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Distributional Implications of the VAT Reform in the Philippines

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Abstract

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This paper assesses the distributional impact of the recent VAT reform in the Philippines and evaluates alternative methods to mitigate the effects of the reform on poor households. The reform was progressive and relatively well targeted. To alleviate the impact of the reform on the poor, several mitigating measures were introduced. Although these measures reduced the adverse impact of the VAT reform for all households, a sizable amount of the benefit accrued to high-income households. Targeted transfer schemes have the potential to deliver a much higher percentage of benefits to the poor.

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I. INTRODUCTION

Recent reforms of the value-added tax (VAT) in the Philippines increased gross revenue substantially. The VAT reforms were introduced as part of a package of fiscal measures that aimed to put the public sector deficit and debt on a sustainable path. In November 2005, the VAT base was extended to energy products and selected professional services, and in February 2006, the VAT rate was increased from 10 to 12 percent. As a result, revenue collection (net of mitigating tax measures) is estimated to have increased by about 1.3 percentage points of GDP in 2006.²

While the VAT reform is expected to deliver important macroeconomic benefits over the medium term, there is concern about the possible adverse effect on poor households. The reform resulted in higher prices for goods and services, including petroleum products and electricity that were previously exempted from the VAT. To reduce the adverse impact of the reform on poor households (Box 1), the government introduced a package of mitigating tax measures that included a reduction in selected petroleum excises. In addition to these measures, the authorities announced plans to spend 30 percent of the incremental revenue receipts from the VAT reform on infrastructure and social services, which could further ameliorate any adverse distributional effects.

Box 1. Philippines: Poverty in the Philippines

Poverty incidence in the Philippines remains high, although it appears to have come down over the past few years. Based on the 2003 Family Income and Expenditure Survey (FIES), the National Statistical Coordination Board (NSCB) estimated that poverty incidence in the Philippines was 30 percent in 2003, down from 33 percent in 2000.* Over 4 million families (or 23.8 million individuals) lived below poverty line in 2003. Measures of the depth of poverty have improved only marginally between 2000 and 2003, with the income gap—defined as the average income shortfall (expressed in proportion to the poverty line) of families with income below the poverty threshold—declining from 29.1 to 28.7 percent.

The World Bank has identified two main determinants of poverty in the Philippines: educational attainment and sector of employment. Three-quarters of poor households have heads with no secondary education, while only half of all households do nationally. Meanwhile, two-thirds of the poor are employed in agriculture, compared with 40 percent of households nationally. The highest poverty incidence was registered among the self-employed and the wage earners employed in the agriculture sector.

* Based on a poverty threshold equivalent to annual per capita income of 12,309 pesos. For more details and explanation of methodology see NSCB website at <http://www.nscb.gov.ph/poverty>.

This paper shows that the VAT reform had a moderate adverse effect on poor households, and was progressive in its overall distributional impact. Households in the

² Appendix I provides a more detailed description of the VAT law before and after the reform.

bottom per capita consumption quintile incurred a smaller proportional reduction in real consumption as a result of the reform than households in the top quintile. The progressive nature of the reform is consistent with the consumption patterns of poor households, who disproportionately rely on unprocessed agricultural products that are exempt from the VAT. In addition, extending the VAT base to petroleum products is also progressive, because, with the exception of kerosene, petroleum products are largely consumed by wealthier households.

The package of mitigating measures delivers substantial benefits to all households, although large benefits also accrue to wealthier households. As mitigating measures, the authorities reduced tax rates on various products, and set aside a portion of the additional VAT revenues for social spending. This paper finds that these measures, if implemented effectively, would reduce the income loss from the reform by about 25 percent, and as a share of income, the benefit would be higher for poor households.³ However, in peso terms, wealthier households receive a large amount of the benefits of the overall mitigating package.

The mitigating measures increasing social spending are potentially substantially better targeted to poor households than those that reduced energy taxes, depending on their exact composition. Increases in education and health spending are relatively well targeted because elementary and secondary students attending government schools, as well as public health center users, are more highly concentrated in poor households.

