

Assessing Alternative Schemes for Financing Tariff Reform*

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Tariff revenue is a major source of government income. In the Philippines, tariffs, as collected by the Bureau of Customs (BOC), had contributed a large share to the government coffers. Beginning in the 1990s, however, as a result of the government's aggressive tariff reduction program, revenues coming from this source have been declining. As shown in Table 1, the increases in government revenue between 1994 and 1997 when the government experienced budget surpluses (revenue surpassing expenditure) were entirely due to the improvement in collection from the Bureau of Internal Revenue (BIR). Revenues coming from the BOC, mainly in the form of tariff duties, started to decline in 1994 due to decreasing tariff rates (Figure 1).

Table 1 also shows that after 1997, it was not only the BOC collections that deteriorated (from 3.7 percent of GNP in 1997 to 2.7 percent in 2000) but also the government budget balance. From a budget surplus of 0.1 percent of the gross national product (GNP) in 1997, it shifted to a deficit of -1.8 percent in the following year and further deteriorated to an alarming

position of almost -4 percent of GNP in 2000. While expenditures during these years were within historical range, revenues were way below the usual trend. And like the BOC revenues, BIR collections also dropped, from 12.4 percent of GNP in 1997 to 10.1 percent in 2000.

The tariff reduction program and its impact

The primary objective of any program on tariff reduction is to promote efficiency in production.¹ However, in the process, a reduction in government revenue is to be expected, the amount of which can sometimes be quite significant. During periods of rising budget deficits, such reductions put a heavy burden on the government's revenue generation program.

The current Philippine program on tariff reform, which was intensified in the 1990s, has not yet been completed. A number of components are still either being implemented or will be implemented in the near future. For sure, then, a further decline in customs

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¹In a number of simulation experiments, the effects of the tariff reduction program were observed to have generated not only production efficiency, but also higher overall welfare and improved income distribution.

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MIMAP-Philippines hosts CBMS study tour in Palawan

The Project Management Office (PMO) of the Micro Impacts of Macroeconomic Adjustment Policies Project-Philippines, in cooperation with the United Nations Development Programme (UNDP) and the provincial government of Palawan, hosted a study tour on the utilization of the community-based monitoring system (CBMS) for development planning in the province of Palawan on July 14-15, 2001.

The study tour was organized upon the request of the UNDP for MIMAP's assistance in orienting their guest delegates from Malawi on the use of CBMS for poverty tracking in the Philippines. It may be noted that the CBMS was implemented in 21 out of 24 municipalities of Palawan last year. The information generated from the CBMS had been utilized for development planning at all geopolitical levels in the province.

The highlights of the study tour were the presentation of the results of the CBMS survey and its utilization for welfare evaluation, and the identification of priority needs and projects at the provincial, municipal and barangay levels. Acting as resource persons were Ms. Josephine Escaño and Ms. Josephine Rabang of the Research, Statistics and Evaluation Division of the Provincial Planning and Development Office (PPDO) of Palawan, and Ms. Nellie Aizo of the Municipal Planning and Development Office of Aborlan, Southern Palawan. Also present to share valuable insights on Palawan's experience on the implementation of CBMS was Mr. Dirk Heinrichs, Provincial Consultant from the Centre for International Migration and Development (CIM) Integrated Experts Program. It was under the supervision of Mr. Heinrichs that the PPDO was able to prepare digitized maps showing various welfare indica-

tors gathered from the CBMS. In addition, Mr. Heinrichs also discussed how the huge data set gathered from the CBMS was being stored, managed, maintained and utilized.

Prior to the presentation of the CBMS survey results, Dr. Celia Reyes, Project Director of the MIMAP-Philippines, gave the delegates from the National Anti-Poverty Commission (NAPC), Department of Interior and Local Government (DILG), Department of Social Welfare and Development (DSWD), UNDP and Malawi a background of the MIMAP-Philippines project, in particular, its research findings, accomplishments and ongoing research work relating to poverty monitoring in the country. Foremost in MIMAP's advocacy work program in recent years is its ongoing collaboration with the provincial government of Palawan in the operationalization of a CBMS and utilization of data generated for development planning at all geopolitical levels.

