

MIMAP

Micro Impacts of Macroeconomic Adjustment Policies

PHILIPPINES

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Project Updates

Vol. V No. 4 December 1998

SINCE 1991, A NUMBER OF TARIFF programs have been put in place by the Philippine government as shown in Table 1 which lists down the series of Executive and Memorandum Orders issued. Manasan and Querubin, in their 1997 study, analyzed the impact of these programs both on the implicit tariff rate and effective rate of protection but did not look into the effects on income distribution and resource allocation.

Changes in tariff lead to changes in relative output and factor prices. Which in turn cause resources to move across sectors, leading to shifts in resource allocation. Changes in relative factor prices also affect incomes of institutions, thereby likewise affecting income distribution.

Using an economy-wide model of the Philippines, which was developed under the PIDS-Technical

Resource Project in coordination with the Micro Impacts of Macroeconomic Adjustment Policies (MIMAP) Project, this short paper looks at and analyzes the effects of these implicit tariff changes from 1990 to year 2000 on income distribution and resource allocation.

port-plus-output as weights. This system of weighting overcomes the biases associated with output weights or import weights alone.

To facilitate the analysis, the rates were further aggregated into five major sectors, namely, agricul-

Impact on Income Distribution and Resource Allocation

Tariff Changes: How Do They Affect the Poor?*

Methodology

The analysis starts with the implicit tariff rates of 169 sectors computed by Manasan and Querubin (1997) using price comparisons between domestic prices and border prices. Data on domestic prices were obtained from the National Statistics Office and the Bureau of Agricultural Statistics while data on border prices were taken from the Hongkong Trade Statistics and the Food and Agriculture Organisation (FAO). The rates for the 169 sectors were adjusted for duty exemptions and aggregated into the sectors of the economy-wide model using im-

ture, mining, total manufacturing, food manufacturing and other manufacturing. Simulations were done using 1988 implicit tariff rates in the base run. Then the effects from 1990 to 2000 were compared with the base run using percentage difference. It should be emphasized that the model is not dynamic, but a one-year, static model. Thus, the annual results were derived from independent simulation runs of the model using the annual implicit tariff rates from 1990 to 2000.

Results

This section summarizes the results of the simulations and analyses. Figure 1 shows the movement

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Written by Dr. Caesar B. Cororaton, Research Fellow, Philippine Institute for Development Studies (PIDS) and Assistant Project Director, MIMAP Philippines.

THE IMPACTS OF MACRO-economic Adjustment Policies on the Environment (IMAPE) Project Team-Philippines convened recently to discuss the progress of the work plan of each of the project's components.

IMAPE is a two-year research project which seeks to validate and quantify the environmental effects of changes in macroeconomic policies. In this regard, the project will explore the environmental impact of changes in both sectoral and household activities that are induced by economic reforms. To achieve this, the project will pursue the following studies:

- * Impact of Macroeconomic and Adjustment Policies on the Environment: A Literature Review and a Framework for Analysis and Model-Building

by Ponciano S. Intal, Jr.

- * Development of Environmental Impact Multipliers

by Elvie Orbeta

- * Micro Impacts of Privatization and Government Spending on the Water Sector

by Cristina David and Arlene Inocencio

- * Environmental Impact of Trade Liberalization and Exchange Rate Depreciation: The Case for the Water Sector

by Cristina David and Arlene Inocencio

- * Impact of Macroeconomic Policy-Induced Changes in Household Economic Activities and Demographic Factors on the Environment: The Case of Palawan


by Danilo Israel

- * The Environmental Impact of Macroeconomic and Adjust-

ment Policies: Sector and Household Levels – The Case of Camarines Sur

by Leonardo Lanzona

Commencing in November 1997 under the leadership of Dr. Celia Reyes, who is also the Project Director of the MIMAP-Phils. Project, the project team had spent majority of the past months establishing linkages with prospective consultants, data sources and future users of the project findings.

IMAPE is one of MIMAP's thematic networks, which also cover studies on gender and health, and is funded by the International Development Research Centre (IDRC)-Canada. It is being implemented in the Philippines by the Policy and Development Foundation, Inc. (PDFI). **BEM** 

MIMAP Holds Third Annual Meet

MIMAP COUNTRY REPRESENTATIVES convened for a five-day annual meeting last November 2-6, 1998 in Kathmandu, Nepal to update their various counterparts on the progress of their work on

quantitative modelling and poverty monitoring. Aside from the sharing of individual country experiences, the meeting hosted by the MIMAP-Nepal project team, also took up issues concerning the MIMAP thematic networks, namely, gender,

health, and environment as well as matters regarding the recent financial crisis in Asia.