Potential choices among social spending components of the mitigating package face a trade off between covering large numbers of households and effectively targeting the poor. Expanding health insurance, widening access to health facilities, and improving education and health facilities all deliver roughly one-third of the benefits to the poorest quintile. Expanding access to elementary and junior high schools is even better targeted, with almost 58 percent of the benefit going to the bottom quintile. However, since school attendance is nearly universal in the Philippines, building new schools would benefit far fewer poor households than improving the quality of existing facilities.

Replacing the existing social spending measures with targeted transfers has the potential to effectively compensate the poorest households at considerably lower cost. The potential savings, however, may be reduced to the extent that implementation is flawed and administrative costs exceed the minimum required amount. Still, the capacity to identify poor municipalities—one form of targeting that is considered—exists and has been successfully applied in the Philippines.

II. METHODOLOGY

The paper uses the FIES to establish whether the mitigating package was effective in targeting the poor. To evaluate the distributional impact of the VAT reform households are

³ Effective implementation of social spending measures would require proper selection, design, costing, and execution of projects, as well as efficient use of administrative budget.

separated into income groups, using income per capita from the 2003 FIES as the measure of household welfare and real income.⁴

The analysis is limited to the aspects of the VAT reform that are most relevant to the poor. These include: (1) the increase in the VAT rate from 10 to 12 percent; (2) the broadening of the VAT base to petroleum products, electricity, and professional services; (3) the reduction in fuel excises; (4) the removal of the franchise taxes; (5) the reduction in the oil tariff from 5 to 3 percent; and (6) the devotion of a portion of the additional VAT revenue to increased education and health spending. The first two measures comprise the VAT reform without mitigation, the next three measures comprise the mitigating tax measures,⁵ and the final measure comprises the mitigating spending measure. The analysis simulates the effect of all six measures, designed to represent the full effect of the reform.

The methodology examines the first-order effect of higher prices on household real income, which likely overstates the burden of the reform. The estimated reduction in household real income assumes that household and firm demand is fixed. The estimates ignore any consumption adjustments by households, as well as input adjustments by firms, and therefore should be interpreted as the upper bounds on the magnitude of income effects. In addition, for simplicity, firms are assumed to pass on all increases in their costs to their customers in the form of higher output prices.

Additional assumptions are required to simulate the effect of extra social spending. The authorities announced that at least 30 percent of the additional revenue proceeds will be set aside for infrastructure and social spending. Based on the current composition of spending, it is assumed that 60 percent of the additional expenditure will be devoted to social spending and 40 percent to infrastructure. Because it is difficult to identify the distributional impact of infrastructure spending, the analysis focuses only on the social spending component, which is assumed to be divided equally between education and health spending. This additional spending is modeled as transfers to existing users of education and health facilities. This methodology likely overstates the benefit of additional spending, due to inefficiencies in spending procedures, and the assumption that users value the spending at cost. On the other hand, the methodology may underestimate the effect of additional spending by ignoring the benefits to households of the additional infrastructure spending.

⁴ In the Philippines, income per capita rather than consumption per capita is the standard welfare measure. Sensitivity analysis shows that the results are robust with respect to using consumption per capita as the welfare measure. The terms welfare and income are used interchangeably in the remainder of this paper.

⁵ While the reduction in the excise taxes on diesel, kerosene, and fuel oil was intended as a purely mitigating measure, other measures were introduced primarily to improve the structure of the tax system. In particular, the franchise tax was repealed to remove a potential problem of double taxation when VAT was extended to electricity, and the gasoline excise tax was reduced to equalize the tax treatment of regular and unleaded premium gasoline. Nonetheless, we interpret all tax reducing measures as part of the package of mitigating tax measures.