During the discussion, the potential uses of the CBMS data for planning and program implementation at the national level were identified. Assistant Secretary Celia Yangco of the DSWD, for one, noted that the CBMS information could be used to monitor the changes in welfare conditions of households in areas where government social programs are being implemented or have been implemented, i.e., the Comprehensive Integrated Delivery of Social Services (CIDSS) program. She also suggested the possible conduct of a study on the latter. She likewise suggested that the provincial government of Palawan should consider tapping resources for projects and programs from the local market like national government agencies such as DSWD and DILG. She indicated, for instance, that the current thrust of the DSWD is to make programs more responsive to local needs and with the CBMS information on hand, the local government could help in evaluating and redesigning projects for their organization.

Meanwhile, Ms. Juanita Nartea of the NAPC noted that the CBMS database will be useful in pulling together resources of line agencies and allocating them to appropriate areas. She also stressed the importance

After almost four years of fruitful research, the Impact of Macroeconomic and Adjustment Policies on the Environment (IMAPE) Project came to a close on June 30, 2001. During its term, the Project, whose goal was to verify and quantify the effects of changes in macroeconomic policies on the environment, contributed much to the study of such effects on the environment.

The following sums up its various accomplishments and contributions.

Research activities

Among the key studies completed by the Project were the development of a framework for analysis and model-building by Dr. Ponciano S. Intal Jr. and of environmental impact multipliers by Ms. Elvira M. Orbeta. The Project also conducted several case studies, namely:

❖ The Environmental Impact of Macroeconomic and Adjustment Policies: Land Use and Household Welfare Comparisons in Camarines Sur
by Dr. Leonardo A. Lanzona

❖ Environmental Impact of Macroeconomic and Sectoral Policies at the Micro Level: Case Study of Palawan Province
by Dr. Danilo C. Israel, Ms Aida Torres and Ms. Adelwisa Sandalo

❖ Impact of Trade Liberalization and Exchange Rate Policy on Industrial Water Pollution and Groundwater Depletion
by Dr. Cristina C. David and Dr. Arlene B. Inocencio

❖ The Environmental Impact of Macroeconomic Policies on the Mining and Quarrying Sector in Palawan Province
by Dr. Danilo C. Israel, Ms. Aida Torres and Ms. Adelwisa Sandalo

❖ Analyzing the Impact of Taxes on the Environment: An Applied General Equilibrium Approach for the Philippines
by Dr. Arlene B. Inocencio, Dr. Christian M. Dufournaud and Mr. U-Primo E. Rodriguez

IMAPE project ends

The case studies for Palawan were done in collaboration with the Palawan Council for Sustainable Development (PCSD), the agency mandated by the Philippine government to implement the strategic environmental plan in said province.

Seminar-workshop involvement

Aside from research, the Project also sponsored and organized three major technical workshops.

The first two events became the venues for eliciting comments and suggestions from technical experts, researchers, policymakers and program implementors on the Project's research work. The third workshop, meanwhile, was co-sponsored by the PCSD and held recently in Puerto Princesa City, Palawan. It presented the research work of Dr. Danilo Israel et al. on the mining and quarrying sector in the province. Among the participating agencies in these workshops were the Department of Environment and Natural Resources (DENR), National Economic and Development Authority (NEDA), Philippine Institute for Development Studies (PIDS), National Mapping and Resources Information Authority (NAMRIA), National Statistical and Coordination Board (NSCB), Presidential Task Force on Water Resources Development and Management (PTFWRDM), Ateneo de Manila University (AdMU), Philippine Statistical Association (PSA), DENR-Mines and Geosciences Bureau (MGB), Environmental Legal Assistance Council (ELAC) and Rio Tuba Nickel Mining Corporation (RTNMC).

