar (1991, p. 292) that while economic theory provides a framework for analyzing the links between micro units (i.e. households and firms) and adjustment policies, the number of such links and their complex interactions make it virtually impossible to predict a priori the impact of adjustment policies. In addition, little else is known about lags in the adjustment process, the complexities of substitution and feedback both on a micro and macro level not to mention the adverse implications to intelligent analysis of limited, and sometimes inappropriate data. The same thought was expressed by Blejer and Chu (1990) who pointed out that the channels through which adjustment policies affect households (particularly, the vulnerable groups) are quite intricate and that the observable results may not reflect the characteristics of the dynamic process through which various policies operate. Nevertheless, an excursion into the behavior of households and firms in the product market during a period of adjustment deserves the undivided attention of researchers.

Adjustment policies change the structure of incentives and stimulate the reallocation of resources between sectors and activities. Those firms or industries that used to benefit from the protection that is now being eliminated in the course of structural adjustment will block such a course of action. It is understandable because resource reallocation will entail some costs. The reality is that movement between sectors is not instantaneous and costless. Failure to influence the course of structural adjustments on the part of protected industries or firms may mean an exit from a heretofore profitable rentseeking activity. Adjustment policies are intended to introduce more competition in the different markets and so for efficiency considerations should be welcome. However, adjustment policies have differential impacts on households as well as firms. There are vulnerable firms as well as vulnerable households and it is important to have this in mind when designing adjustment packages.

A reason for the vulnerability of firms may be their inability to grow and adjust to market realities in the course of time. Too often protectionist policies which are supposed to lend them some measure of strength in the short term so that they may become competitive and viable in the long run, served only to create more dependence on and attachment to these protectionist policies to the detriment of consumers and the competitiveness of the economy's industrial sector.

Adjustment policies impact on households and firms in the product market channel through relative price changes. Expenditure-switching and expenditure-reducing policies change the ratio of tradable to non-tradable prices. This is an immediate signal to households and firms alike that the economy has to undertake a different course of action compared to what was done in the pre-



adjustment period. Households and firms are then forced to take a critical look into the resources and skills that may be brought to bear on the new economic environment. In this regard, a great deal of the reaction and behavior in product markets will depend on the characterization and organization of production and distribution in the product or goods market.

Monopolistic and oligopolistic firms/industries will be keenly observing the signals sent by adjustment policies and may cooperate with other groups to resist or deflect the winds of change. Indeed these firms and workers may share the same objective and the same conviction to resist or weaken the adjustment package although the latter are motivated differently. The resistance to change may be due to the threat that adjustment policies impose against the workers' jobs and sources of livelihood. Workers do not perhaps realize that the competitive nature of adjustment policies will serve them well in the long run as monopolists and oligopolists lose their profitable rentseeking opportunities. Or if workers do realize the long term advantages of a more competitive business environment, they might consider the short-term pain of losing jobs and livelihoods as too much to endure.

### 3. Impacts through Public Goods and Services

Adjustment programs typically involve belt tightening. Thus, budget cuts are imposed in order to address the internal imbalance that provides fuel to inflationary pressures. It seems that the easiest (i.e. less politically threatening) cuts to accomplish are those expenditure items that belong to the social service category, such as health, education and nutrition and the capital expenditures (to some extent). We qualify budget cuts in capital expenditure items because the self-serving character of local politics precludes a drastic reduction in capital outlays. Politicians must be able to show tangible proof of "service and accomplishments." A more serious reason, perhaps, for partial cuts only for capital expenditure is that too drastic a cut in these items will diminish real productive capacity over the long term and bureaucrats are well acquainted with this. Furthermore, a drastic reduction in public spending for capital goods and other infrastructure outlays brings adverse impacts because of the immediate shrinking of the local economy that follows.

The drift of our argument here is that in an era of adjustment the government makes the difficult choice of what expenditure items to cut and what subsidies to withdraw. The first things that go under the knife are those items that have no strong constituency and these are, as mentioned before, social service items. However, this view does not seem to square with reality. Aware of the adverse impacts of budget cuts in social service items on human capital formation and consequently, on the long term productivity of the population, policymakers and bureaucrats have strived to maintain some modest budgetary appropriation for these items. Politicians are in constant touch with their constituency who continuously lobby for their own respective interests. Bureaucrats are also aware through their own information and surveillance systems of the various demands for maintenance of social service items and respond by allocating some modest "maintenance" amounts.

The same may be said of various types of subsidies. These expenditure items are supposed to compensate those who lose out in the market because of externalities and market

failure. The subsidies over time have created different groups of lobbyists who do not hesitate to use their political strength to maintain and increase subsidies. Adjustment policies have to contend with choosing which economic activities and economic agents deserve the subsidies because the overall thrust of these policies is to leave to the impersonal market forces the choice of what the economy has to produce and consume. This is not to say that subsidies have to be completely eschewed. On the contrary vulnerable groups if they can be efficiently identified deserve some form of subsidies in order for them to be able to cope with the new realities imposed by the market and eventually to deal directly with the market.

Affected sectors whether these are households and firms have various creative ways of coping with a regime of declining availability of public goods and services. The better equipped and the politically stronger entities or groups can more easily appropriate for themselves the benefits of scarce public goods and services as the rationing literature suggests. It is the vulnerable groups which fail to benefit from the available public goods and services because of their lack of capability to deal directly with the changes introduced by adjustment policies and the lack of immediate opportunity to consume the available public goods or services. These groups may be so physically removed from the local seats of government and the municipality/city that access to public goods and services is virtually impossible. They also do not have the political power to influence the distribution of these public goods and services.

#### **IV. TRANSMISSION MECHANISMS AND HYPOTHESES**

This section discusses transmission mechanisms in each selected sector, the major research issues/hypotheses and possible indicators.

##### **A. SOCIAL SERVICES SECTOR**

###### **1. Framework and Transmission Mechanisms**

The transmission of the effects of changes in key macroeconomic variables on the welfare of households indexed by health, nutrition and education outcomes can be structured in a series of processes and outcomes. To illustrate this we shall go through the series of causations. Exogenous changes in macroeconomic policies are embodied in changes of key macroeconomic variables (e.g. interest rates, exchange rates, wages and prices, government revenues and expenditures). These key macroeconomic variables affect and, in turn are, in several iterations, affected by the operations of a set of macroeconomic processes, namely: the labor and other factor markets; the goods and services markets; and the public provision of goods and services. These macroeconomic processes produce macroeconomic outcomes such as employment, output, prices, as well as level and distribution of public goods and services. These macroeconomic outcomes are actually the aggregation of incomes (from wages and returns on other assets) the households earn and the prices (both of money price and time price) households face in trying to translate incomes as well as available public goods and services into desired household outcomes. This translation goes through intrahousehold processes involving decisions over allocation of goods, services and time both for current and future needs of individual members.

Social sector outcomes are products of human capital production decisions of the households involving health inputs (health service utilization, sanitation), dietary/nutrient intake and school participation. These decisions are done in the context of prior and/or concurrent choices other household choices such as fertility and family size, work participation of family members and migration of the household or family members. From these decisions emerge social sector outcomes in terms of health, nutrition and education status of households and the individual members.

A distinct peculiarity of the relationships in the social sector is that the link between prices and incomes and social sector outcomes is rarely direct. These relationships almost always go through a web of intervening processes. Consequently, the strength (weakness) of the intermediate relationships determine whether the impact is magnified (dissipated) as it goes through the series of mediation processes.

The final point that has to be raised is that given that changes in macroeconomic policies act together with a host of other change agents, the analysis shall net out the effect of specific macroeconomic adjustment policies from the impact of other sources of change concurrently affecting human capital outcomes.

In terms of categorizing differential effects of macroeconomic adjustment policies on social sector outcomes at least two modalities are identifiable: First, the impact of changes in key macroeconomic variables will vary depending on type of household (rich vs. poor, urban vs. rural), on the type of income (wages vs. return to land capital), on the components of the total price (money price vs. time price), and by individual member(s) of households (husband vs. wife, children vs. adults, males vs. females). Second, the differential effects is dependent on the nature of the processes involved and the extent of participation of households in these processes. In particular, the differential effects is manifested in terms of: (1) whose health is affected (children vs. adults, males vs. females) and the causes of morbidity or mortality (communicable vs. degenerative diseases); (2) whose nutritional status is affected (children vs. adult, males vs. females) and the type of nutritional deficiency involved (dietary insufficiency vs micro-nutrient deficiency; and (3) whose schooling is affected (males vs. females, younger vs. older siblings) and the type of schooling affected (formal vs. informal, basic vs. higher education).

### *Impacts Through the Labor Market*

Three major mechanisms can be identified through which adjustment programs affect social sector outcomes through the labor market.

First, the wage rate is the opportunity cost of time. The cost of accessing social sector services, particularly, health services, includes the cost of waiting in the queue for the service. The higher the wage rate, the higher is the cost of waiting, therefore, the higher is the total cost of the service. Any adjustment program that will affect the wage rate will affect the utilization rates of health services and eventually health sector outcomes.

Second, social sector expenditures are human capital investments which feeds back to the labor market in terms of increases in labor productivity. In turn, human capital investment decisions of households respond to relative rewards in the labor market. Adjustment programs that alter relative returns in the labor market will affect human capital investment decisions of households, hence, also affect social sector outcomes.

Third, wages (and returns to other assets) form part of income and private expenditures on nutrition, health, and education are determined by income just like any other expenditure. Adjustment programs that alter wages (and returns of assets) will alter household income, therefore, will also affect choices of household over expenditures on human capital inputs.

### *Impacts Through the Goods Market*

Social sector expenditures require material inputs, i.e. paper and pencil for education, medicines for health, and food for nutrition. Adjustment programs that affects the prices (or the supply given the demand) of these goods will affect social sector outcomes. For instance, a devaluation will affect the price of medicines since either the compounds used in the manufacture

of medicines or the whole formulation is imported. This can also trigger a series of substitution possibilities with varying impacts on health outcomes.

To the extent that relative prices mean varying incomes, social sector outcomes will be affected depending on the way the private spending on health, education and food respond as a result of declining (increasing) growth of incomes. In addition, changes in relative prices trigger substitution between related goods. For instance, studies reviewed by Behrman and Deolalikar (1988) provide evidence of positive income-compensated food price effects on nutrient intake, reflecting a strong substitution among foods with different nutrient contents. Thus, when the price of a particular food item increases, the household may shift demand to other relatively nutritious foods so that the decrease in nutrient intake from the food item whose price increased may be more than offset by an increase in nutrient intake from the substituted foods.

#### *Impacts Through the Provision of Public Services*

A considerable proportion of social sector services and goods is provided by the government. Adjustment programs then that call for, say, reduction in budget deficit will have profound impacts on social sector outcomes. To pursue this example, take note that this intermediate policy objective of reducing the budget deficit can be achieved either by reducing government expenditures or by increasing tax revenues, or both. The increase in tax revenues could be achieved by increasing the tax rates or by improving tax compliance. Each of these policy instruments can have different impacts on the incomes of and prices facing different households. Suppose the means taken is to reduce government expenditures. The effect of this on households would depend on the nature of the expenditure cut, both on what is reduced and how it was reduced. Suppose further that the decision is to reduce expenditures for social services, in particular health, more than the other components of government expenditures. The effect of this reduction would again depend on both the extent of the cut and the manner of the cut. If, for example, expenditures for drugs and transportation allowances of field workers are reduced more than the other components of the health budget, then the price (total cost) of health services facing poor households in rural areas is likely to increase more than the cost of health services facing rich households in urban areas.

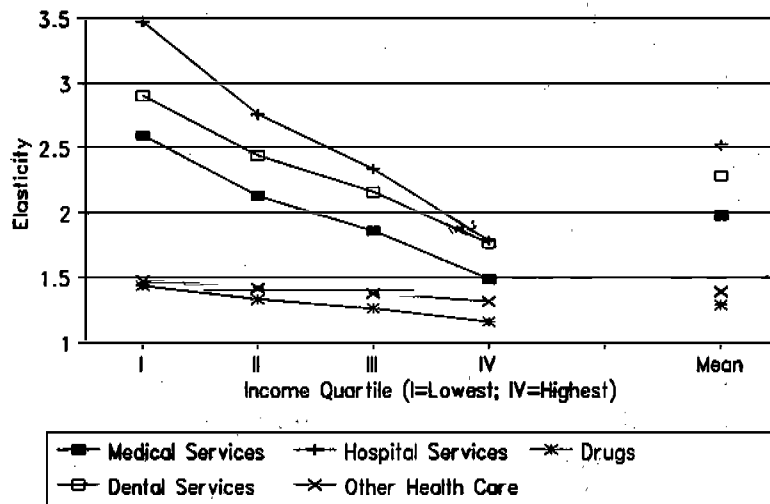
#### *Differential Impacts by Different Income Groups*

Different income groups will likely have different spending propensities on human capital inputs. Therefore, in addition to the general response to increases (decreases) in income is the differential effects due to different behaviour by income class.