The analysis estimates both the direct and indirect impact of price changes resulting from the reform. The direct impact results from changes in the after-tax price of final products. For example, a 2 percentage point increase in the VAT rate (from 10 to 12 percent) would result in about a 2 percent direct increase in the final prices of goods and services subject to the VAT, while the removal of fuel exemptions would result in a 12 percent increase in fuel prices. The indirect impact results from changes in the after-tax price of intermediate goods, which are assumed to be passed on to the price of final goods. For example, lower prices of petroleum product inputs following the reduction of excise taxes on fuels would decrease the costs of production (e.g., in transportation), which may be passed on to consumers in the form of lower prices of final goods (e.g., bus tickets). Based on the 2000 input-output table for the Philippines, a simple input-output model is used to estimate how changes in excise taxes are passed on to the prices for other goods and services.⁶

The total price changes are then applied to the household consumption data in the 2003 FIES to estimate the incidence of the VAT reform. Data on household consumption are used to calculate the budget shares of various goods and services purchased by consumers, defined as household expenditure on a given item divided by total household expenditure (Table 1). These shares are multiplied by the corresponding price increases and then summed across consumption items to estimate the percentage decline in household real income due to the VAT reform. Finally, the total real income effect is averaged for each income group to obtain the total income effect for each income quintile.

The distributional impact of the reform can be evaluated across two dimensions:

- *Targeting performance.* The targeting performance depends on each income group's share of the absolute burden or the benefit resulting from a tax reform. For example, a tax increase is well targeted from a social perspective if lower income households bear a disproportionately small share of the total burden, e.g., the bottom quintile bears less than 20 percent of the tax burden. For tax cuts and transfer programs, a well-targeted package will result in lower income households enjoying a disproportionately higher share of the total income gain from the package.
- *Average effect.* The average effect is approximately equal to the average percentage welfare loss experienced by an income group. The reform is deemed progressive (regressive) if the percentage decrease in household consumption as a result of the reform is smaller (larger) for lower income groups.

The targeting performance and average effect are related, but measure different concepts. Targeting performance is used to assess the extent to which the additional revenue raised by the reform is drawn from poor households, in absolute income terms (in pesos).