Furthermore, IMAPE also participated in several workshops hosted by the MIMAP-Philippines in Manila and Puerto Princesa City. Some of these include the workshop intended to orient the provincial government of Palawan and its attached agencies on the research work of the MIMAP and IMAPE, the technical

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CBMS study tour... (From Page 2)

of monitoring and ensuring the sustainability of performance.

The delegation from Malawi was composed of its Minister of Poverty, the Honorable Alice Sumani, who headed the group; Mr. Sam Kakhobwe, Executive Director of the Malawi Social Action Fund; Dr. Henry N'gombe, Principal Secretary of the National Economic

Council (NEC); Ms. Patricia Zimpita, Deputy Director of the Monitoring and Evaluation of NEC; and Mr. Lawrence Kachikopa, Deputy Director for Development, also of NEC. The Philippine delegation, on the other hand, was headed by the Honorable Assistant Secretary Celia Yangco of the DSWD and composed of Director Teresita Mistal of the Bureau of Local Government and Development under the DILG; Ms. Marites Balhon of the Integrated Rural Accessibility Project (IRAP); Ms. Juanita Nartea of the NAPC; and Ms. Belle Evidente of the UNDP. *BEM*

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IMAPE project... (From Page 3)

workshop on modelling using CGE (Computable General Equilibrium) models, and the international meeting of the MIMAP research network where one of the IMAPE papers was presented.

Planners and policy implementors from both the national and local and provincial levels were involved in the Project's various activities.

Collaborative undertakings

One of the highlights of the IMAPE Project was the extent of its collaboration with various entities on a number of undertakings.

For instance, it established a fruitful collaboration with the city government of Naga, Camarines Sur and with the Provincial Planning and Development Office of Palawan in terms of doing research and conducting a community-based monitoring system (CBMS) in the two places. And although the implementation of the CBMS did not push through in Naga, the research and case studies (mentioned earlier) on the environment impact of macroeconomic and adjustment policies on land use and household welfare comparisons in Camarines Sur were completed.

In the case of the province of Palawan, on the other hand, not only was the collaborative work on the conduct of the CBMS successfully completed with the

technical support of the MIMAP-Philippines project but a joint setting up of a socioeconomic profile for the province, using the Geographical Information System (GIS) software, was also undertaken.

GIS-based socioeconomic and environmental profile

The IMAPE Project was also instrumental in the setting up of a socioeconomic and environmental profile at the municipality level for the province of Palawan. It provided the province ArcInfo, a professional GIS software used in coming up with a digital baseline data set (topographic and sectoral spatial information), that is now being used for comprehensive land use planning, and sectoral and master planning in Palawan. The province was also able to develop a GIS-based environmental monitoring framework as well as a set of selected environmental indicators. These were used by the PPDO to produce a paper on "Resources Analysis, Province of Palawan" which was designed to assist in the generation of data for a feasibility study on Strategic Development Areas.

The digitized data generated through the case studies and CBMS produced maps that were used for analysis and presented to policymakers like senators and congressmen.

Finally, aside from the development of the GIS database, a catalogue of reference materials regarding environment-macroeconomy linkages for the use of researchers was also made by the Project. *JPA*

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RESEARCH RESULTS

Alternative schemes... (From Page 1)

collection is to be expected. Given this, the implication is that unless BIR collections improve, the decline will put more pressure on the government balance.

How can the pressure be eased? Is there an alternative scheme that can make up for the decline in the BOC revenue?

In response to these questions, this author ran a series of policy simulations using a computable general equilibrium model² of the Philippines to see the impact of alternative schemes of financing tariff reduction.³ The results and implications are summarized in this article.

Financing schemes considered

A number of financing schemes were considered and analyzed for the purpose on hand. They included the following: (1) additional income tax (referred here as GOV-1 scenario); (2) value added tax (GOV-2); (3) additional indirect output tax (GOV-3); and (4) consumption tax (GOV-4). All these tax scenarios are accompanied by tariff reduction.