Figure 5 shows estimates of expenditure elasticities of health care expenditures by income quartile and type of health care expenditures based on the 1985 FIES. This information tells us that changes in the incomes of the low income households are likely to result in proportionately larger expenditures for medical, dental and hospital services than changes in the incomes of high income groups. One could use this information to infer that macroeconomic adjustment policies that adversely (favorably) affect the incomes of low income groups are likely

Figure 5

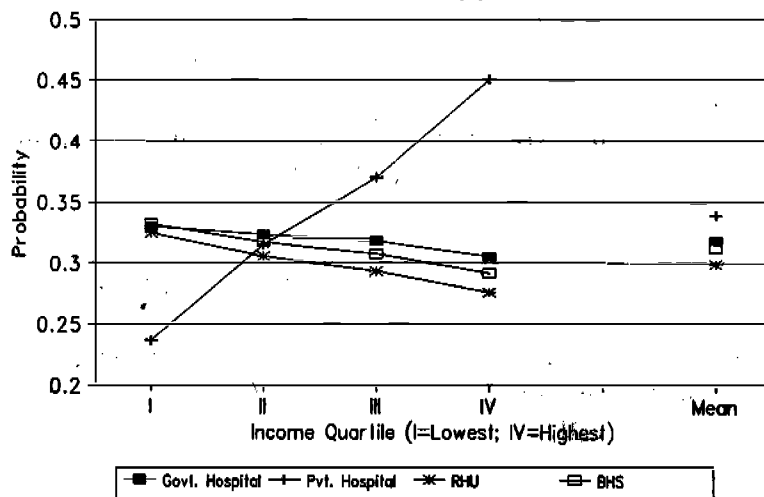
### Estimated Income Elasticities of Health Care Expenditures: Philippines, 1985



Source: Russo, G. and A. N. Herrin, (forthcoming); data from 1985 FIES.

Figure 6

### Predicted Probabilities of Using Health Facilities: Philippines, 1985



Source: Russo, G. and A.N. Herrin (forthcoming); data from 1987 National Health Survey.

to result in significant adverse (favorable) effects on the health status of the population (through reductions in health care expenditures) than if the effects of policies favor only income changes among higher income groups.

**Figure 6** shows estimates of predicted probabilities of using health facilities by income quartile based on the 1987 National Health Survey. The data suggest that lower income groups tend to use public health facilities while higher income groups tend to use private health facilities. Thus the pattern of health facility use is likely to change with the pattern of income change generated by macroeconomic adjustment policies. A decrease in real incomes due to the short term effects of adjustment policies could lead to greater use of public health facilities. This could possibly increase waiting time for service and reduce the quality of health service in public facilities, especially if public budgets for health are not increased to deal with such increased levels of utilization.

Data on enrollment rates by age of child and household income in both rural and urban areas obtained from the Household and School Matching Survey of the Department of Education, Culture and Sports shown in **Figure 7** and **Figure 8** reveal that enrollment rates are lower among poorer households than higher income households. This is true for each age group of children in both urban and rural areas. Enrollment rates in rural areas, however, are lower than in urban areas in each income decile particularly for older children age 11 to 16 years. What this information suggests for us is that the impact of macroeconomic adjustment policies on educational performance would depend in part on whose household's income are being affected more than others.

### *The Role of the Interaction Among Social Sector Outcomes*

It is well known that better nutrition and health status results in better performance in school (e.g. Selowsky and Taylor 1973). Thus, a policy that promotes better nutrition will also improve educational outcomes. Likewise, better educational outcomes generate better nutrition and health outcomes, hence, will have similar implications.

### *Impacts in the Subsequent Rounds Due to Changes in Human Capital Outcomes*

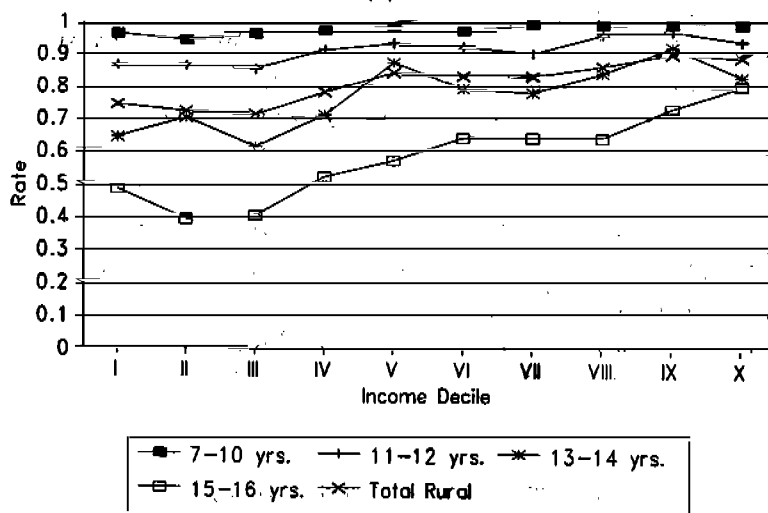
As mentioned above, social sector outcomes alters labor productivity. Adjustment programs that affect social sector outcomes will then have effects not only on the current round but also in subsequent rounds as well.

## 2. Major Issues

There were several studies undertaken to understand the determinants of socioeconomic outcomes (Herrin and Bautista 1989 for health; Herrin 1990 for nutrition; and Paqueo 1987 for education). Although most of the studies were not done in the context of analyzing the impacts of macroeconomic adjustment policies, they can provide a basis for identifying and firming up

Figure 7

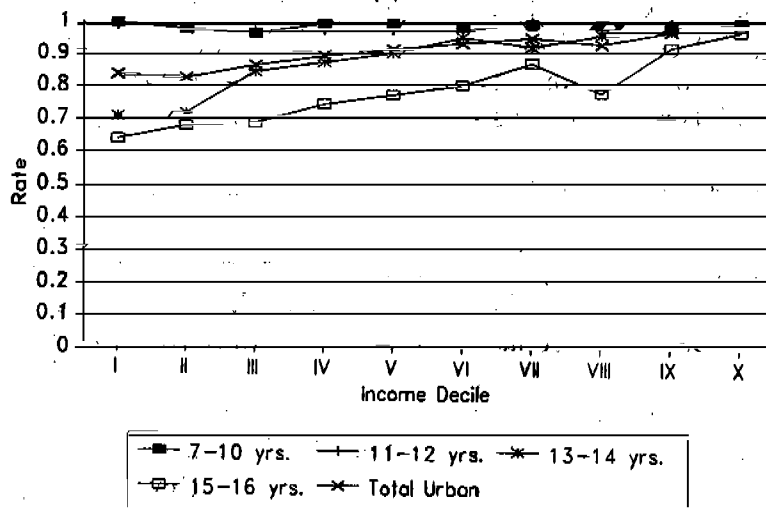
Enrollment Rates By Age and Income Decile:  
Rural Philippines, 1982-1983



Source: HSMS as reported in World Bank (1988).

Figure 8

Enrollment Rates By Age and Income Decile:  
Urban Philippines, 1982-1983



Source: HSMS as reported in World Bank (1988).



knowledge on key processes. What follows are the major issues attendant to the analysis of the impact of macroeconomic adjustment policies on social sector outcomes that require empirical validation.

*Income, Prices, Contextual Variables and Health Outcomes.* Incomes and prices affect health status through their impact on health care utilization and exposure to environmental contamination, among others, and these are compounded by nutritional status and initial demographic and social characteristics of households (such as family size and education of mothers).

*Income and Health Expenditures Elasticities.* Given the proportionately larger expenditure elasticities of health care expenditures by low income households, one can infer that macroeconomic adjustment policies that adversely (favorably) affect the incomes of low income groups are likely to result in significant adverse (favorable) effects on the health status of the population (through reductions in health care expenditures) than if effects of policies favor only income changes among higher income groups.

*Income and Public Health Facilities Utilization.* Given that lower income groups tend to use public health facilities while higher income groups tend to use private health facilities, a decrease in real incomes due to the short term effects of adjustment policies could lead to greater use of public health facilities. This could possibly lead to an increase in waiting time for service and reduce the quality of health service in public facilities, especially if public budgets for health are not increased to deal with such increased levels of utilization.

*Price Effects on Service Utilization.* There is the continuing concern for robust estimates of price elasticities of service utilization. Previous studies show that outpatient, delivery and other primary care are not very sensitive to income, money prices or time prices (Akin *et al.* 1984; Schwartz, *et al.* 1988). The 1981 National Health Survey, however, revealed substantial price elasticities of outpatient care for children, and that the price elasticities are higher at lower income levels than at higher income levels (Ching 1991).

*Income Effect on Nutritional Status: The Role of Various Filters.* A review of determinants of nutritional status suggests that while poverty or low income is often considered as the "major root cause" of malnutrition, increases in income among the malnourished group alone to close the nutrition gap is not feasible nor acceptable. The reason behind this finding is the fact that the link between income and nutritional status consists of several intervening links. Bouis and Haddad (1990) estimates implied that the doubling of income improves preschooler's nutritional status by only 5 percent. This conclusion was derived from the following estimated elasticities representing the strength of relationship of each link: (1) income and food expenditures, 0.65; (2) food expenditures and household calorie intake, 0.17; (3) household calorie intake and preschooler's calorie intake, 1.18; and (4) preschooler's calorie intake and preschoolers nutritional status, 0.39. The net nutritional status elasticity with respect to income is estimated by multiplying the individual elasticities for each link:  $(0.65)(0.17)(1.18)(0.39) = (0.05)$ . There is then a strong case for direct nutrition interventions that serve

to strengthen various links. Such intervention will invariably include nutrition education, focused health interventions, and family planning.

*Price Effect on Nutritional Status.* Studies reviewed by Behrman and Doelalikar (1988) provide evidence of positive income-compensated food price effects on nutrient intake, reflecting a strong substitution among foods with different nutrient contents.

In studies conducted in the Philippines, Bouis and Haddad (1990) find no significant effect of price of rice or corn on household calorie intake; while Garcia and Pinstrip-Andersen (1987) find household calorie consumption with respect to price of rice to be only -0.02. This latter finding implies that a doubling of the price of rice results in a reduction in household calorie consumption of only 2 percent.

*Income and School Participation.* Data from the Household School and Matching Survey reveal that enrollment rates are lower among poorer households than higher income households. This is true for each age group of children in both urban and rural areas. Enrollment in rural areas, however, are lower than in urban areas in each income decile particularly for older children age 11 to 16 years. Small area sample survey results suggest that part of the relationship between household income and school participation of children is due to the greater participation of these children in both paid and unpaid work in order to supplement household income. Such a household survival strategy, of course, has the unintended effect of reducing school participation and eventual schooling attainment of children in these households relative to other children (Herrin 1992).

*Adjustment Policies and Regional Disparity in Health Outcomes.* There is the interest on whether, and to what extent, macroeconomic adjustment policies can adversely (favorably) affect economic activities and incomes of some regions more than others, and whether such differential impact widen (narrow) regional mortality differentials as well as those of the different subgroups of the population.

In assessing the impact of macroeconomic policies, the impact should be measured relative to some bases. Since, laboratory experiments are not possible, finding out and comparing the effects on human capital outcomes of alternative sets of macroeconomic policies is the feasible research strategy. In this regard, the use of simulation models to assess counterfactuals is suggested.

### 3. Indicators

The indicators for analyzing the impact of macroeconomic adjustment policies on social sector outcomes can be grouped into three: (1) economic outcomes facing households, (2) household choices, and (3) human capital outcomes.

#### *Economic Outcomes Facing Households*

1. Income (returns to labor and other assets)

- by source (wage,rent,interest,profit)
  - by type of household
  - by family member contributing
2. Prices (total cost to an individual or household goods and services)
- by type of cost and other influences (money price, transport cost, travel time, waiting time for services; insurance coverage, scholarships and tuition subsidies, food subsidies)
  - by type of household
  - by household member affected

### *Household Choices*

1. Human Capital production inputs
- Health service utilization (preventive and curative)
  - Sanitation
  - Dietary/Nutrient intake
  - School participation
2. Other Choices
- Fertility and family size
  - Work participation of family members
  - Migration of household or family members

### *Human Capital Outcomes*

1. Health
- Mortality
  - Morbidity
2. Nutrition
- Growth failure
  - Micronutrient deficiency
3. Education
- Literacy and functional literacy
  - Schooling attainment
  - School achievement

Many of these indicators are already available. The gap lies on the fact that since these require different data gathering methodologies, these are gathered in different household surveys, hence, in different points in time. Therefore, an integrated analysis that MIMAP requires is difficult to undertake.

## B. NATURAL RESOURCES AND ENVIRONMENT SECTOR

### 1. Framework and Transmission Mechanisms

The impact of the adjustment policies on the natural resources and environment (NRE) sector can be assessed in two levels: at the macroeconomic level since the country is heavily dependent on natural resources for its survival and growth, and at the household and firm level since a large segment of the population is directly or indirectly dependent on the natural resources for subsistence and livelihood. The MIMAP analysis focuses on the latter without necessarily ignoring the importance of the former.

There are two groups of resource users, namely the formal or commercial group and the informal or subsistence group, who will be affected by macroeconomic adjustment policies in varying degrees and direction. The welfare impacts of macroeconomic adjustment policies on the two groups of resource users pass through two levels of channels. In particular, they affect prices of inputs and resource outputs as well as the availability of technology and public goods (first level), which, in turn, affect the rate of resource depletion and/or degradation/replenishment (second level), which ultimately affect the welfare of formal and informal resource users. Institutional factors could also affect the rate of resource depletion. For instance, shorter security of lease tenure encourages faster rate of resource depletion and discourages resource replenishment. The welfare status of resource users may have a feedback effect on the rate of resource depletion. For instance, resource users who are adversely affected by policies may intensify resource extraction to maintain a certain level of income.

### 2. Major Issues/Hypotheses

There have been changes in macroeconomic policies over the years. Some were intended to affect directly the natural resource and environment sector, while others produced unintended effects on the sector. There were sectoral policies that directly addressed some aspects of the natural resource and environment sector. However, very little empirical work had been done quantifying the impacts of these policies on resource depletion. Going through the framework discussed above, one can hypothesize the impacts of macroeconomic policies on resource depletion through certain transmission channels. This is shown in **Table 8**.