The presentors and discussants from the Philippines were Dr. Celia Reyes and Dr. Caesar Cororaton, project leaders of MIMAP-Philippines, Dr. Ponciano Intal, Jr., chairman of the MIMAP-Philippines Policy Advisory Council, and Ms. Elvie Orbeta, consultant for the Im-



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of the implicit tariff rates of the five major sectors from 1990 to the turn of the 21st century. One notes that there is a general decline in the implicit tariff rates in all major sec-

tors starting 1995. Food manufacturing still has the highest implicit tariff rate level while mining has the lowest. In 1992, the implicit tariff rate of agriculture crossed the declining rate of other manufactures. It then increased until 1994 and started to decline in 1995. From 1996 to 2000, its implicit tariff rate is above the other manufactures but below total manufactures.

Table 2, meanwhile, shows the effects of changes in implicit tariff rates on income distribution, specifically on 10 household groups. From 1990 to 1994, the changes in the implicit tariff rates were progressive. Households under group 1 or the lowest income decile (first decile) up to household group 7 (seventh decile) enjoyed a positive increase in their shares of the in-

**TABLE 1: LIST OF EXECUTIVE ORDERS AND LEGISLATION AMENDING THE TARIFF CODE
(ACCORDING TO CHRONOLOGICAL DATES)**

Executive Order No. 328 (dated April 23, 1996)

- ◆ modified the nomenclature and rates of import duty on imported wheat for food

Executive Order No. 365 (dated April 16, 1996)

- ◆ modified the rates of duty on crude oil (from 10% to 3%) and refined petroleum product (from 20% to 7%)

Executive Order No. 313 (dated March 29, 1996)

- ◆ modified the nomenclature and rates of import duty on certain imported articles, i.e., sensitive agricultural products
- ◆ implemented tariffication after import restrictions were lifted under R.A. 8178
- ◆ IRR only issued on July 1 and effective July 10, 1996
(Note: major changes)

Executive Order No. 287 (dated January 1, 1996)

- ◆ modified the rate of duty on certain imported articles to implement the 1996 Philippine schedule of tariff reductions under the new frame of the accelerated CEPT scheme for the AFTA

Executive Order No. 288 (dated December 12, 1995)

- ◆ modified the nomenclature and rates of import duty on certain imported articles, i.e., nonsensitive agricultural products
(Note: major changes)

Executive Order No. 264 (dated July 22, 1995)

- ◆ modified the nomenclature and rates of duty on manufacturing industries in line with the Tariff Reform Program; involved 4142 HS lines (Note: major changes)

Executive Order No. 227 (dated March 4, 1995)

- ◆ reduced the import duty on Portland cement (3%), cement clinker (93%), and Pozzolan Cement (10%); this suspended the implementation of the 20 percent and 10 percent under E.O. 470

Executive Order No. 204 (dated September 30, 1994)

- ◆ modified the nomenclature and rates of duty on textile and chemical input thereto (Note: major changes)

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TABLE I (CONT'D)

Executive Order No. 189 (dated July 18, 1994)

- ◆ modified the nomenclature and rates of duty on capital equipment from 10 percent – 20 percent to 3 percent – 10 percent (Note: major changes)

Executive Order No. 172 (dated April 24, 1994)

- ◆ increased the minimum tariff rate from 0 percent to 3 percent

Executive Order No. 160 (dated February 23, 1994)

- ◆ reduced the special duties on crude oil products from P1.90 to P0.95 under Hdg. No. 27.09 and from P2.00 to P1.00 on imported oil products falling under Hdg. No. 27.10 and 27.11

Executive Order No. 153 (dated January 25, 1994)

- ◆ modified the rate of duty on certain imported articles to implement the minimum 90 percent margin of preference included in the NESTLE-ASEAN Industrial Joint Ventures

Executive Order No. 148 (dated December 27, 1993)

- ◆ modified the rate of duty on certain imported articles

Executive Order No. 147 (dated December 27, 1993)

- ◆ modified the rate of import duty on certain imported articles to implement the agreement on the global system of trade preference among developing countries

Executive Order No. 146 (dated December 27, 1993)

- ◆ amended E.O. 43 and modified the margin of preference and the applicable ASEAN preferential tariffs

Executive Order No. 145 (dated December 27, 1993)

- ◆ modified rates of duty on certain imported articles under the CEPT-AFTA

Executive Order No. 119 (dated August 9, 1993)