The idea behind the experiments is to increase local taxes, one at a time, in order to generate enough

government revenue to offset the revenue losses arising from the decline in tariff rates shown in Figure 1. Two criteria were used in comparing the results, namely: a) impact on the overall welfare, and b) distribution to various household groups.

The impact of the schemes in terms of welfare change is shown in Figure 2 whereas that in terms of distribution to various household groups is outlined in Figure 3. The results of welfare change are expressed in billion pesos in 1990 values since the model was calibrated in 1990. One should note that these welfare changes are due to tariff reduction net of additional taxes to keep the budget balance of the national government unchanged.

The results

One interesting result is that all scenarios yield positive net welfare gains. The specific tax scenario (GOV-2 or the scenario involving tariff reduction and

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²The model is called Philippine Computable General Equilibrium Model (PCGEM). For detailed discussion of the model, see Cororaton, C.B. 2000. *Philippine Computable General Equilibrium Model*. PIDS Discussion Paper Series No. 2000-23.

³For a detailed discussion of the simulation, see Cororaton 2001. *Welfare and distribution effects of Philippine tariff reforms: a CGE analysis*. MIMAP Research Paper Series No. 51.

**Table 1. National government cash operations
(percent of gross national product)**

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Revenues	16.9	17.6	17.7	17.3	19.4	18.4	18.2	18.7	16.4	15.3	14.5
<i>Tax revenues</i>	14.2	14.5	15.2	15.2	15.6	15.9	16.3	16.3	14.8	13.8	12.9
Bureau of Internal Revenue (BIR)	9.7	9.3	9.7	9.7	10.8	10.7	11.5	12.4	12.0	10.9	10.1
Bureau of Customs (BOC)	4.3	5.1	5.3	5.4	4.7	5.0	4.6	3.7	2.7	2.8	2.7
Other Offices	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
<i>Nontax revenues</i>	2.5	2.8	2.3	1.9	3.7	2.6	1.9	2.4	1.6	1.5	1.5
<i>Grants</i>	0.2	0.2	0.2	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Expenditures	20.4	19.7	18.8	18.7	18.4	17.9	17.9	18.6	18.2	18.8	18.4
Deficit	-3.5	-2.1	-1.2	-1.5	0.9	0.6	0.3	0.1	-1.8	-3.6	-3.9
Sources: Bangko Sentral ng Pilipinas Bureau of Treasury: Statistical Data Analysis Division - Research Service											

RESEARCH RESULTS

Alternative schemes... (From Page 5)