A distinction is made in terms of whether the inputs and outputs are tradeable or non-tradeable. The different policies considered are changes in the level of government expenditures and taxes, investment incentives, money supply, devaluation, and trade controls. It should be noted that there are several situations where ambiguity in the anticipated impacts emerge, while certain definitiveness can be said about impact of certain policies on rate of depletion.

Policies with inflationary impacts, such as increases in money supply and government expenditures and decreases in general taxes, cause the aggregate demand to increase. Subsequently, employment is increased in the formal sector which may cause the nominal wage

Table 8

**PREDICTED IMPACT OF MACROECONOMIC POLICIES ON  
RELATIVE PRICES AND THE RATE OF DEPLETION**

Policy	Domestic Price Of							
	Output		Inputs		Capital	Labor	Interest Rates	Rate of Depletion
	T	NT	T	NT				
increase in G	0	+	0	+	+	-	+	+/-
increase in Tx	0	-	0	-	-	+	-	+/-
increase in MS	0	+	0	+	-	-	-	+
Devaluation	+	0	+	+	?	0	?	+
Trade Taxes	+/-	0	+/-	0	0	0	?	-
Investment Incentives	0	+	0	+	-	0	?	+

Note: T - Tradeables (+) - increase  
 NT - Non tradeables (0) - no change  
 (-) - decrease (?) - uncertain change  
 Tx - Tax  
 MS - Money Supply  
 Source: Nelson (1984)

rate to increase, thus, eventually causing an inflow of labor from the informal sector. The general increase in the price level is however expected to be more than the increase in the nominal wage rate, thus, causing real wage rate to decrease. Inflationary policies have the overall impact of increasing the general price level of both nontradeable inputs and outputs. The prices of tradeables are not expected to change, however, because they are determined by world prices. For the informal resource users who are confronted by high prices of consumer goods but who may not experience a wage increase even if there is increased demand for labor in the formal sector on account of the labor surplus situation in the country, it is expected that more pressure will be put on the resource which cause faster resource depletion. To this people, the natural resources offer a way out of the economic difficulties which are created by inflationary changes in government economic policies.

Note, however, that the pressure on the resource coming from the formal sector may have an opposite effect. In particular, if the firms are producing tradeables, the price may remain the same since these prices are determined in the world market. The prices of inputs (nontradeable intermediate inputs and labor), are however, higher and these are translated in increased cost of production. As a result, a lower rate of depletion from the formal sector may be realized.

Changes in money supply, tax and government expenditures can also alter the nominal rate of interest which in turn affects the cost of production, especially those of the capital

intensive industries. Policies which decrease the nominal interest rate include increases in money supply and decreases in government expenditures. These policies are expected to reduce the nominal interest rate in the short run but, in the long run the inflationary effects of increased money supply may cause nominal rate of interest to increase.

Given a capital intensive resource-based industries, a higher rate of interest increases the costs of operation of the firm. With a higher cost of production/extraction, it is expected that resource extraction activities will be reduced. On the other hand, policies which reduce the interest rate, such as provision of cheap credit, makes it profitable for the firms to employ more capital, thus, hastening the rate of depletion of natural resources.

Other macroeconomic policy instruments used by the government to correct for economic imbalances include those of the exchange rate and certain foreign trade policies. Exchange rate controls cause the domestic currency to be overvalued. With an overvalued domestic currency, the prices of nontradeables become expensive relative to tradeable items. This has the effect of raising production of nontradeables, increasing domestic consumption of the lower-priced tradeables, and reducing exports. In addition, the relatively cheaper foreign currency encourages greater consumption of imported items. The expected impact on resource depletion of an overvalued exchange rate is to reduce depletion, assuming that bulk of the natural resource products are tradeables.

In the case of trade taxes, the rate of depletion will be affected only if outputs and/or inputs are traded in the foreign market. With export taxes, the prices of exportables are reduced while import taxes raise the price of importables. The ultimate impact of trade taxes in general is to reduce the rate of resource depletion since they worsen the terms of trade faced by the exporting countries.

Still another set of policy instrument is investment incentives, may take the form of reduced tariffs on imported inputs, exemption from income taxes and related privileges, and reduced or subsidized interest rates. As a whole, these policies tend to raise the capital intensity of the firm which redounds to lower cost of production. With lower cost of production, faster depletion of the resource is expected to happen.

The analysis can be extended further by looking at the impact of sector-specific policies on relative prices and resource depletion. In the forestry sector, the different sectoral adjustment policies which figure prominently within the last two decades are presented in Table 9. Shown also in the same table are the expected impact of these various policies on the rate of forest depletion. Like the various macroeconomic adjustment policies, changes in resource use can come about through changes in the relative prices of outputs and inputs.

Given the growing concern for the environment, most or all of these policies were formulated with the end goal of limiting resource depletion. By affecting output and input prices, the profitability of extraction to the firm is reduced and lower extraction rate may ensue, other things being equal. The same effect of achieving sustainable level of resource use is expected with the government's Integrated Social Forestry Program (ISFP). In particular, the provision of long term leases or stewardship contracts to resource users will hopefully create in

Table 9

**PREDICTED IMPACT OF FOREST MANAGEMENT POLICIES  
ON RELATIVE PRICES AND THE RATE OF FOREST DEPLETION**

Policy	Domestic Price Of							
	Output		Inputs		Capital	Labor	Discount Rates	Rate of Depletion
	T	NT	T	NT				
Log Export Ban	-	-	0	0	0	0	?	-
Logging Ban	-	-	0	0	0	0	?	-
Harvest Fees (incl envt'l fee & taxes)	-	-	0	0	0	0	?	-
Export Taxes	-	0	0	0	+	0	?	-
Long Term Leases	0	0	0	0	0	0	-	-
Investment Incentives	0	0	-	0	-	0	?	+
ISFP	0	0	-	-	-/0	0	-	?

Note: T - Tradeables (+) - increase  
 NT - Non tradeables (0) - no change  
 (-) - decrease (?) - uncertain change  
 Source: Nelson (1984)

them the incentive to protect and manage the resource in a sustainable manner since their future is also at stake. In effect, a secure long term lease agreement reduces the private rate of time preference or discount rate.

It is also worth noting that different types of resource users may react or be affected differently by the same economic policies. Take the case of the small upland farmers or kaingineros and those of the logging firms. For the kaingineros, increased government expenditures or other expansionary economic policies which create a general increase in prices will harm them most, since forest product prices are not expected to increase in the same proportion as the other consumer products. To cope with this general increase in prices, the kaingineros are expected to put more pressure on the resource through more intensive cultivation.

It is possible, however, that the increase in the nominal wage rate, especially in the formal sector may lure upland dwellers to join the formal economy labor force. As a result, there will be less pressure on the resource that will be coming from the informal sector. This mobility of labor, though, is unlikely in a developing country like the Philippines due to both the constraints on skills possessed by upland farmers and the problem of dislocating them once they have settled their families in a given upland area.

Table 10

**PREDICTED IMPACT OF MINING AND MINERAL MANAGEMENT  
POLICIES ON RELATIVE PRICES AND THE RATE OF MINERAL EXHAUSTION**

Policy	Domestic Price Of						
	Output		Inputs		Capital	Labor	Rate of Exhaustion
	T	NT	T	NT			
Production Assistance	0	+	0	+	-	+	+
Price Controls	0	+	0	+	0	0	+
Export Inc.	+	0	-	0	-	0	+
Domestic Taxes	+	+	-	0	-	0	+
Investment Incentives	+	0	-	0	-	0	+

Note: T - Tradeables (+) - increase  
 NT - Non tradeables (0) - no change  
 (-) - decrease (?) - uncertain change  
 Source: Adopted from Nelson (1984)

For commercial loggers, the rate of depletion may even decrease on account of the high cost of production brought about by higher prices of inputs. As mentioned earlier, since most natural resource products are tradeable, their prices are not expected to increase with expansionary policies of the government. The net effect on rate of depletion of policies which increase aggregate demand is, therefore, ambiguous.

The net effect of increased money supply is also ambiguous since while the inflationary impact of such a policy may reduce rate of depletion by the logging firms, the lower rate of interest induced by the high supply of money makes capital inexpensive. This has the effect of encouraging greater resource extraction activities in the forestry sector.

The different economic policies in the mining sectors are likewise summarized in Table 10 with their expected impact on relative prices and on rate of depletion. Note that the different sector specific policies in the mining and mineral-based industries are all conducive to increased rate of depletion. This is not surprising at all since the country relies heavily on this sector for the much needed foreign currency required to fuel the country's economic growth.

The dominant policies instituted in the fishery sector are shown in Table 11. While many policies in the fishery sector are considered as having negative effect of resource depletion, the evidence of resource overfishing tells us that these policies were not quite effective in curtailing fishing activities. The difficulty of enforcing the regulatory policies of the government due to both limited resources available to the government for enforcement and the large coastal resources of the country make it difficult for the central government to limit open access to the nation's coastal resources. As a response to this observed ineffectiveness of the



Table 11

**PREDICTED IMPACT OF COASTAL RESOURCE MANAGEMENT POLICIES ON RELATIVE PRICES  
AND THE RATE OF FISHERY RESOURCE DEPLETION**

Policy	Domestic Price Of				Capital	Labor	Rate of Depletion
	Output		Inputs				
	T	NT	T	NT			
Export Bans	-	-	0	0	0	0	-
Operation & Harvest Regulations	-	-	0	0	0	0	-
Export Taxes	-	0	0	0	0	0	-
Export Incentives	0	0	0	0	0	0	+
Investment Incentives	0	0	-	0	-	0	+
Control of Fishing Effort	-	-	0	0	0	0	-
Credit Program	+	+	0	0	0	0	+

Note: T - Tradeables (+) - increase  
 NT - Non tradeables (0) - no change  
 (-) - decrease (?) - uncertain change  
 Source: Adopted from Nelson (1984)

current system; the government is slowly decentralizing management of these coastal resources.

The impact of output price, input prices and other variables on the rate of forest depletion, in which data are available, were examined using regression analysis (Table 12). The results confirm the hypothesis that output and input prices negatively affect the rate of forest deforestation. What is notable in the result is that the estimated elasticity coefficient of output prices is higher than those of input prices. This means that favorable output prices must have accounted for a significant portion of the rapid rate of deforestation that had taken place in the country. It implies that policies affecting output prices of resources, such as those presented in Tables 8 to 11 have larger impact on the rate of deforestation.

### 3. Possible Indicators

There are various studies trying to link the rate of resource depletion to welfare levels of households directly affected by the depletion. Although they have used various indicators of resource depletion and household welfare, some commonality with respect to certain indicators can be observed. In the forestry sector, resource depletion indicators used are rate of

deforestation, declining productivity of the resource base and the shifting from one resource type (e.g., cropland) to another (e.g., public forest) in their search for alternative sources of income. Welfare impact variables include level of farm income, income distribution through some measures such as Gini coefficient, indebtedness, mobility to other places or income sources, proportion of one's income spent on food, and increased technical knowledge. All of these will presumably affect the level and consumption mix of goods and services of the households;

For the fishery sector, the depletion indicators are declining catch per unit effort, increasing conflicts among users, increased use of destructive methods and increasing efforts spent to catch a given size of harvest. Welfare impact variables are more or less similar in the case of the fishery sector.

For the mining sector, depletion is not really a concern at the household level. Welfare indicators of households within mining communities also include level of income and employment, access to basic services and public utilities provided by the mining firms. For those households affected by effluent discharges of these firms, welfare impact indicators may include reduced productivity and income, health expenditures, labor displacement, and loss of properties.

Most of the studies linking resource depletion to welfare of households are descriptive, and therefore cannot tell us the strength of the linkage. This is one research area where the MIMAP research may be directed.

## C. AGRICULTURAL SECTOR

### 1. Framework and Transmission Mechanisms

Since the 1980s the government has pursued a package of stabilization and structural adjustment policies that are intended to correct serious imbalances in the fiscal and external accounts, ensure price stability and lay the long-term basis for growth and development. Financial, trade and exchange rate policy reforms have been introduced but with limited success as the economy faced implementation problems and the 1983 balance of payments crises which led to negative growth in succeeding years.

Table 12

#### RESULT OF LOG-LINEAR REGRESSION

Determinants	Coefficient	Level of Significance
output price	0.767	.01
interest	- 0.310	.05
real wage	- 0.084	.05
initial stock	2.77	.01
intercept	-15.33	

Functional Form:  
 Deforestation = f(Level of initial stock, real wage rate, interest rate and price of output)

R<sup>2</sup> = 0.96  
 Adj. R<sup>2</sup> = 0.95

The change of government in 1986 opened the way for more policy reform measures. In the trade account, the import liberalization program which started in the early 1980s but which was suspended during the 1983 crisis, was resumed in 1986. Between 1982 and 1990 about 2,462 items were liberalized. The government further committed to liberalize 323 items of the remaining 493 restricted items before 1994, except those used in industries which require a longer period within which to modernize and expand investments. Part of the trade reform was the use of the tariff instead of quantitative restrictions for industrial protection. For instance, Executive Order 470 which was issued on August 24, 1991, provides for a final tariff rate structure of 3%, 10%, 20% and 30%. A parallel tier of 5%, 15%, 25% and 50% is provided for a few selected items.

The government also pursued reforms in tax policy, exchange rate policy and monetary and financial policy. The most significant of the tax policy reform package is the adoption of the value-added tax (VAT) starting in 1988. Executive Order 276 levied a 10% VAT on the production and sale of all goods and services except agricultural products, exportable products and petroleum sector products.