⁶ See Appendix II for more detail.

Table 1. Philippines: Household Expenditure Shares and Average Expenditure

	Bottom Decile	2nd Decile	2nd Quintile	3rd Quintile	4th Quintile	Top Quintile	All
Budget share	(Percent of measured consumption)						
Other food	63.3	60.1	56.1	50.9	43.6	31.3	48.7
NFA rice	2.7	1.9	1.3	0.6	0.2	0.0	0.9
Alcohol	1.1	1.2	1.1	1.0	0.8	0.5	0.9
Tobacco	1.9	1.9	1.9	1.6	1.2	0.6	1.5
Other fuel, light, and water	4.5	3.7	3.1	2.2	1.6	1.1	2.4
LPG	0.1	0.4	0.9	1.3	1.5	1.1	1.0
Kerosene	1.0	0.8	0.6	0.4	0.2	0.1	0.4
Electricity	0.7	1.2	1.9	2.8	3.5	3.5	2.5
Land transport	2.3	2.6	3.1	3.4	3.5	2.8	3.1
Air transport	0.0	0.0	0.0	0.0	0.1	0.3	0.1
Water transport	0.2	0.2	0.2	0.2	0.1	0.1	0.2
Gasoline/diesel for transport	0.0	0.1	0.1	0.2	0.4	0.9	0.3
Other transport and communication	0.1	0.2	0.4	0.9	1.9	3.4	1.3
Household operations	1.4	1.3	1.2	1.3	1.4	2.2	1.5
Personal care	3.1	3.6	3.9	4.1	3.9	3.3	3.7
Clothing	2.1	2.5	2.6	2.7	2.7	2.6	2.6
Education	1.2	1.2	1.3	1.6	2.3	3.3	1.9
Recreation	0.1	0.1	0.2	0.2	0.3	0.5	0.3
Medical care	0.9	1.2	1.4	1.6	1.9	2.3	1.7
Furniture	0.5	0.8	1.3	1.8	2.2	2.5	1.7
Income tax	0.0	0.0	0.1	0.2	0.9	2.1	0.7
Other taxes	0.1	0.1	0.2	0.2	0.3	0.4	0.2
Rent	6.6	7.6	8.8	10.8	12.3	14.0	10.6
Repair	0.8	1.0	1.4	1.6	1.7	2.3	1.6
Special occasion	1.1	1.5	1.9	2.2	2.4	2.4	2.0
Gifts	0.4	0.5	0.6	0.7	0.9	1.7	0.9
Other	3.8	4.3	4.4	5.5	8.2	14.7	7.3
Average Spending	(Pesos per month)						
Other food	26,601	32,434	39,148	49,433	63,619	85,499	53,440
NFA rice	1,155	1,010	822	493	259	72	546
Alcohol	468	632	765	902	1,100	1,180	899
Tobacco	819	1,050	1,343	1,533	1,655	1,452	1,383
Other fuel, light, and water	1,820	1,921	1,969	1,911	2,152	2,887	2,158
LPG	74	270	684	1,402	2,139	2,647	1,409
Kerosene	388	387	362	297	188	85	264
Electricity	336	741	1,494	3,000	5,423	10,756	4,242
Land transport	988	1,502	2,290	3,526	5,476	7,690	4,045
Air transport	3	4	27	42	165	1,509	349
Water transport	82	115	120	144	166	347	175
Gasoline/diesel for transport	14	49	111	286	725	3,892	1,009
Other transport and communication	36	114	336	1,151	3,399	12,425	3,477
Household operations	566	687	880	1,267	2,164	7,945	2,576
Personal care	1,380	2,041	2,864	4,131	5,892	9,686	4,856
Clothing	924	1,385	1,910	2,684	4,087	8,012	3,569
Education	567	773	1,160	1,922	4,371	12,567	4,138
Recreation	45	87	142	272	566	1,766	562
Medical care	449	722	1,032	1,621	3,062	7,397	2,739
Furniture	242	615	1,159	2,200	3,934	10,007	3,545
Income tax	5	10	61	355	1,759	8,519	2,141
Other taxes	39	69	124	205	415	1,662	492
Rent	2,780	4,061	6,088	10,551	17,905	42,808	16,154
Repair	432	602	1,058	1,859	2,918	8,332	2,937
Special occasion	525	879	1,471	2,296	3,845	7,481	3,159
Gifts	160	256	396	681	1,316	4,840	1,488
Other	1,754	2,418	3,661	6,700	14,959	65,895	18,663
Total expenditure	42,652	54,834	71,477	100,864	153,659	327,358	140,415