Figure 1. Weighted average nominal tariff

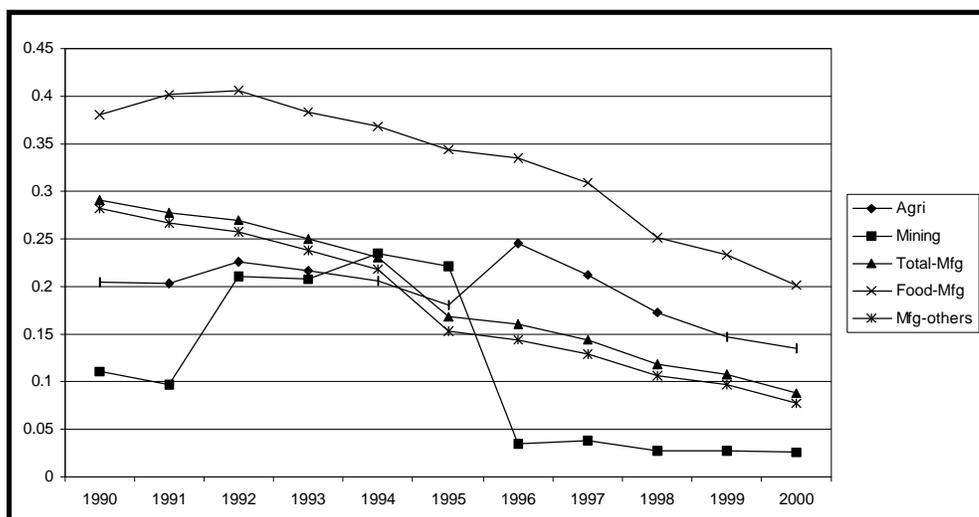
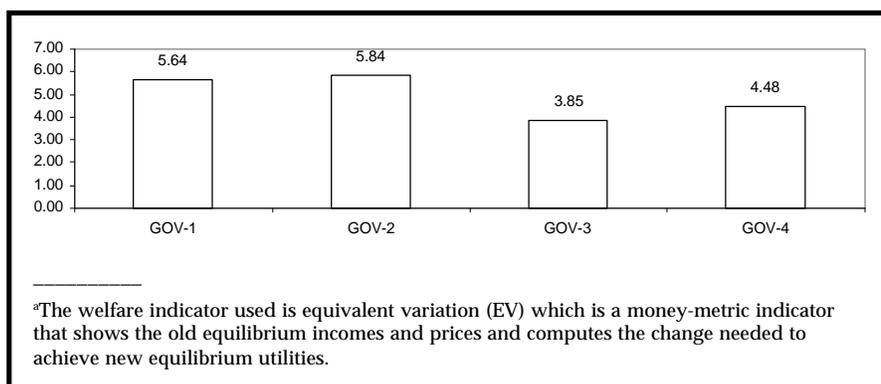


Figure 2. Impact of financing scenarios in terms of change in welfare^a (P billion)



value added tax), however, generates the biggest net welfare gain of P5.84 billion in 1990 values. On the other hand, the lowest net welfare gain is under GOV-3 (tariff reduction and additional indirect output tax).

As to the effects across households which are shown in Figure 3, the vertical axis indicates the ratio of net welfare gain in terms of disposable income of various households while the horizontal axis repre-

sents the household groups in decile. If we look at scenario GOV-3, we note that it does not only yield the lowest net welfare gain but it is also highly regressive. The burden of paying the tariff reduction program falls on the lower income brackets. Worse, the first decile, the poorest of the poor, suffers from a net welfare loss.

It is interesting to note that while GOV-2 (tariff reduction and value added tax) generates the highest overall net welfare gain among the alternative financing schemes, in terms of distribution, it is regressive like the GOV-3 scenario. Again, the burden of financing the tariff reduction falls on the lower income groups. However, under this scenario, nobody suffers from a net welfare loss, unlike in GOV-3.

RESEARCH RESULTS

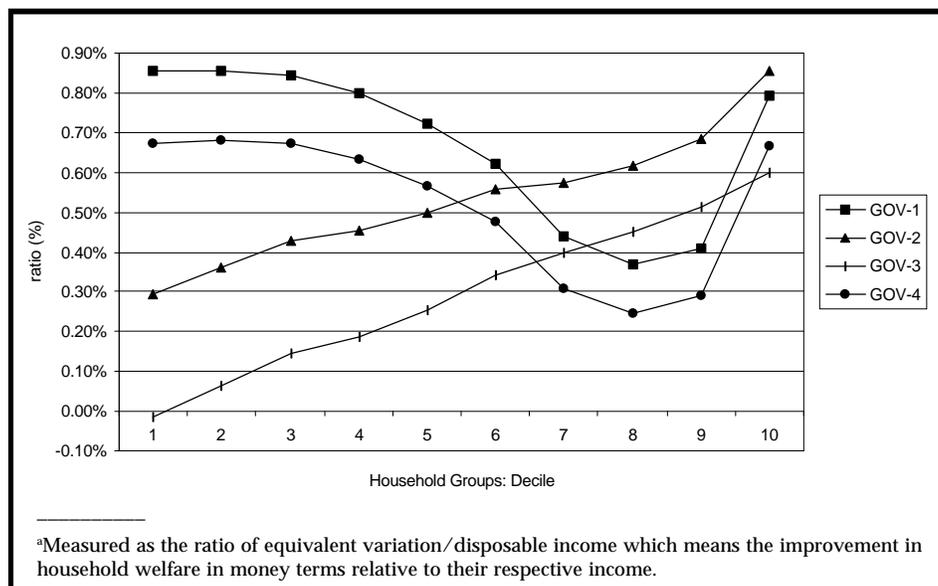
The scenario under GOV-1 (tariff reduction and income tax), meanwhile, generates a net welfare gain of P5.64 billion in 1990 values, slightly below the gain generated under GOV-2. In terms of distribution, it is the most progressive, with the lowest income group benefiting the most.