- ◆ lifted the suspension of the application of the tariff concessions granted by the Philippines on refractory bricks under the AFTA, amending E.O. 106 to reflect technical modifications

Executive Order No. 116 (dated July 29, 1993)

- ◆ amended E.O. No. 94 to conform with nomenclature

Executive Order No. 115 (dated July 24, 1993)

- ◆ increased the special duty of P1.90 per liter or P302.10 per barrel on imported crude oil and oil products under Hdg. No. 27.09 and P2.00 per liter on imported oil products falling under Hdg. No. 27.10 and 27.11

Executive Order No. 106 (dated July 16, 1993)

- ◆ lifted the suspension of the application of the tariff concessions granted by the Philippines in refractory bricks under the AFTA

Executive Order No. 94 (dated June 1, 1993)

- ◆ reduced the import duty on cement to 5 percent and cement clinker to 3 percent until June 30, 1994 (per E.O.

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No. 5, the zero duty on these items will only be effective until June 30, 1993 and therefore the rates of 20 percent on cement and 10 percent on cement clinker under E.O. No. 470 will be applied thereafter)

- ◆ implemented due to uncertainty in the power supply and therefore possible shortage in the local supply of cement

Executive Order No. 61 (dated February 27, 1993)

- ◆ modified the nomenclature and tariff rates on certain agricultural products; animals fresh chilled or frozen, corn and feedwheat
- ◆ in line with R.A. No. 7607 (The Magna Carta of Small Farmers)

Executive Order No. 43 (dated December 29, 1992)

- ◆ modified the rate of import duty on certain imported articles to implement the 1991 and 1992 Philippine program submitted to the Third ASEAN summit providing a minimum level of 25 percent margin of preference

Memorandum Order No. 60 (dated November 5, 1992)

- ◆ held in abeyance until February 28, 1993 for the implementation of E.O. No. 8 with respect to maize

Executive Order No. 8 (dated July 24, 1992)

- ◆ provided for interim increased tariff protection in lieu of import restrictions
- ◆ items covered include livestock, meat, fish, crustaceans, mollusks, sausages and other prepared meat, cane or beet sugar, maize, cereal grains, air or vacuum pumps, fans, aircon, refrigerators/freezers, centrifuges, washing machines, sewing machines, electric accumulators, thermionic/cold cathode, public transport type passenger motor vehicle and parts
- ◆ import restrictions lifted on November 1, 1992

Executive Order No. 5 (dated July 14, 1992)

- ◆ shortened the operation of the zero rate of import duty on cement and cement clinker from June 30, 1995 (as provided in E.O. No. 2) to June 30, 1993

Executive Order No. 2 (dated July 1, 1992)

- ◆ extended the effectivity of the zero rate of duty on cement and cement clinker up to June 30, 1995 (under E.O. No. 470, these articles will be subjected to rates of duty of 20 percent and 10 percent, respectively, beginning July 1, 1992)
- ◆ intended to stop possible shortage of local supply if zero duty will be lifted

Executive Order No. 1 (dated June 30, 1992)

- ◆ reduced rates of import duty on electric generating sets to 0 percent until June 30, 1995
- ◆ intended to provide partial remedy to the energy crisis

Executive Order No. 478 (dated August 23, 1991)

- ◆ imposed special duties of P0.95 per liter or P151.05 per barrel on imported crude oil falling under Hdg. No. 27.09 and P1.00 per liter on imported oil products

Executive Order No. 470 (dated July 1991)

- ◆ increased number of commodity line with high tariffs
- ◆ reduced number of commodity line with low tariffs

Source: Manasan, Rosario and Rosario Querubin. "Assessment of Tariff Reform in the 1990s." PIDS Discussion Paper Series No. 97-10, Philippine Institute for Development Studies, February 1997.

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come pie while the last three household groups, 8 to 10 (the highest income groups), suffered a decline in their shares. However, during the period 1995 and 1996, the change in the implicit tariff rates became highly regressive as the poor income groups (deciles 1 to 6) suffered a decline in their shares of the income pie and the rich (deciles 7 to 10) enjoyed an increase. As seen in

TABLE 2: INCOME DISTRIBUTION EFFECTS
(PERCENT DIFFERENCE IN HOUSEHOLD INCOME SHARE BETWEEN SCENARIO AND BASE)