Sources: 2003 Family Income and Expenditure Survey and Fund staff estimates.

The average effect, however, is an approximate measure of the welfare loss experienced by poorer or richer households as a result of the reform, which is measured relative to household income. Therefore, a reform can be regressive, in the sense that the percentage reduction in real income is greater for the poor, but well targeted. This is because a relatively high percentage decline in poor household income may represent a relatively small amount of money in absolute terms, especially in a country with high inequality like the Philippines.

III. DISTRIBUTIONAL IMPACT OF THE VAT REFORM

The VAT reform reduced poor households' income by a moderate amount and was slightly progressive. The average gross reduction in household consumption was estimated at 2.5 percent (Figure 1).⁷ Households in the bottom quintile incurred a 2.4 percent reduction in real consumption, while households in the top quintile lost 2.7 percent. This finding is consistent with the consumption patterns of poor households, who tend to rely more on unprocessed agricultural products that are exempt from the VAT. In addition, with the exception of kerosene, petroleum products are disproportionately consumed by wealthier households. The finding is also broadly consistent with a study of household consumption patterns using earlier data (Fletcher, 2005 and Deverajan and Hossain, 1998).⁸

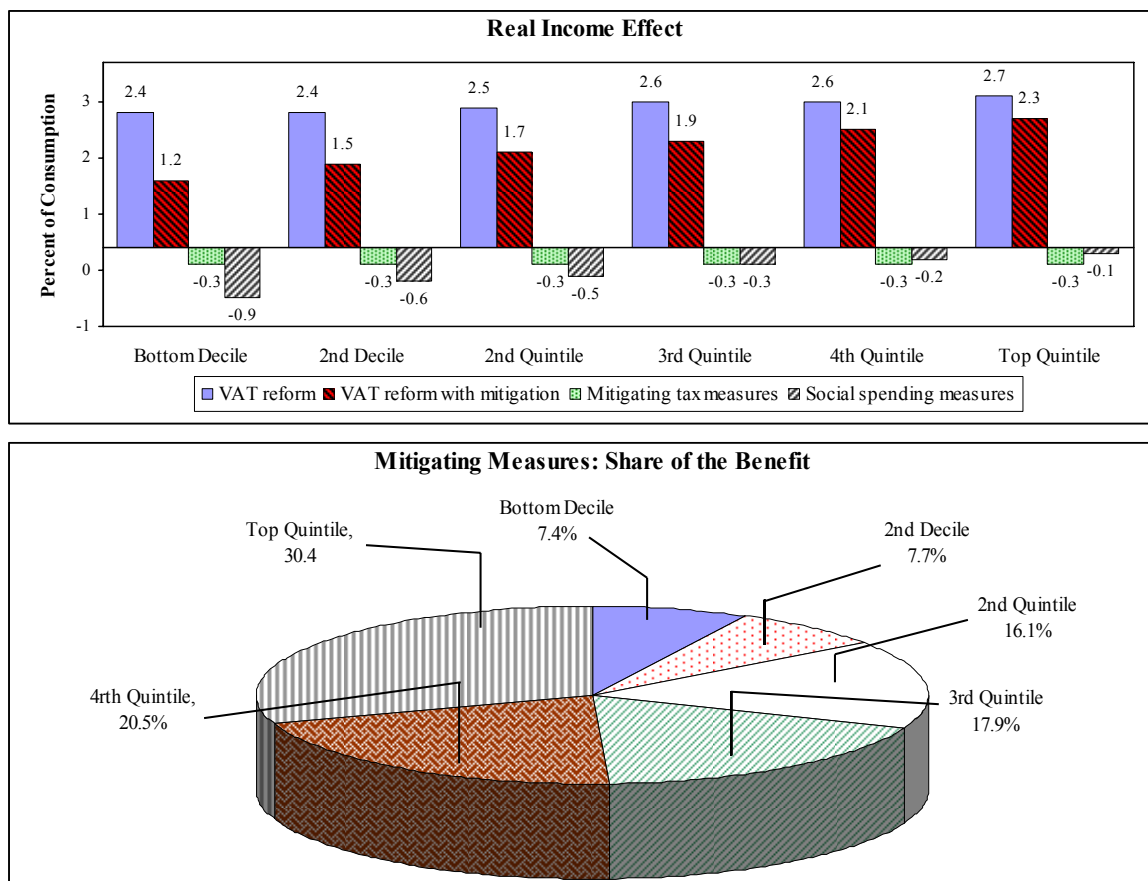
The mitigating package partially alleviated the impact of the VAT reform on consumers and is progressive. The mitigating package of tax measures and increases in social spending reduces the average income loss from the reform across all households by about 25 percent (from 2.5 to 1.9 percent of income). Moreover, the mitigating package itself is quite progressive, depending on the design of the social spending measures. The mitigating measures are calculated to give back 1.2 percent of consumption to the bottom decile, but only 0.4 percent to the top quintile.

Nonetheless, in line with their much higher consumption shares, a sizeable portion of the benefit from the mitigating package accrues to high-income households. Households in the bottom quintile enjoy only about 15 percent of the benefit from the package of tax cuts and spending increases, while households in the top quintile enjoy about 30 percent of the benefit (compared to their 50 percent of income). The reductions in energy and franchise taxes, which account for over 40 percent of the total mitigating package, are particularly poorly targeted, with the bottom quintile receiving only 7 percent of the total benefit and the top quintile receiving 43 percent. The assumed social spending measures, on the other hand, would be relatively well targeted with almost 28 percent of the benefit accruing to the bottom quintile (Table 2).

⁷ The model overestimates the income loss from the reform by about 30 percent, compared to the estimated revenue gain (Appendix I). The discrepancy can likely be explained by imperfect tax administration. The model assumes that tax compliance is universal, which also implies that the reform may overestimate total household income loss. However, in so far as the proportion of expenditure inappropriately withheld from the VAT is the same for each income group, the distributional implications will be unaffected.