These macro-economic reforms have significant impact on the economy. Economic theory suggests that the immediate outcome of the trade, exchange rate and fiscal policy reforms is more efficiency in the economy. But whether indeed this is the outcome of policy reforms is an empirical matter. It would be difficult to state with certainty the impact of policy reforms without an investigation of the transmission channels through which impacts are exerted on economic agents. As pointed out earlier, adjustment policies impact on economic agents through (a) relative prices; (b) incomes or purchasing power and (c) access (or lack of it) to resources, like public goods. Thus, adjustment policies change the incentive structure and redirect the flow of resources among sectors and activities. Those sectors that were beneficiaries of protectionist policies will experience resource outflows in the course of implementation of policy reforms. Indeed, the seriousness given by the government to the implementation of policy reforms is a strong signal to resource owners and users that the economy will undertake a different economic path.

## 2. Major Issues/Hypotheses

There is a dearth of studies which determine empirically the impacts of macroeconomic adjustment policies on agriculture. The existing studies, such as those of Lee (1984) and Medalla (1986), had focused on the impact of changes in the tariff structure on the economy. Those which tried to examine the role of trade policies in influencing agricultural development (Azarcon 1987; Seligman 1987) were mostly descriptive. More recent attempts by Clarete (1989,1991) gave some quantitative estimates of the impact of tariff reforms on Philippine agriculture but these addressed mainly the resource allocation issues. A more disaggregated analysis of the micro impacts of tariff or trade policy reforms, for example, the effects on income distribution, has yet to be done. Nevertheless, we report here the initial attempts to quantify the impacts of trade policy reforms on agriculture although the focus of these studies is on resource allocation.

Using a CGE model of the Philippine economy, Clarete (1989) found out that although the tariff reforms yielded positive real income gains to the economy resources moved out of agriculture towards non-agriculture. This is because agricultural tariff protection came down faster and deeper than non-agricultural tariff protection. This exacerbates the already very low effective tariff protection given to agriculture vis-a-vis manufacturing as documented by Bautista *et al.* (1979). On the recent tariff reforms two studies were done (Clarete 1991a and 1991b). Executive Order 413 was issued in 1990 to cut further the tariff protection in the economy. While the reforms were beneficial, these would have meant substantial revenue losses. EO 413 was suspended following some objections from the private sector and in its place Executive Order 470 was issued.

Clarete found out that EO 470 tariff reforms moved the economy towards more efficiency but this would depend on the manner the government manages the exchange rate following these reforms. If the exchange rate were unresponsive to the increasing trade deficit, then a severe balance of payments problem which might lead to rationing of foreign exchange, will cancel the real income gains arising from the tariff reforms. Table 13 shows the effects of the tariff reforms under a flexible exchange rate policy. In particular, in the agriculture sector the production of crops and other primary commodities increases slightly. More crops, livestock and fishery products are produced. Forestry and mining also came out as gainers in resource. As a whole primary sectors tend to expand because of the tariff reforms and the crops sector, being the largest of these sectors, stands to gain the most resources. On the other hand, the output of the manufacturing sector would also increase as a result of the tariff reforms. Food, beverages and tobacco are expected to expand. However, the feeds production will go down but this loss is more than offset by the gains in resources in food, beverages and tobacco as well as in vegetable oils and fats sectors.

Table 13

LOCAL PRODUCTION EFFECTS OF E.O. 470 TARIFF REFORMS  
(In Percent)

Model Sector	Benchmark Data (in thousand units)	
1 Crops	151,803,000	0.16
2 Livestock and Poultry	1,533,400	0.09
3 Fishery	61,939,100	0.26
4 Forestry and Logging	18,268,500	0.17
5 Mining	23,349,200	1.20
6 Coconut & veg. oil manf.	46,066,000	0.46
7 Animal Feeds Manufacturing	25,722,300	-0.14
8 Food, Beverages & Tobacco	263,769,000	0.12
9 Text. App., Ftwr & Leather	89,379,000	1.10
10 Wood, Paper & Rubber	64,844,800	0.49
11 Chemicals	42,778,100	-0.17
12 Petroleum Refineries	43,342,800	-0.91
13 Non-metallic min. Prods.	14,105,200	0.18
14 Basic Metal Industries	33,052,000	0.79
15 Fabricated Metal Products	14,845,200	-0.32
16 Machinery exc. electrical	7,644,080	0.30
17 Electrical Machinery	35,329,800	4.25
18 Transport Equipment	4,020,080	-0.37
19 Miscellaneous Manufactures	6,589,570	-1.03
20 Services	764,300,000	-0.34

Source: Clarete (1991b); Table 10.

The CGE model was used once more to quantify the impact of the value-added tax (VAT) on agricultural processing. Clarete showed that the VAT inadvertently taxes the value-added

in agro-processing more than in the rest of the economy. This is because the VAT law exempts the primary agricultural sector whose products are substantially used in agri-processing activities. Thus, agro-processors who purchase primary agricultural products as raw

**Table 14**  
**SIMPLE AVERAGE VAT RATES BY**  
**KEY SECTORS (%)**

	Book Rate	Effective Rate	Percent Deviation
Primary Sectors	1.85	2.12	2.63
Agricultural Processing	10.00	22.28	122.81
Industry	9.35	12.34	29.92
Services	10.00	12.55	25.49

materials can not claim a tax credit supposedly equal to the cost of the VAT on the materials. The net effect is to discourage investment and resources from moving into agro-processing. Agricultural processing has the highest effective VAT rate of 22.28% followed by the services sector. The effective VAT rate for the non-agricultural processing sectors is not substantially higher than 10% (Table 14). This is because the proportion of VAT-exempt intermediate inputs in these other sectors is small compared to the same proportion in agro-processing.

The estimation attempts show that macroeconomic policy reforms have positive impacts on the allocation and use of resources in the economy. However, there are outstanding issues that still must be addressed immediately. An important area that must be studied is the impact of policy reforms on agricultural and rural factor markets. Factor owners respond to shifts in production and labor incentives as signalled by changes in relative rents and wages in factor markets that are brought about by the adjustment policies. Since the agricultural and rural economy is a perennial source of migrant labor it will be important to determine how adjustment policies create the potential for more employment right in the countryside. More specifically, we need information not only on the impact of adjustment policies on the production of tradables and non-tradables both types of commodities which are produced by the agriculture and rural sector. As the composition of output changes in response to the new incentive structure, correspondingly employment shifts towards the favored sector. The size of unemployed labor and the emerging structure of the agricultural labor market are matters of deep concern and must be thoroughly understood and analyzed.

The adjustment policies also have welfare implications to gainers and losers that arise because of shifts in composition of output and employment. The current empirical work has indicated the potential of CGE models in tracking down the effects of macroeconomic policies on key sectors of the economy. It is noted that the results of the model simulations depend upon the assumed behavioral parameters of the model which can, however, be econometrically estimated. A more disaggregated analysis of the micro impacts of macro policy reforms will require a restructuring of the CGE model to incorporate more sectors. The CGE models applied by Clarete did not examine the distributional impacts of policy reforms but this is something that cannot be done. There are in fact other models which have tried to incorporate income distribution concerns in their respective structures ( e.g. see the APEX CGE done by Clarete and Warr 1992 and Habito 1984). It is interesting that a CGE model of the Philippine economy now being developed by several local researchers appears suitable for the purpose. In addition,

the use of a macro-econometric model which interphases with the CGE to calculate the short-run effects of macro economic policy reforms is also suggested. We discuss in the **Monitoring Section** of this integrative report the modelling problems that have to be solved in this approach.

### 3. Interphase of the CGE and Macro-econometric Models

Clarete suggests that the core analysis of macroeconomic policies be undertaken using a CGE model and that a macroeconometric model be used to do side-computations for use in the CGE simulations. The CGE models are inappropriate in analyzing the impact of macroeconomic policies on nominal values such as the nominal exchange rate, the general price level and nominal gross domestic product. This is where a macroeconometric model will be used. The interphase between the two models may be focused on the computation of (a) real exchange rate changes; (b) real interest rate changes and (c) aggregate real economic output. The macroeconometric model will calculate the changes in the nominal values of the general price level, the nominal exchange rate, the nominal interest rate and the nominal gross domestic product as a result of a given macroeconomic policy shock. Given these computations, the underlying real values of these magnitudes are calculated which are then introduced as shocks into the CGE model to get the microeconomic and distributional consequences of the policy shock.

The problem of the interphase is the absence of an integrating theoretical framework which explains it. As a result, there are many alternative ways of closing the CGE model any one of which has varying impacts on the microeconomic agents of the economy. The theoretical difficulty is the identification of the appropriate auxiliary variable which is needed as we add one more general equilibrium condition into the CGE model. There can be several alternative auxiliary variables for a given macroeconomic constraint which must be satisfied in equilibrium. To address this problem about auxiliary variable the modeler must choose what he thinks to be the most appropriate for the Philippine economy. Thus, the lack of an integrating theoretical framework goes down into the what at the moment is a root problem in economic theory: the micro and macro sides of economic theory remains to be separate theoretical fields in economics.

## D. **INDUSTRIAL INFORMAL SECTOR**

### 1. Framework and Transmission Mechanisms

Awareness of the existence of a large informal sector was heightened during the worst balance of payments crisis experienced by the Philippines in 1983-1985. During this period, a lot of firms closed shop. Faced with no other alternatives, many laid off workers sought refuge in the informal sector. Some of those who remained with the formal sector, but experienced a sharp cut in their real income due to very high inflation rates also joined the informal sector to augment their primary income.

There is no precise information on the size of the informal sector. Available information using "residual method" suggests that the informal sector accounted for 73 percent of nonagricultural employment in 1983 and 37 percent of the total value-added in nonagriculture.<sup>2</sup> Considering the fact that the economic crisis deepened after 1983, the size of the informal sector could have further expanded.

There is, of course, another way of defining the informal sector. That is, it consists of individuals and enterprises operating totally or partially outside the legal system (de Soto 1989). Defined this way, one cannot measure the size of the informal sector from available statistics. There are, however, small surveys that tried to describe the characteristics of those belonging to the informal sector in this sense. For instance, Alonzo and Abrera-Mangahas (1990) found that most of the enterprises operate as single proprietorships; none are incorporated, and partnerships are few; family orientation is pervasive; 90 percent of these partnerships are among family members, while 10 percent are among friends; most enterprises are housed in the residence of the owner or owners; fewer than 25 percent have their own shops devoted exclusively to the business (also cited in Alonzo 1991). These seem to be the same characteristics as what the government officially defined as micro, cottage and small industries. Many authors have therefore referred to these enterprises as informal (e.g., Quesada and Vicente 1990).

Given these characteristics, the informal sector may be viewed as a household-firm. The framework outlined in **Figure 1** already takes into account the impact of adjustment policies on the informal sector through three transmission channels, namely the factor markets, output markets and the provision of public goods. What needs to be elaborated on is the mechanics by which adjustment policies affect the informal sector. Apart from the three transmission mechanisms mentioned in Section III, the regulatory environment is a significant factor affecting the informal factor. The general frame of reference we take of the informal sector is eloquently expressed in Alonzo (1991):

"The informal sector participant, as the evidence will show, behaves like any other rational economic agent, responding to the environment he faces, weighing the costs and benefits of his position, and deciding what is best for him. The economic environment in many developing countries, however, is conditioned by a host of government regulations and other external factors that make informality the better option for an individual who lacks the resources to overcome those barriers. Reforms that would allow him to afford to become formal would improve not only his situation but also the overall efficiency of the economy" (p. 41).

#### *Impacts through the Factor Markets*

The informal sector typically does not have access to the formal capital markets. Thus, start-up capital mostly come from their savings, augmented by borrowing from the informal

---

<sup>2</sup>This information was taken from Arboleda (1989) who used the "residual method" which simply deducts estimates of employment in large enterprises from the estimate of the employed labor force from household survey.

credit markets. For business expansion, they their profits, also augmented by borrowing from the informal credit markets. The informal credit markets, therefore, are an important source of capital for the informal sector.

Adjustment policies that involve liberalization of interest rates and restraint on demand for credit naturally lead to a rise in interest rates, especially if the interest rates in the formal sector were kept substantially below the market rates before the liberalization. The impact of adjustment policies on the informal sector in this area depends upon the relationship between the formal and informal capital markets. A rise in the deposit rates in the formal sector might draw funds away from the informal capital markets (substitution issue) without necessarily raising overall savings (additionality issue). Thus, the informal sector will experience a credit crunch while the formal sector will be facing ample supply of funds. This phenomenon was detected in Korea (Wijnberger 1983).

It is also possible that credit a crunch in the informal sector brought about by the adjustment measures ration out a significant number of firms belonging to the formal sector. Convinced of the viability of their business even in the face of a severe credit crunch, those rationed out in the formal sector may seek funding from the informal credit markets, thereby crowding out the informal sector.

It seems that the only case in which adjustment policies have no effect on the informal sector is when the formal and informal credit markets are completely segmented. This certainly is far from reality.

Existing literature on the credit markets have not dealt with these issues. So far, available evidence shows that in times of economic crisis, more people borrow from the informal credit markets (Bautista and Magno 1990). However, it is not clear whether crowding out really occurred.

In the labor markets, adjustment measures have two distinct impacts on the informal sector. First, in the short-run, laid off workers from the formal sector may join the ranks of hired workers in the informal sector. Aside from the benefits derived from the increased pool of workers, the informal sector may also benefit from the skills and technology that these workers may bring to the informal sector, thereby increasing its productivity. This may be the lasting effect on the informal sector, since in the medium-run when the economy is placed in a sustainable growth path, most of those workers are expected to go back to the formal sector.