Finally, the last scenario under GOV-4 (tariff reduction and consumption tax) also generates a progressive set of results. It is, however, inferior to GOV-1 in terms of both the overall net welfare gain and the net gain among various household groups.

Conclusion

Based on the results of the exercises, one may say that the tariff reduction program is welfare-improving. However, as already mentioned, the program also involves a substantial decline in government revenues, thereby severely affecting government balances. This being the case, there must be a financing scheme that would help offset the losses. The exercises done in our

Figure 3. Impact of financing scenarios in terms of distribution effect^a



study indicate that the best scheme to address this concern is through income taxation (GOV-1).

Given the present income tax generation in the Philippines, though, which is burdened by tax evasion and other related problems, income tax rates may not have to increase to generate enough funds. What may do the trick in generating more than enough funds to finance the welfare-improving tariff reduction program is proper tax administration in income taxation. **MIMAP**

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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.panasia.org.sg/mimapph>.

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A look at the latest poverty incidence picture

The aftermath of the 1997 Asian financial crisis, together with a very unstable economy, resulted in having more poor families in the country in 2000. From the preliminary results of the *Family Income and Expenditure Survey (FIES)*, as shown in Table 1, poverty incidence in the Philippines or the proportion of families with income below the poverty line went up from 31.8 percent in 1997 to 34.2 percent in 2000, an increase of 2.4 percentage points.

In the National Capital Region (NCR), poverty incidence increased by 3.3 percentage points, from 6.4 percent in 1997 to 9.7 percent in 2000. Similarly, poverty incidence in areas outside of the NCR rose from 35.9 percent in 1997 to 38.3 percent in 2000.

Among the regions, the Autonomous Region for Muslim Mindanao (ARMM) recorded the highest increase in poverty incidence at 11.5 percentage points, followed by Region IX at 6.4 percentage points. Likewise, Regions III, IV, V, VI, VII, VIII, XI and XII experienced an increase in poverty incidence during the period.

On the other hand, four regions posted a decline in poverty incidence, with the Cordillera Administrative Region (CAR) capturing the highest decline of 5.6

Table 1. Poverty incidence by region, 1997 and 2000
(in percent)

Region	Poverty Incidence		
	1997	2000 ^a	Change
Philippines	31.8	34.2	2.4
NCR	6.4	9.7	3.3
AONCR	35.9	38.3	2.4
Region I	37.8	37.2	-0.6
Region II	32.1	30.6	-1.5
Region III	15.4	18.6	3.2
Region IV	25.7	26.0	0.3
Region V	50.1	56.3	6.2
Region VI	39.9	43.4	3.5
Region VII	34.4	38.9	4.5
Region VIII	40.8	43.0	2.2
Region IX	40.1	46.5	6.4
Region X	47.0	45.7	-1.3
Region XI	38.2	41.2	3.0
Region XII	50.0	50.9	0.9
CAR	42.5	36.9	-5.6
ARMM	57.3	68.8	11.5

Source of data: National Statistical Coordination Board
p - preliminary

percentage points. This was followed by Regions II, X and I which dropped by 1.5, 1.3 and 0.6 percentage points, respectively. RCR

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