	1990 - 1995	1990 - 1994	1995 - 1996	1996 - 2000	1990 - 2000
HH1	-2.1	0.7	-4.6	0.4	-1.7
HH2	-1.3	1.2	-3.6	2.0	0.7
HH3	-1.0	1.1	-2.9	1.9	0.9
HH4	-0.8	1.0	-2.5	1.9	1.1
HH5	-0.4	0.7	-1.5	1.7	1.2
HH6	-0.3	0.5	-1.0	1.0	0.7
HH7	0.2	0.1	0.3	0.1	0.3
HH8	0.5	-0.2	0.8	-0.9	-0.4
HH9	0.5	-0.5	1.4	-1.1	-0.6
HH10	0.2	-0.4	0.9	-0.4	-0.3

TABLE 3: CHANGES IN PRICES OF FACTORS
(SCENARIO VS BASE)

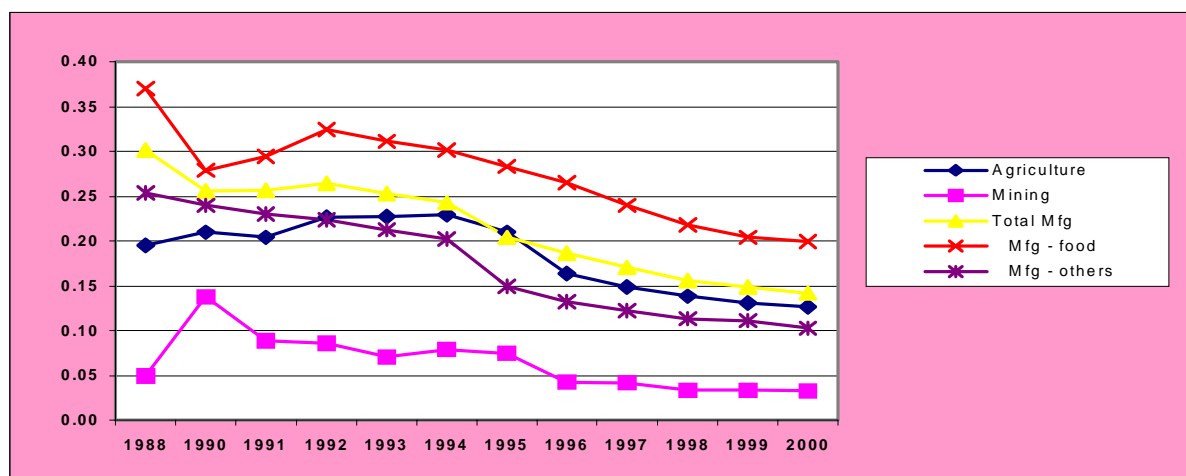
	1990 - 1995	1990 - 1994	1995 - 1996	1996 - 2000	1990 - 2000
WAAG	-1.3	9.7	-14.7	7.0	5.7
WANAG	6.5	1.0	11.1	9.9	16.4
RENTMX	-4.1	0.9	-5.3	12.9	8.8
RENTKAP	10.9	5.2	11.4	18.3	29.2

WAAG: agricultural wages
WANAG: nonagricultural wages
RENTMX: rent to mixed factor
RENTKAP: rent to capital

TABLE 4: CHANGES IN CONSUMPTION
(SCENARIO VS BASE, IN PERCENT)

	1990 - 1995	1990 - 1994	1995 - 1996	1996 - 2000	1990 - 2000
HH1	-0.9	2.1	-3.1	9.6	8.8
HH2	0.2	2.7	-1.5	11.7	11.9
HH3	1.0	2.9	-0.2	12.4	13.4
HH4	1.2	2.7	0.3	12.5	13.8
HH5	1.8	2.5	1.5	12.5	14.3
HH6	2.3	2.5	2.4	12.5	14.8
HH7	2.9	2.2	3.9	12.1	15.0
HH8	3.5	2.1	4.8	11.8	15.3
HH9	3.8	2.1	5.6	12.6	16.3
HH10	3.7	2.4	5.5	15.0	18.7

FIGURE 1: IMPLICIT TARIFFS OF MAJOR SECTORS



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Figure 1, it was during these years when implicit tariff rates on agriculture registered the biggest drop. From 1996 to 2000, on the other hand, the effects reversed once again to favor the poor household groups.

On the whole, the change in the implicit tariff rates can be considered as progressive in nature, with the exception only of the poorest of the poor (first decile) who experienced a decline in their income share by 1.7 percent in the period 1990–2000.

In terms of the effects of the changes in implicit tariff rates on relative factor prices, Table 3 shows that the progressive effect on income distribution during the period 1990–1994 as observed earlier was due to the favorable increase in agriculture wage rate. Agriculture wage rate increased by 9.7 percent during this period but it dropped by -14.7 percent in 1995–1996 as reflected in the decline of the lower income households' shares in the income pie.