Second, laid off workers from the formal sector may join the ranks of entrepreneurs in the formal sector. They may intensify competition if they go into areas where the informal sector is already operating. They may also broaden the activities of the informal sector if they go into entirely new areas. Whether they leave or stay in this sector once the economy resumes its growth would depend on the relative returns of alternative economic opportunities facing them.

Existing literature does not provide us with a clear idea of how adjustment policies affect the informal sector through the labor markets.



### *Impacts through the Product Markets*

The impact of adjustment policies on the informal sector through the output market is a bit more complicated. One can build an extreme case in which the formal and informal sectors are producing entirely different products and that adjustment policies affect similarly or differently those products. However, this is far from reality judging from the activities engaged in by the informal sector. That is, it engages in economic activities similar those engaged in by the formal sector, albeit in different scale and technology. Thus, adjustment policies affecting the outputs of the formal sector similarly affect the outputs of the informal sector. It seems important then to determine the industry concentration of the informal sector because adjustment policies have differential impact on the various industries. If for instance, adjustment policies favor the tradable sector, where the informal sector concentrate, over the non-tradable sector, then the informal sector will be benefitted. The opposite holds true if the informal sector concentrate in the non-tradable sector.

Given the lack of capital of the informal sector and access to facilities to enforce contracts, one might hasten to point out that the informal sector might have concentrated in the non-tradable sector. The subcontracting arrangement prevalent in Cebu and in other parts of the country contradicts this view since most of these occur in tradable sectors. In fact, most subcontractors also enter into arrangements with their contractors (who are direct exporters) for their credit, raw materials, and skills training needs to overcome their deficiencies in these areas.

In areas where there is product complementarity between formal and informal sectors as in the case of subcontracting, the issue might arise with regard to how income is distributed. Asymmetry in information may cause an unfair distribution of income to the disadvantage of those who do not possess adequate information about the market like the subcontractors. For instance, in Cebu where the export manufacturing has been growing significantly and steadily and there are a good number of progressive large, small and medium and informal enterprises that interact among one another in various areas including subcontracting, income distribution measured in terms of the Gini coefficient had worsened between 1985 and 1988, whereas less progressive areas such as Davao and Iloilo had improved in tandem with the growth of their economies. Being among those occupying the lowest rung in the income ladder, the informal sector in Cebu might not have benefitted from the export boom. It suggests that adjustment policies favorably affecting sectors where the informal sector concentrates may not necessarily lead to improvement in their income. This issue deserves closer examination since available evidence is still inadequate to give a definitive conclusion.

### *Impacts through the Provision of Public Goods and Services*

The provision of public goods and services such as roads, clean air, health services, etc., may benefit more the informal sector than the formal sector since they do not pay for them in terms of direct taxes (the case of free rider problem). But withdrawal of these goods and services will hurt equally the formal and informal sector. There are other publicly provided goods and services that can be accessed only by the formal sector. For example, market information, skills training programs, and special credit programs may be made available only

to registered firms. Obviously, withdrawal of these during the adjustment process will not hurt the informal sector.

It has become a conventional view, however, that the informal sector deserves a special attention by the government especially since their ranks would swell during the adjustment process and further worsen their economic condition. Thus, the "safety net" component of the stabilization program includes as priority target groups the informal sector. Others reject this view because accordingly the informal sector is not necessarily poor in physical and human capital, nor incapable of coping a hostile environment, and therefore should not be singled out as recipient of strong affirmative action programs (Alonzo 1991). What may be needed is a change in regulatory environment (a topic discussed below). This issue deserves further examination.

### *Regulatory Environment*

It has been pointed out that many have remained in the informal sector because of the very high financial barriers and transaction costs involved in becoming formal or in complying with all the required regulations. Zamora (1991) pointed out that there are at least 175 non-labor laws and regulations affecting small and medium enterprises, and setting up a small business operation and having it registered involves a long list of steps and requirements that may take a number of months to complete. To register a "jeepney" (which is a public utility vehicle), a total of 21 documents were required to be attached to the application form. The reform in 1990 reduced the number of documents to 5.

There are opportunity costs of informality. For instance, an informal enterprise cannot avail of the fiscal incentives given to BOI-registered firms. These incentives could raise the internal rate of return of a firm by about 3 to 17 percentage points depending on whether it is an export- or nonexport-oriented firm (Manasan 1989).

The discussion above suggests that the nature of regulatory environment could weaken or undermine the effectiveness of the adjustment policies by reducing the incentives they offer to enterprises..

## 2. Major Research Issues/Hypotheses

Despite the plethora of studies on the informal sector, the impact of adjustment policies on this sector through the various transmission channels and mechanisms has not been closely examined. Future research should therefore focus on the following issues/hypotheses:

*Factor Markets.* The issue is whether reforms designed to improve the efficiency of the formal capital and money markets and the stabilization measures adopted that produced a temporary credit crunch have affected the supply of credit to the informal sector. In the factor markets, the benefits (i.e., increased pool of skilled labor) the informal sector enjoy during the adjustment process need to be empirically verified.

*Product Markets.* It would be worthwhile to examine the industry concentration of the informal sector and how adjustment policies affect the industry. In cases wherein there is complementarity between the formal and informal credit markets, income distribution becomes an important issue.

*Regulatory Environment.* The issue here is whether changes in regulatory environment would improve the incentive structure of informal enterprises to go formal.

### 3. Indicators

The issues discussed above suggest the following indicators that must be monitored to determine the impacts of macroeconomic adjustment policies on the informal sector:

*Regulatory Environment.* This includes all cost-increasing regulations and their changes over time. The costs (explicit and implicit) of complying with regulations need to be regularly monitored. Many of these are now within the responsibility of local governments. More aggressive local government executives might relax or reduce those regulations to attract more investments in their communities.

*Factor Markets.* With respect to capital markets, the indicators here would include access of both formal and informal enterprises to formal and informal to these markets. Changes in the supply of funds in the formal and informal credit markets as well as the extent of their linkages should also be included. Data for the formal sector are readily available from published statistics while data for the informal sector have to be gathered through a regular small sample survey.

With respect to the labor markets, the specific indicators should include the following: number and characteristics of hired labor; productivity and type of technology used by informal enterprises; degree of competition in the informal sector; and types of activities engaged in by new entrants to the informal sector. All these have to be gathered from a regular small sample survey.

*Product Markets.* The indicators here should include: industry concentration of the informal sector; linkage with the formal sector (product complementarity or subcontracting); income of informal enterprises.

## E. **GENDER ISSUES**

### 1. Framework and Transmission Mechanisms

Gender-differentiated effects arising from macroeconomic adjustment programs are introduced at two points in the transmission path. First, it affects the operation of the labor market, the goods market and the distribution of public goods. In terms of Figure 1 it has the same category as institutional factors which modifies the operation of these markets. Second,

it also affects intrahousehold allocation of resources. On both counts, the role is not of a causative or intermediary variable but more of a social milieu within which macroeconomic adjustment programs must operate.

The gender differentiated effects of macroeconomic adjustment policies working through the various transmission mechanisms in the labor market, the goods market and public goods market arise from several factors that are not generated by the adjustment policies themselves but are products of culture manifested in preferences or age-old practices. The factors include: (1) the multiple roles of women only one of which (the productive activities) is generally recognized as work (Moser 1987); (2) the concentration of women in few (traditional women) activities; (3) the limited mobility of women between economic activities; and (4) the differences in preferences of males and females, particularly in consumption (Appleton 1991). Adjustment measures, therefore, should not be expected to eliminate these factors. However, adjustment programs that ignores these factors may exacerbate gender differentials thereby undermining the long-term viability and effectiveness of macroeconomic adjustment programs.

### *Impacts Through the Labor Market*

The peculiarities of the labor market determines the gender-differentiated effects of adjustment policies. In particular, the concentration of women in few sectors and wage differentials for the same qualification, for whatever reasons, will engender impacts of adjustment policies. In the Philippines, women who manage to get employed face several problems, including lower pay relative to male workers in similar job, lower positions occupied by women, and adverse policies in promotion and training. Moreover, unlike men who lost their jobs through poor performance, women, as a group, tend to be laid off or terminated for economic reasons, such as partial shutdown or retrenchment of factories or companies (Licuanan 1991).

When adjustment programs promote sectors that employ predominantly women, relative wages and income will improve in favor of women. But when these mean leaving the house to work in a factory, this will come in conflict with the home role of women. Hence, they may decide against (or will be 'culturally' constrained from) taking advantage of this favorable development. On the other hand, informal sectors are women-dominated since, among others, it offers flexibility which reduces role conflicts. The extent with which structural adjustment promotes informal sectors as integral parts of the economic system, determines the extent of benefits women derive from structural adjustment.

### *Impacts Through the Product Markets*

When structural adjustment mean changes in relative prices, gender-differentiated effects arise from gender-concentration in few economic sectors. As a well-known trade theory states, increases in the relative output price varies proportionately with returns of the input used more intensively in the production of the output whose price has increased (Appleton 1991). For example, in the Philippines exportable sectors like garments, electronics and handicrafts employ

predominantly women. Adjustment policies that tend to promote these export products will benefit women more than men.

### *Impacts through the Provision of Public Goods*

When macroeconomic stabilization programs mean less social services, women are affected on two counts. First, since social services are women-dominated occupations, proportionately less of them will be hired (or more of them will be fired). Second, given the traditional role of women as a source of health care, as preparers of food, and as auxiliary teachers in the home, less social services mean additional effort for women to make up for lost services previously provided more amply. Since these activities are rarely regarded as work, they would not figure prominently in household decisions.

### *Gender In Intrahousehold Resource and Work Allocation*

In the Philippines, gender differentiated claims to resources have been demonstrated in the matter of food, personal needs (clothes, slippers, powder), and leisure goods or activities (Illo 1988, Illo and Uy 1992).

A survey on the three provinces of Abra, Antique, and South Cotabato depicts that the structure of household expenditure reflects the preferences of the contributors to the household income (Garcia 1991).

It is argued that male and female have different preferences over expenditures. In particular, females are known to give priority to children's goods more than men (Appleton 1991). Furthermore, the preference that gets reflected in household expenditures is largely dependent on who contributes to household income (e.g. Garcia 1991). Hence, structural adjustment that have gender-specific income effects, either through prices of goods women produce or higher wages for women workers, will have implications on the allocation of household expenditure. This also implies that women-headed households will generate significantly different structure of household expenditures than male-headed households.

Changes in real income could affect households and their individual members differently depending on how households cope with this market outcome. The immediate implication is a reduction of available cash for food. This could mean more work for women: in the rural areas, growing more subsistence food crops and/or foraging for food; in the urban areas, processing food. In addition, on the basis of ideas of entitlement to food and other basic goods, women (including pregnant and lactating women) have to make do with less or without while their spouses and children are given first option to what food is available (Illo 1992).

## 2. Major Issues

There is virtually no study on gender-differentiated effects arising from past adjustment programs undertaken by the Philippines. The importance to policymakers of knowing these

issues with empirical analysis cannot be understated. For future studies the major issues that must be empirically verified are as follows:

*Gender Concentration and Mobility between Economic Activities.* Women are concentrated in few economic activities which are traditionally considered to be women jobs. Thus, structural adjustment programs that promote industries that are considered women-dominated will favor women more than men. For example, in the Philippines exportable products such as garments, electronics and handicrafts are considered women-dominated industries, a devaluation therefore should benefit women in terms of rising wages and incomes. However, when their mobility is limited because of either role conflicts or inadequate prior training, benefits derived would be severely limited.

*Multiple roles, intrahousehold resource and work allocation, and household coping mechanisms to changes in prices and incomes.* Women are known to have multiple roles one only of which, 'productive' activities, is regarded as 'work'. When households cope with declining incomes, due to either lay off or rising prices, this usually mean women doing 'productive' activities over and above their other roles. This means not only physical but also psychological and emotional stress. In addition, the allocation of the decreasing supply of goods and resources exacerbate whatever gender-based ideas of entitlement prevail within the household.

*Cutback in social services expenditures.* Food preparation, care for the sick and being auxiliary teachers in the home are traditionally taken to be roles for women. Thus, reductions in government expenditures that reduces the share of social services will affect women more than men. In addition, if stabilization programs requires laying off social services sector workers this is virtually synonymous to laying off women workers since workers in the social services sectors are predominantly women.

### 3. Indicators

Some of the relevant indicators are already gender-differentiated and readily available from current monitoring systems. These indicators and the surveys/censuses that generate them include:

#### Population Censuses:

- urban-rural distribution
- educational attainment

#### Labor Force Surveys:

- labor force participation
- employment
- occupational classification
- sectoral classification

#### Nutrition Surveys:

- nutrient intake
- nutritional status

**Health Surveys:**

morbidity rate  
mortality rate

Some other indicators, however, has to be generated by specialized surveys. These will include:

- changes in intrahousehold consumption patterns
- changes in intrahousehold employment patterns
- changes in intrahousehold impact of changes in sectoral spending in health and education
- changes in the balance between women's time in their productive, reproductive, and community managing roles
- gender-differentiated claims to resources (food; personal needs - clothes, slippers, powder), and leisure goods or activities (drinking, smoking, gambling).
- relative resource status
- relative workloads
- relative wage rates
- relative positions in the employment structure
- proportion of women-headed households

## **F. IMPACT OF GOVERNMENT REGULATIONS ON HOUSEHOLDS AND FIRMS**

### **1. Framework and Transmission Mechanisms**

#### *Government Intervention and the Objective of Regulation*

Government intervention in the economy takes many forms as public policy seeks to correct distortions and market failure which bring about misallocation of resources. Such failures are often manifested through excessive profits, quality decline in goods and services and exploitation of labor. According to Stiglitz (1988), there are six circumstances or conditions of market failures that prevent the market from reaching Pareto efficiency: (1) failure of competition; (2) public goods; (3) externalities; (4) incomplete markets; (5) information failures and (6) unemployment, inflation and disequilibrium. One way that government intervenes in the economy is through regulations. This is justified from the economic standpoint when the social benefits exceed the costs to the economy. The basic idea here seems to be that the existence of government reflects more than just the pursuit of political or social agendas but also the implementation of public policies needed to guide, correct and supplement market conditions.

Since regulatory administration enforces standards and follows procedures, its shape and scope are strongly affected by the form and nature of legal systems. The legal and administrative systems, e.g. the civil service affect the form of the regulatory agency, its manner of operation and its relationship to the rest of the government.

### *Adjustment Policies, Regulations, Households and Firms*

Regulation has been defined as "the intentional restriction of choice by a party not directly involved in or performing, the regulated activity" (Mitnick 1980). More specifically, it involves activities which (a) affect the operating business environment of private enterprise including market entry and exit, rate; price and profit structures, and competition; (b) control specific services or products through permit, certification or licensing requirements as provided by law or policy, and (c) relate to the development, administration and enforcement of national standards normally by a designated public agency.

Control can be formally imposed through a defined scope of functions and authorities. Proper authority is often prescribed and conveyed through (a) corporate charters; (b) a franchise which often is legislated and with a timeframe; (c) the grant of certificate, permit or license; and (d) a certificate of public convenience and necessity as in the case of transport utilities.

Firms and households engaged in production for the market who are mostly found in the informal sector are affected by government regulations especially those which regulate productive activities. Rules, laws and regulations define the boundaries of their productive endeavors. These have to do with (a) entry and ownership conditions; (b) access to inputs and fiscal treatment of the given business activity; (c) input pricing and costs; (d) public safety; (f) exit conditions; (g) and other regulations. These regulations seem to drive a wedge between what economic agents can earn in a regime of minimal or no regulations and what they in fact earn under a heavily regulated environment. In a certain sense "there is a differential between the profit that can be achieved by the unregulated firm and the profit that is permitted under regulation" (Bailey ).

An interesting point here is the interaction between the adjustment program and the presence of regulations. As explained in Section III of this paper, the implementation of adjustment policies may change the composition of output of the economy and may result into the shift of employment towards the expanding sectors. The structure of incentives may favor the production of more tradable goods relative to non-tradables. Some sectors of the economy like power, transportation and communications belong to the non-tradable sector of the economy. Regulations and other government restrictions on the non-tradable sector will result to inefficiency and unreliability of supply of non-tradable goods. If these goods are inputs to the tradable sector say, power as an input to garment exports, then the high costs of inputs sourced from the non-tradable sector will have an adverse impact on the competitiveness of the export sector and the economy in general. Households and firms that are engaged in the production of tradables will therefore be adversely affected and the entire economy as well as the strict regulatory environment acts like a millstone on the economy.

What this implies is that regulations impose costs of compliance and transaction both to households and firms. In fact, there is a growing research on the costs of formality (de Soto 1989) which essentially show that unnecessary and burdensome government regulations only motivate businesses to stay underground with corresponding costs on the economy's ability to expand output and employment by taking advantage of the economies of scale and scope. There



is, therefore, an ample basis for consistency between a growth-oriented adjustment program and regulatory environment that is conducive to production and employment generation.

An important area of concern is the role and character of regulatory institutions in the economy. It is critical to have institutions which can act flexibly in the face of a liberalizing and deregulating environment. There must be consistency between the liberal atmosphere of the adjustment policies and the regulations that embody these policies. There must also be a corresponding liberalization or change in the mindsets and behavior of institutions which implement regulations. But because bureaucrats and politicians suffer from the inertia of discretionary power, there may be reluctance on their part to push for a more relaxed regulatory environment following the adoption of an adjustment program. It is not enough to have a sound adjustment and regulatory framework; it is imperative that implementors will be more than willing to have a smaller role for government in the market economy.

## 2. Recent Trends in Deregulation

The Philippines has pursued the market-orientation of economic policies and consequently has deregulated to some extent a number of sectors, namely, agriculture, financial sector, transportation, telecommunications and the power sector. This section mentions briefly the deregulation attempts in those sectors and then, focuses on the power sector which was chosen by the MIMAP Project as a case in point to illustrate the impacts of regulations on households and firms.

The deregulation in agriculture since the early 1980s phased out price and quantitative controls, levies and certain taxes and the elimination of barriers to entry. In the financial sector, the 1980 reforms sought to foster competitive conditions in the financial markets and improve the availability of medium-and long-term funds to the industrial sector. They included reforms on pricing policies for the various financial assets as well as on the structure of the financial system, such as more liberal bank entry and branching policy and a clearer role for government financial institutions in the financial system, among others. In transportation, some of the deregulation policies introduced are (1) the one-airline policy for international and domestic operation ; (2) the upgrading of existing bus fleets; (3) the demonopolization of cargo handling services in the government ports; (4) the privatization of Philippine Airlines and (5) the full or partial decontrol of transport fare rates. On the other hand, in telecommunications, the gradual reduction of barriers to entry and price control and the devolution of regulatory powers to regional offices and local governments units (LGUs) are being pursued by the National Telecommunications Commission.

The MIMAP Project chose the power sector as a component of the project for a number of reasons. First, the power sector plays a key role in the economy. The availability of power bears upon the viability and competitiveness of the entire economy, especially of those sectors which are quite vulnerable to the absence or erratic availability of power, such as the export-oriented garments and electronics industries. This fact has been amply demonstrated in the recent experience with power outages which cost untold millions of pesos in opportunity losses. Given an estimated elasticity of power demand relative to GNP of 1.2 to 1.5, energy supply has

failed to keep up with the average annual economic growth of 4.5 percent in 1986-90. The consequences are economically costly outages.

**Second**, power is a vital non-tradable good. Its availability and price influence the competitiveness not only of the entire economy, but especially of power-dependent tradable goods. In an open economy situation an adjustment program intends to liberalize markets towards producing for world consumption. To achieve this goal, policymakers have to reckon with regulations which limit not only the competitiveness but also raise the costs of producing tradable goods. In the case of the power sector regulations result into inefficiency and unreliability of supply of power, a non-tradable good which is an input into the tradable sector.

**Third**, there are vital backward linkages of the power sector with other sectors that policymakers have to consider. For example, the exploitation of some indigenous energy sources has major economic and social implications especially on the type of affected communities, households, occupational groups and labor skills involved. Hydro, geothermal and dendro sources of energy are usually located in natural habitats where upland dwellers, cultural communities and other socio-economic groups are dependent on natural resources for their livelihood and sustenance and are vulnerable to adjustment policies.

### 3. Impacts on Households and Firms and Some Hypotheses

An intricate web of government regulations and a complex institutional structure oversee the power sector. The power sector has two major components: (a) electric power generation (EPG) and (b) electric power distribution (EPD). Power generation is affected by both the external (world) environment and internal policies, regulations and institutions which determine the available supply and prices of imported and local energy inputs, principally oil and coal. The exchange rate, the level and structure of tariffs and the allocation of the government budget have major implications on the cost of fuel and other inputs in the EPG sector. Regulation of the EPG sector cover four broad areas, namely: (a) entry; (b) pricing; (c) operations and (d) exit. On the other hand, EPD has to do with the institutional arrangements for service coverage, mode of distribution and pricing. Electricity is distributed either by public or private utilities or both with specific service areas defined by their respective franchises and operating permits.

Non-market regulations covering EPG and EPD involve public safety, environmental integrity and interconnection facilities. Various regulatory bodies implement these regulations. For instance, clearance and permit covering location and the environment are required by these bodies prior to an energy project implementation. These have implications on the quality of service and return on investments through the costs of the design, technical compatibility of projects and revenue sharing arrangements with existing operating systems. The ability of regulatory bodies to assess the technical, environmental, economic and social costs and benefits of the proposed projects will be critical in the grant of operating permits and effective monitoring of performance.

The first set of regulations affecting the sector follows the Constitutional requirement to limit the exploitation and development of the natural resources to three modalities: (1) co-

production; (2) production sharing and (3) joint venture. This is a new approach which will allow the government to improve its share of the returns from the exploitation of natural resources in contrast to the concession approach authorized before. Some ownership restrictions exist, like nationality requirements in the case of foreigners.

The second consists of entry conditions in power generation. Before the National Power Corporation had the monopoly on power generation and distribution. This has been lifted by Executive Order 215 although it allows conditioned entry, due to a number of requirements that have to be satisfied by new entrants. In addition to this, the government has also allowed the lease and sale of government assets to the private sector.

Third, participants in power generation, distribution and related activities have to comply with laws on franchise. The improvement here was that the grant by RA 6957 of the utility franchise to the lowest bidder by the concerned infrastructure agency or the local government unit having jurisdiction on the project.

Fourth, in the case of inputs the ability of EPGD operators to provide viable service is influenced by some administrative restrictions like clearance from the Energy Regulatory Board for (1) coal importation to encourage the use of local resources; (2) the importation of refined petroleum products and electric generator sets used by entities other than public utilities.

Fifth, an important concern is the provision of the new Local Government Code on the sharing of the national wealth and the imposition of franchise taxes. Local government units and affected communities may become more receptive to EPGD projects due to the sharing of royalties and other income from the utilization of natural resources.

In sum there have been various attempts to deregulate entry, ownership and operations regulations/conditions in the EPGD. However, the pricing aspects of the sector is still very much subject to regulations. This is inconsistent with the adjustment program and the deregulation trends in the economy and clearly impacts adversely first, on the efficiency of the EPGD and secondly, on households and firms as explained in our framework. In addition, access and equity issues need to address the conflict between cost recovery and the need to assist the vulnerable groups to cope up with or adjust to the new economic framework.

Households and firms are directly affected by energy source development, electric power generation and distribution through (1) the nature, source and relative prices of fuel that they consume; (2) the demand of power-dependent firms for labor; (3) the availability of public goods and services which are produced by the state which is also a power consumer. The impact on households is conditioned by their observed response to electric power rates as measured by elasticities of demand relative to price and income and the cross elasticity of fuel substitution such as from electricity to fuelwood. The income elasticity of household energy demand is generally less than unity. It is higher for low-income groups and therefore energy prices have a very significant distributive effect. This often leads to differential pricing of energy products with bias in favor of fuel products like kerosene and electricity used mainly by poor households.

The demand of firms for labor depends on both the direct and indirect effects of changes in the price of energy on such firms. This will in turn depend on the energy-intensity of firms, inter-fuel substitution and the substitutability between energy and other factors of production. Based on OECD studies the elasticity of substitution between labor and energy ranges from 0.6 to 2.2 depending on the degree of aggregation, the estimation period and the estimation procedure. On inter-fuel substitution, the values of cross-price elasticities are generally lower at the household level than at the firm level due to the high capital costs of shifting that is induced by changing relative prices.

The decision to have a lesser government presence in the economy augurs well for its future growth. An adjustment program to be successful must also have as a component the review and rationalization of the economy's regulatory framework. That regulations have a pervasive effect on households and firms can not be overemphasized. Moreover, the government cannot pretend to have the resources to finance and promote development; it must, therefore, give the private sector an enlarged role in the economy.

It is mainly in this context and alongside the need to pursue an adjustment program that is sensitive to its impact on households and firms, especially the vulnerable groups that the regulatory aspects of economic policymaking must undergo review. If privatization is to be encouraged, the stifling hold of heavy market regulation must be relaxed. Instead, government may have to concentrate on nonmarket-related regulations, e.g., to improve public safety, to ensure compliance with performance standards where monopoly privileges to operate are conferred, and to protect the natural environment.

The review of regulations must address legal and other government regulations/restrictions and institutions which create disincentives to private enterprise and make the cost of becoming formal, aboveground enterprises too high for informal enterprises. Deregulation must be comprehensively pursued across all sectors and accompanied by other modes of liberalization, such as decentralization, if the ultimate objective of freeing private initiatives and efficient resource allocation are to be achieved. The systematic review and reform of the regulatory framework across and within sectors can yield efficiency gains.

The Philippine experience in the 1980s and 1990s shows a mixed trend of more and less regulations. There are less regulations now in the fields of industry, agriculture, finance and utilities. On the other hand, there are more regulations affecting the natural environment. Similarly, legal and administrative requirements on public consultations, whether on proposed policies or investment projects are now imposed and dictated by political realities. A wide scope for further regulatory reforms exist in many sectors.

Households, whether as consumers or providers of labor services, have been affected differently depending on which sector and aspect of operations have been delivered from restrictions. In the case of regulations on public safety and the natural environment, trade-offs often exist between immediate investments and jobs and safer but costlier projects. Conflict resolution with compensation mechanisms are critical in addressing such trade-offs preferably outside the ambit of the judiciary to avoid unnecessary legal complications.

## **V. MONITORING SYSTEMS**

### **A. INTRODUCTION**

The two basic issues in monitoring the household impact of macroeconomic adjustment policies deal with: (1) the object; and (2) the design of the monitoring system. The object of the monitoring system is defined in terms of who shall be monitored, what is to be monitored about them, and how frequent will the reporting be. The design of the monitoring system, on the other hand, has to deal with: (1) the data generators at the field level; (2) the organizational structure that will manage the data flow from the field to every geopolitical level for processing and/or analysis and that will determine the computer hardware and software requirements; and (3) the relationship of this system with the relevant existing monitoring systems.