The decline of the income share of the poorer income groups was further aggravated by the results concerning the price of capital and the price of mixed factor. Price of capital increased by 11.4 percent while price of mixed factor dropped by 5.3 percent. Since lower income groups also heavily depend on mixed factor income aside from agriculture labor income, the decline in the price of the former resulted in the regressive income distribution trend manifested during said period.

On the whole, for the period under study, changes in implicit rate resulted in higher increases in non-agricultural wages and price of capital.

Meanwhile, Table 4 shows the consumption pattern of household groups as a result of changes in the

TABLE 5: RESOURCE ALLOCATION EFFECTS

	1990 – 1995	1990 – 1994	1995 – 1996	1996 – 2000	1990 – 2000
<i>I. Resource allocation effects (percent difference in sectoral output share between scenario and base)</i>					
Agriculture	-19.2	-7.1	-18.3	-11.8	-31.0
Mining	6.6	5.0	1.5	1.2	7.8
Total manufacturing	2.3	2.4	2.8	8.3	10.6
Food	-3.3	-3.2	3.1	7.4	4.1
Others	6.3	6.3	2.6	8.9	15.2
Construction	3.3	-0.7	1.9	-26.0	-22.7
Utilities	20.0	9.4	6.8	18.9	38.8
Services	-1.7	-0.8	0.3	5.7	4.0
<i>II. Resource allocation effects (percent difference in sectoral labor factor demand share between scenario and base)</i>					
Agriculture	-1.5	0.8	-0.9	-1.9	-3.3
Mining	11.8	7.7	7.1	-8.2	3.6
Total manufacturing	7.5	7.0	7.1	20.2	27.7
Food	12.7	7.8	11.6	22.4	35.1
Others	1.8	6.0	2.0	17.7	19.5
Construction	2.5	-1.4	2.7	-20.3	-17.8
Utilities	20.9	9.2	9.5	26.7	47.6
Services	-7.2	-2.0	-5.2	14.0	6.8
<i>III. Resource allocation effects (percent difference in sectoral capital factor demand share between scenario and base)</i>					
Agriculture	-3.7	8.6	-21.5	-4.1	-7.8
Mining	13.0	7.0	9.2	-12.7	0.2
Total manufacturing	13.1	7.3	12.7	16.6	29.6
Food	13.6	7.5	13.8	16.2	29.8
Others	10.7	6.4	8.3	18.0	28.8
Construction	3.6	-2.0	4.8	-24.2	-20.6
Utilities	22.3	8.6	11.8	21.2	43.5
Services	-6.9	-3.1	-4.0	6.3	-0.6
<i>IV. Resource allocation effects (percent difference in sectoral mixed factor demand share between scenario and base)</i>					
Agriculture	-18.5	-4.2	-23.6	-18.6	-37.1
Mining	23.5	10.4	18.5	-14.2	9.4
Total manufacturing	13.0	5.0	14.1	10.5	23.5
Food	19.7	9.0	14.9	5.9	25.5
Others	0.5	-2.7	12.5	19.2	19.7
Construction	14.1	1.4	14.0	-25.4	-11.3
Utilities	0.0	0.0	0.0	0.0	0.0
Services	3.3	0.7	4.6	5.5	8.8



MIMAP PROJECT UPDATES

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implicit tariff. While all household groups enjoyed a higher consumption level for the entire period, the consumption level of the rich income groups increased the most.

Finally, one observes in Table 5 that for all the periods under study, there has been a clear movement of resources away from agriculture to the manufacturing sector explaining why the lowest income group or decile 1 suffered a decline in its share of the income pie, most especially in 1995–1996.



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The **Updates** may now be downloaded in Adobe Acrobat format for free from the Project's website. The site can be accessed through <http://www.pdf.org.ph/mimap>.

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MIMAP Holds Third...

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pact of Macroeconomic Adjustment Policies on the Environment–Philippines Project. The other country MIMAP team researchers who participated in the meeting included experts from Bangladesh, Benin, India, Pakistan, Morocco, Sri Lanka, Lao PDR, Nepal, Ghana, Vietnam, and Burkina Faso. Officials from the International Development Research Centre (IDRC) were likewise present during the meeting, in particular, Dr. Randy Spence, Regional Director for Southeast and East Asia, and Dr. Marie-Claude Martin, Senior Programme Officer. *BEM*



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