The object of a MIMAP monitoring system should be the population groups, firms and individuals most vulnerable to macroeconomic adjustment programs. It is necessary that the critical indicators in the whole range of processes and outcomes in the transmission path from changes in macroeconomic policies to firms, household and individual outcomes shall be monitored. This is because while monitoring the final impact of macroeconomic adjustment policies on households and individuals is the ultimate aim, it is also equally important that intermediate processes and outcomes be monitored in order to know and appreciate the role of intermediate outcomes along the transmission path on the final impact. In particular, in processes that determine social sector outcomes, the intervening links spell the difference in appreciating the final impact on households of changes in market outcomes (Herrin 1992). Furthermore, while the final household and individual outcomes will determine the effectiveness of the macroeconomic adjustment programs, the intermediate processes and outcomes will be useful in evaluating the soundness of the assumptions employed in the design of adjustment policies.

The vulnerable groups are typically small entrepreneurs in the informal sector, small lowland and upland farmers, small fisherfolk, small scale miners and daily wage workers. Within households the vulnerable members are children and women.

For individuals and population groups, what needs to be monitored are the ultimate indicators of welfare and the immediate determinants of welfare. Human welfare can be measured by various indicators, but survival is the best final indicator of human welfare. The immediate determinants of survival are nutritional status, morbidity and health status, literacy and housing condition. These are, in turn, determined by adequate food, adequate and accessible medical care and other public services, potable water supply and adequate environmental sanitation, and basic education (Florentino 1992).

The indicators for the transmission mechanisms can be divided into those that operate at the market level, and those that operate within the household. At the market level, the indicators shall include relative prices of output, relative returns to inputs, sectoral and geographic distribution of government expenditures, rate of natural resource depletion, gender composition

of employment by sector and occupational groups, changes in the directions of investments, changes in tenure/ownership of assets, access to both formal and informal capital markets, indicators on the regulatory environment, productivity and type of technology used by informal enterprises, degree of competition in the informal sector, industry concentration and linkages with the formal sector. The indicators of the transmission mechanisms within the household include changes in the household consumption and human capital investment patterns, changes in the employment patterns of household members, changes in women's time between productive, reproductive, and community managing roles.

At the macro level, the information required will include macroeconomic policies and macroeconomic variables. Macroeconomic policies will include monetary, fiscal, exchange rate and trade policies as well as sectoral policies. Macroeconomic variables will include the general price level, exchange rate, interest rate, money supply, tariff structure, government expenditures/revenues/ deficits, aggregate demand and output.

The issues and approaches to the design of the monitoring system will be discussed below. This is because the design will largely depend on the kind of indicators required.

## **B. INDICATORS**

### **1. Macroeconomic Policies and Variables**

#### **1.1 Policies**

- monetary policies
- fiscal policies
- exchange rate policies
- trade policies
- sectoral policies

#### **1.2 Macroeconomic Variables**

- exchange rate
- interest rate
- general price level
- money supply
- government expenditure/revenues/deficit
- aggregate demand
- output

### **2. Transmission Mechanisms**

#### **2.1 Market Level**

- relative prices of products

- relative wages
- relative rents for factors
- sectoral allocation of government expenditures
- regional distribution of government infrastructure
- gender composition of employment by sector and occupational groups
- distribution of assets by tenure/ownership status
- distribution of new business registration and paid-in capital by sector.
- cost of major purchased inputs relative to the farm-gate/fishport price of the product
- rate of deforestation
- rate of decline in productivity
- rate of shifting from one resource type (e.g. public land) to another (i.e. cropland)
- catch per unit effort
- rate of use of destructive utilization methods
- rate of effluent discharges
- access to both formal and informal capital markets
- productivity and type of technology used by the informal sector
- industry concentration of informal sector
- linkages of informal sector with formal sector (product complementarity or subcontracting)
- income of informal enterprises

## 2.2 Within the Household

- proportion of children who are working
- proportion of women's time in productive, reproductive, and community managing roles
- calorie and energy intake relative to RDA, by sex, by age-group

## 3. Household/Individual Welfare

Those marked (\*\*) are key indicators and those with (\*) are support indicators. The support indicators come from currently operating monitoring systems of the statistical system. In parenthesis are individuals / institutions responsible for data gathering and the data reporting frequency, respectively.

### 3.1 Survival

- Under-five mortality rate, by sex [U5MR] (Community Monitor (CM), Monthly)\*\*
- life expectancy at birth, by sex (NSO, annual)\*

### 3.2 Nutritional Status

- prevalence of preschool underweight, by sex [among nutritionally at risk/socioeconomically disadvantaged households] (BHW/BNS/Midwife, Annual)\*\*
- prevalence of preschool underweight and wasting, by sex (FNRI,bi-annual)\*

### 3.3 Health Status

- incidence rate of diarrhea among under-five children, by sex (CM/Midwife, Monthly)\*\*
- Mortality/Morbidity rates of communicable diseases, by sex (DOH, Annual)\*

### 3.4 Housing

- percentage of households in makeshift housing made of light materials (CM/Social Worker (SW), Annual)\*\*
- distribution of households by type of materials (NSO, quinquennial)\*

### 3.5 Adequacy of Food

- proportion of households taking one meal or less a day (SW,Monthly)\*\*
- proportion of the population or households with energy intake less than 80% of recommended dietary allowance (RDA) (FNRI,quinquennial)\*
- proportion of Grade VI pupils (households) with less than acceptable diet score, by sex (Planning and Development Office (PDO), annual)\*

### 3.6 Public Services

- proportion of households with access to sanitary toilet facilities (CM/BHW/SW, Annual)\*\*
- proportion of households with access to potable water supply (CM/BHW/SW,Annual)\*\*
- ratio of RHU and BHS to population/households (MHO,annual)\*
- proportion of unemployed/underemployed who availed of skills training, by sex (PDO, annual)\*

### 3.7 Basic Education

- elementary schools enrollment rate and dropout rate, by sex (School Principal, Annual)\*\*
- average educational attainment, by sex (PDO,quinquennial)\*
- adult basic literacy rate, by sex (PDO,quinquennial)\*

### 3.8 Income

- percentage of households with most basic possessions [no luxury items] (CM, Annual)\*\*
- median family income by major occupational group of household head (NSO, Triennial)\*
- mean income of families in bottom 30% (NSO,Triennial)\*
- percentage of household below the poverty line (NSO,triennial)\*



### 3.9 Employment

- unemployment/underemployment rate, by sex (CM/SW, Monthly)\*\*
- unemployment/underemployment rate, by sex (NSO, Quarterly)\*

### 3.10 Prices of Basic Commodities

- cost of 450g of staple as proportion of average daily wage rate (DTI, Annual)\*\*
- real cost of staple (DTI, quarterly)\*

## C. APPROACHES AND ISSUES IN THE DESIGN OF THE MONITORING SYSTEM

It is obvious that many of the indicators at the macro level are already regularly monitored. As we go down the transmission path to the household, however, indicators become scarce both in required disaggregation of data items and in reporting frequency. A MIMAP monitoring system should be both regular and more frequent in reporting the required indicators.

One crucial issue in the design of the monitoring system is the extent of participation of local level data producers. One view is that local processing is necessary so that remedial measures can be undertaken right away at the field level rather than wait for a national analysis to come out. Another view is that a centralized processing and analysis is necessary to facilitate overall analysis and protect the integrity of the data. However, this may not be necessary if the staff at the local level are properly trained, motivated and appreciative of the efforts.

Another issue is the coverage of the monitoring system. One view is that a statistically adequate number of randomly selected economically depressed municipalities can serve as index or sentinel areas for MIMAP monitoring. Another view, of course, is that no less than a national statistically representative sample is required to be definitive on any statement of the impact of adjustment programs. The choice will largely depend on which is more important, frequency and timeliness or coverage and representativeness. Our preference is for the former because of our desire to provide a quicker feedback mechanism to policy makers.

The proposed use of community volunteer monitors as key informants may have overextended the dependence of the system on volunteerism. This fear is based on the performance of the current administrative reporting systems where even those mandated by law fail to deliver on their duties (Africa 1992). This point is important in the deciding who shall be utilized as key field data generators.

There is another issue regarding the monitoring of impacts on individuals within households as well as those in resource and environment studies. This will undoubtedly require detailed household surveys which will not only measure indicators with the household as a unit, but also down to the level of individual members as well as how households interact with his environment. As such, this will require in-depth household surveys and community monitors or any rapid assessment systems will be inappropriate for this activity. This is where timeliness

and frequency may be sacrificed for depth. The studies where this kind of data are required will make use of any longitudinal data generated for studies on the dynamics of both intrahousehold allocation as well as natural resource depletion.

Perhaps the final issue is whether MIMAP monitoring requires an independent organization to manage the data flow or should it be merely a rider to an existing monitoring system. At the village level, there are at least two community-based monitoring systems being developed. One is the one being developed under the DPSS project jointly being undertaken by the Congressional Planning and Budget Office, the National Statistics Office and the Philippine Rural Reconstruction Movement. Another is the National Statistical Coordinating Board's Community-based Child Monitoring System. The other alternative is the different administrative reporting systems. Still another alternative is the Integrated Survey of Households which is done quarterly. The major problem is that the objectives of these systems are different from those of MIMAP. This will pose an important obstacle in the desire for MIMAP monitoring to focus on the population groups, firms, households and individuals most vulnerable to changes macroeconomic policies.

On the role of existing monitoring systems, it was proposed that since these systems produced inadequate data in terms of frequency (except for the Integrated Survey of Households (ISH) which is mainly for monitoring employment) and data items, these shall be utilized as sources of support indicators to describe the nation as a whole and not only sentinel areas. The section on the household/individual welfare indicators has shown how currently available indicators can be used to support primary indicators that will be gathered by a MIMAP monitoring system. In addition, the current national surveys will also be useful in testing hypotheses presented above and in producing initial estimates of the needed parameters of a simulation model that will be useful for counterfactual analyses and evaluation of existing and proposed adjustment programs. These activities will likely require the merging of different existing household surveys. Furthermore, it maybe fruitful to utilize the sampling frame that NSO uses in its household surveys to allow possible merging with other surveys.

#### **D. THE PROPOSED MONITORING SYSTEM**

Let us first define the features of the desired MIMAP monitoring system before specifying its components. The MIMAP monitoring system should have the following features:

1. It includes indicators that are highly sensitive to changes in macroeconomic policies and allow hypotheses developed earlier to be tested and simulation models developed.
2. It makes use of existing data gathering systems and institutions with minimal additional indicators to be collected regularly as a rider where appropriate. For other indicators they may be collected for households, firms, and individuals most vulnerable to adjustment policies.

3. The data collection and processing system should be decentralized although analysis can be centralized.

The discussion above conveys that there are existing monitoring systems that gather relevant indicators needed by MIMAP but these are not done in the required frequency, particularly at the household level. The only exception, in terms of frequency, is the quarterly Integrated Survey of Households. In addition, for macroeconomic variables and indicators of transmission mechanisms at the market level, these are currently available in the desired frequency and perhaps also in the desired disaggregation. Then an effective MIMAP monitoring system should utilize these existing monitoring systems and its organizational structures. This augurs well with the view that while in the early stages the MIMAP Project Management Office (PMO) may closely supervise the development and installation of the MIMAP monitoring system. The institutionalization of the system, however, is the long-term objective.

Given the foregoing considerations, the proposed monitoring system will consist of three major groups of activities. First, is the gathering of secondary indicators on macro policies, macro variables and transmission mechanisms at the market level. This will be one of the main activities of research assistants at the PMO. For this set of data the frequency of reporting is semestral. Second, is the generation of primary data at the household and firm level not available in the ISH but needed by MIMAP. This will be addressed by rider module(s) to the ISH. What data items to include in the rider module(s) will be determined by the data requirements of two major activities in Phase III. These are: (i) the testing of hypotheses presented above; and (ii) the development of a simulation model that will be used for counterfactual exercises. The rider(s), however, will only be implemented in subject areas of the studies; i.e. depressed villages for studies on the poor households; coastal, upland, and mining villages for resource and environment studies; city sub-sections for industrial informal sector studies. Again the proposed frequency is semestral to coincide with the reporting frequency of the first data set. A quarterly reporting system may be too frequent for thorough analyses of the data generated. Third, is the generation of primary data on intrahousehold allocations and for resource and environment studies. Due to the implied detail of this data set and the premium for frequency in the analyses of the impact of macroeconomic policies up to the household level, intrahousehold allocation issues and resource and environment issues will have to be addressed in different and less frequent surveys. The proposed frequency is annual. The linking key to the other two data sets is that respondent households in these surveys will be taken from the sample in the second data set. Efforts will be exerted to make this data set longitudinal so as to address dynamic issues in intrahousehold allocation and resource depletion. This data set will be gathered with the assistance of NGOs operating in subject areas. This strategy will entail training of village level data generators in the collection and processing of data. All data sets will be maintained at the PMO for analysis and reporting purposes.

## ANNEX

### TERMS OF REFERENCE OF INDIVIDUAL PRINCIPAL INVESTIGATORS

#### 1. MACROECONOMIC ANALYSIS - Dr. Benjamin Diokno, UPSE

This paper will identify the scale and evolution of those macro imbalances and discuss the various courses of action that might allow the country to deal with these imbalances. In so doing, this paper will provide a framework that sets out the constraints within which policy choices in specific sectors have to be made. At the same time, the significance of the various developments that will be identified at the micro level can only be assessed in relation to their effect on easing or tightening this initial set of constraints. One key question to ask is: "What outcomes at the micro level would have to occur if the existing macro adjustment policies are to succeed in easing rather than worsening the initial imbalances?" This paper should address policies and transmission mechanisms in a broad and general level. The results here can serve as inputs in other component areas in this Project. It might also be worthwhile here to explore the role of various quantitative models, such as the CGE model, in performing macroeconomic policy analysis.

#### 2. MONITORING - Dr. Rodolfo Florentino, FNRI

This paper will focus primarily on a more precise and reliable identification of the most vulnerable groups to policy changes, irrespective of whether they belong to the formal and informal sectors or whether these are defined regionally, sectorally, occupationally and/or by age, by gender, by ethnicity or by some other factor. One of the first tasks is to provide a summary of existing data regarding changes in social and in welfare conditions over the past few years. Section VI of the general framework paper by Lamberte *et al.* provides a good starting point. It is hoped that this paper will generate best estimates of recent welfare trends based on all presently available information and to identify those additional bits of information that could most effectively test the validity of those estimates. The ultimate aim of this paper is to design a reliable monitoring system that can quickly produce information on micro impacts of macroeconomic adjustment policies on a timely and regular basis.

#### 3. AGRICULTURAL SECTOR - Dr. Ramon Clarete, UPSE

This paper will focus on the changes that have been occurring in the level and the patterns of production and labor use in the agricultural sector. It should ask whether the sector is moving towards a more viable and sustainable pattern of growth that could eventually help to ease simultaneously the foreign exchange problem, the food price and food availability problem, the urbanization/rural labor absorption problem and the income distribution/poverty problem.

4. **NATURAL RESOURCE AND ENVIRONMENT SECTOR - Dr. Herminia Francisco, UPLB**

The paper might begin by summarizing the evidence regarding the extent of the degradation that has already occurred in various areas, i.e., forestry, coastal fishing, etc., and attempt some estimates of the point at which these problems might begin to have a discontinuous impact on output and productivity, on welfare and health and/or on the quality of life more generally defined. The works of Dr. Marian de los Angeles of PIDS on these issues would be a good source of information. Where necessary and feasible, the paper should define research activities that could enhance the ability to make such judgments about the future. The paper should also be able to establish linkage between the level and pattern of agricultural production and the environment.

5. **INDUSTRIAL AND INFORMAL SECTORS - Dr. Ramon Quesada, CRC**

This paper needs to focus on two central issues. First, to what extent is it possible to see the growth of informal activities that has occurred in the context of recent adjustment policies as a positive change, likely to enhance and accelerate the long term process of accumulation and growth in the economy; and to what extent is this phenomenon more likely to reflect a process of economic decline and prospects. Second, to what extent is there evidence to indicate that current policies are leading to the emergence of a successful competitive industrial base that has the capacity to expand manufacturing exports in the longer term, that is likely to repatriate a significant proportion of its future earnings and profits for reinvestment in the Philippines; and that is also prepared to contribute through taxes to the financing of the educational and infrastructure base that will determine the future attractiveness of Philippines to all investors.

6. **SOCIAL SERVICES SECTORS - Dr. Alejandro Herrin, UPSE**

This paper might begin by summarizing the evidence regarding trends in both the quantity and quality of social services being received in recent years in the Philippines. It will then seek to identify the distributional impact of these trends; consider their efficiency implications; and attempt to make estimates of the degree to which one could realistically expect to resolve this impending problem through increasing efficiency in the use of resources devoted to social services. This paper should be closely linked with the paper on monitoring system since the latter will be focusing on a narrow set of social indicators. While the latter focuses on empirical indicators important to various steps of analysis, the former, on the other hand, will try to relate those various indicators among themselves and with other indicators as the testable hypotheses suggest.

## 7. GOVERNMENT REGULATIONS - Dr. Wilfredo G. Nuqui, UNICEF

The main issue here would appear to be the feasibility or desirability of attempting to regulate various activities either through market mechanisms or through more direct administrative forms of control. The paper might begin with a discussion on the economics of regulation and paint a broad picture of the ongoing deregulation efforts in the Philippines. Then the paper might proceed by focusing on one industry, say housing, and examine the regulatory environment. The works of researchers in Latin America will greatly help in the formulation of research agenda in this area. It is worthwhile to note that this is one area where special attention be given to the transmission mechanisms. The focus on housing industry will strengthen the linkage of this paper with the macroeconomic analysis paper and the industry and informal sector paper.

## 8. IMPACTS ON WOMEN - Ms. Jeanne Frances Illo, IPC

The issues to be covered here cut across the issues that will be covered in other papers, but with special emphasis on gender issues. For instance, the studies on the informal sector suggest a much larger role for women in the adjustment process at the community and household levels. Coping mechanisms discussed in the general framework paper by Lamberte *et al.* will be worthwhile examining at the community and household levels, particularly from the gender perspective.

## BIBLIOGRAPHY

- Akin, John, S., C. Griffin, D.K. Guilley and B.M. Popkin. *The Demand for Primary Health Care in the Third World*. Totowa, New Jersey: Rowman and Allanheld, 1984.
- Alonzo, Ruperto P. "The Informal Sector in the Philippines." *The Silent Revolution*, 1991.
- \_\_\_\_\_ and Maria Alcestis Abrera-Mangahas. "The Informal Sector in Metro Manila: Findings from a Recent Survey." Geneva: International Labor Organization, 1990.
- Appleton, Simon, "Gender Dimension of Structural Adjustment: The Role of Economic Theory and Quantitative Analysis," *IDS Ballets* Vol. XXII, No. 1 (1991).
- Arboleda, Heidi, "Measurement of the Informal Sector." Paper presented at the Fifth National Convention on Statistics. Quezon City, 1989.
- Azarcon, Chulia. "Tariff Policies in Agriculture." Unpublished manuscript, 1987.
- Bailey, Elizabeth E. *Economic Theory of Regulatory Constraint*. Bell Telephone Laboratories and New York University.
- Balisacan, Arsenio M. "Deregulation in Philippine Agriculture: Has it Benefitted the Rural Poor?" Working Paper Series No. 91-06. Research and Training Program for Agricultural Policy (RTDAP), 1991.
- Bautista, Romeo, J.H. Power and Associates, *Industrial Promotion Policies in the Philippines*. Makati: Philippine Institute for Development Studies, 1979.
- Behrman, Jere R., and Anil B. Deolalikar. "The Poor and the Social Sectors During a Period of Macroeconomic Adjustment: Empirical Evidence for Jamaica," 1991.
- \_\_\_\_\_. "Health and Nutrition" in H. Chancery and T.N. Srinivasan (eds) *Handbook of Development Economics*, Amsterdam, 1988.
- Blejer, Mario I. and Ke-young Chu. "Fiscal Policy, Labor Markets, and the Poor." Working Paper No. 90-62. Washington, D.C.: International Monetary Fund, 1990.
- Blejer, Mario I. and Alain Ize, "Adjustment Uncertainty, Confidence and Growth: Latin America After the Debt Crisis." Working Paper No. 89-105. Washington D.C.: International Monetary Fund, 1989.
- Bouis, Howarth E. and Lawrence J. Haddad. "Effect of Agricultural Commercialization on Land Tenure, Household Resource Allocation, and Nutrition in the Philippines", Research Report 79. International Food Policy Research Institute, 1990.

- Clarete, Ramon L. "Structural Adjustment and Agriculture: Developing a Research Analytical Framework." Working Paper Series No. 92-21. Makati: Philippine Institute for Development Studies, 1992.
- \_\_\_\_\_. "Is the Value Added Tax Sector Neutral?". Working Paper Series No. 91-07. Research and Training Program for Agricultural Policy (RTPAP). Mimeographed, 1991.
- \_\_\_\_\_. "General Equilibrium Effects of the E.O. 413 Tariff Reforms in the Philippines." PCED Research Paper, U.P. School of Economics. Mimeograph, 1991a.
- \_\_\_\_\_. *E.O. 470: The Economic Effects of the 1991 Tariff Policy Reforms.* A Report for the United States Agency for International Development, 1991b.
- \_\_\_\_\_. "The Economic Effects of Trade Liberalization on Philippine Agriculture." *The Philippine Review of Economics and Business*, Vol. XXVI, No. 2, 1989.
- \_\_\_\_\_ and Peter G. Warr, 1992. "The Theoretical Structure of the APEX Model of the Philippine Economy." Paper Presented at the Workshop on the APEX Computable General Equilibrium Model of the Philippine Economy, Hotel Nikko Manila Garden, August 14, 1992.
- Ching, P. "Charging Health Care user Fees in the Philippines: Implications on Access Across Income Groups". Unpublished manuscript, 1991.
- Demery, Lionel and Tony Addison. "Stabilization Policy and Income Distribution in Developing Countries." *World Development* 15, No. 12 (1987): 1483-98.
- de Soto, Hernando. The Other Path: The Invisible Revolution in the Third World. New York: McGraw-Hill, 1989.
- Donges, J., A Summary. Occasional Paper No. 15, International Center for Economic Growth, 1991.
- Garcia, Marita. "Resource Allocation and Household Welfare: A Study of the Impact of Personal Survey Income on Food Consumption; Nutrition and Health in the Philippines." Dissertation submitted to the Institute of Social Studies, The Hague, Netherlands, 1991.
- Garcia, M. and Per Pinstrup-Andersen. "The Pilot Food Price Subsidy Scheme in the Philippines: Its Impact on Income, Food Consumption, and Nutritional Status," Research Report 61. International Food Policy Research Institute, 1987.
- Habito, Cielito F. "Equity and Efficiency Tradeoffs in Philippine Tax Policy Analysis: A General Equilibrium Approach." Unpublished Ph.D. Dissertation. Harvard University, 1984.



- Harris, Robert G. "Structural Adjustment Through Industry Deregulation: The US Experience in Telecommunication and Transportation," in Yasuba Yasukichi (ed).
- Herrin, Alejandro N. "Consequences of Population Change in the Philippines." Paper prepared for the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), 1992.
- \_\_\_\_\_. "Nutrition: Consequences, Determinants and Policy Intervention." Paper prepared for National Nutrition Council, 1990.
- \_\_\_\_\_ and M. Bautista. "Health and Development: Determinants and Consequences" in Survey of Philippine Development Research II. Makati: Philippine Institute for Development Studies, 1982.
- Horton, Susan, Ravi Kanbur, and Dipak Mazumdar. "Labor Markets in an Era of Adjustment: Evidence from 12 Developing Countries." *International Labour Review*. 1991.
- Illo, Jeanne Frances I. "Irrigation in the Philippines: Impact on Women and their Households." The Aslong Project. *Women's Roles and Gender Differences in Development: Cases for Planners*, Asia, No. 2. Bangkok: The Population Council, 1988.
- \_\_\_\_\_ and Cecile C. Uy. "Members But Not Leaders: Finding a Niche for Women in Cooperatives." *The NATCCO Enhancement of Women in Cooperatives Project*. Quezon City: Institute of Philippine Culture. Forthcoming.
- Lee, C. *Impact Effects of the Tariff Reform Program: Methodology for Estimation*. Tariff Commission. Mimeographed. 1984.
- Licuanan, Patricia B. "A Situation Analysis of Women in the Philippines". In *Gender Analysis and Planning: The 1990 IPC-CIDA Workshops with Jeanne Frances I. Illo*, ed. Quezon City: Institute of Philippine Culture, Ateneo de Manila University, 1991.
- Manasan, Rosario G. "Review of Export Incentives in the Philippines," 1989.
- Medalla, Erlinda M. "Assessment of the Tariff Reform Program: Methodology for Estimation". Staff Paper Series. Makati: Tariff Commission-Philippine Institute for Development Studies Joint Research Project, 1986.
- Mitnick, Barry. "The Political Economy of Regulation." New York, 1980.
- Moser, Caroline. "Gender Planning in the Third World: Meeting Practical and Strategic Gender Needs." *World Development* 17, 11 (1989): 1799-1825.
- Musgrave, R. and P. Musgrave. Public Finance in Theory and Practice. New York: McGraw Hill, 1990.

- Paqueo, V.B. "An Econometric Analysis of Educational Attainment Among Elementary School Age Children: Preliminary Analysis" in *Transactions of the National Academy of Science and Technology, Republic of the Philippines*, Volume VII. Metro Manila: The Academy, 1985.
- Sahn, David C. and Alexander Sarries. "Structural Adjustment and the Welfare of Rural Smallholders: A Comparative Analysis from Sub-Saharan Africa," 1991.
- Schwartz, J. Brad, J.S. Akin and B.M. Popkin. "Price and Income Elasticities of Demand for Modern Health Care: The Case of Infant Delivery in the Philippines." *The World Bank Economic Review* 2, 1 (1988): 49-76.
- Seligman, Fe. "Philippine Agricultural Tariff and Non-Tariff Measures (Food)." Staff paper Series. Makati: Tariff Commission-Philippine Institute for Development Studies Joint Research Project, 1987.
- Selowsky, M. and L. Taylor. "The Economics of Malnourished Children: An Example of Disinvestment in Human Capital." *Economic Development and Cultural Change* 22 (1973): 17-30.
- Stiglitz, Joseph. "Economics of the Public Sector," 2nd Edition. New York: WW Norton, 1988.
- Winjbergen, Sweder van. "Interest Rate Management in LDCs" *Journal of Monetary Economics*, (1983): 433-52.
- \_\_\_\_\_. "Stagflationary Effects on Monetary Stabilizaion Policies: A Quantitative Analysis of South Korea" *Journal of Development Economics*. April 1982, 133-70.
- World Bank, *World Development Report*, 1991.
- Zamora, Elvira A. Direct Regulatory Control Policies and their Role in Small Enterprise Development in the Philippines: Analysis and Recommendations". *Macro Policies Affecting Small Enterprise Development in the Philippines*. Ottawa, Canada: Appropriate Technology International, Washington, D.C. and International Development Research Centre, 1991.