⁸ Deverajan and Hossain (1998), using data from 1988, conclude that the incidence of the VAT is slightly regressive; the discrepancy with our findings likely reflects changes in the consumption patterns of Filipino households since 1988.

Figure 1. Philippines: Income Effect and Targeting of the VAT Reform and Mitigating Measures



Source: Fund staff estimates based on the 2000 input-output tables and the 2003 FIES.

Consistent with past research on fuel subsidies, substantial leakages of the benefit to better-off households are associated with the fuel tax cuts.⁹ The most important component of the tax mitigating package was the reduction in the excises on petroleum products, particularly diesel. Price reductions in diesel and gasoline primarily benefit wealthier households, who consume the majority of these products directly. While reducing diesel and gas prices also lowers the price of other goods and services, wealthier consumers

⁹ Coady and others (2006) find that fuel subsidies are not well targeted to the poor in five countries where studies have been carried out.

Table 2. Philippines: Benefit Incidence and Coverage for Alternative Compensation Schemes

	Bottom Decile	2nd Decile	2nd Quintile	3rd Quintile	4th Quintile	Top Quintile	All
Average income effect 1/ (Percent of measured consumption)							
Mitgating measures	1.2	0.9	0.8	0.6	0.5	0.4	0.7
Tax measures	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Social spending measures	0.9	0.6	0.5	0.3	0.2	0.1	0.4
Kalahi municipality transfer	5.8	3.0	1.7	0.8	0.3	0.1	1.5
Poor municipality transfer	4.5	2.9	1.8	0.9	0.4	0.1	1.4
Transfer to poor barangays	4.7	3.0	1.8	0.9	0.3	0.1	1.4
Proxy means	5.2	3.1	1.6	0.4	0.1	0.0	1.3
Per capita income	6,123	9,532	14,073	22,053	36,155	97,791	35,579
Average transfer 2/ (Pesos per month)							
Mitgating measures	503	522	548	609	699	1036	681
Tax measures	125	169	231	333	481	904	419
Social spending	378	352	317	277	219	132	262
Kalahi municipality transfer	1941	1244	833	511	280	186	681
Poor municipality transfer	1519	1219	916	560	337	225	681
Transfer to poor barangays	1614	1278	943	558	291	165	681
Proxy means	2008	1603	1064	408	111	13	681
Total income per household	38356	52666	71020	103859	162261	356563	147837
Coverage 3/ (Percent)							
Mitigating measures	100	100	100	100	100	100	100
Poor municipality transfer	66.9	53.7	40.4	24.7	14.9	9.9	30.0
Kalahi municipality transfer	16.6	10.6	7.1	4.4	2.4	1.6	5.8
Transfer to poor barangays	71.1	56.3	41.6	24.6	12.8	7.3	30.0
Proxy means	88.5	70.7	46.9	18.0	4.9	0.6	30.0
Share of the benefit 4/ (Percent)							
Mitgating measures	7.4	7.7	16.1	17.9	20.5	30.4	...
Tax measures	3.0	4.0	11.0	15.9	22.9	43.1	...
Social spending	14.4	13.5	24.2	21.1	16.7	10.1	...
Kalahi municipality transfer	28.6	18.3	24.5	15.0	8.2	5.5	...
Poor municipality transfer	22.3	17.9	26.9	16.4	9.9	6.6	...
Transfer to poor barangays	23.7	18.8	27.7	16.4	8.6	4.8	...
Proxy means	29.5	23.6	31.3	12.0	3.3	0.4	...
Share of total income	2.6	3.6	9.6	14.0	21.9	48.2	...

Source: Fund staff estimates based on the 2000 input-output tables and 2003 FIES.

1/ Income gain as a percentage of total household consumption.

2/ Benefit per household in pesos.

3/ Percent of participating households.

4/ Percent of the benefit accruing to households.

disproportionately benefit from lower prices throughout the economy as well.¹⁰ The measure that was best targeted to poor households is the reduction in the price of kerosene. However, because kerosene consumption is relatively small, the revenue given back through the kerosene price reduction was a negligible portion of the total mitigating package.

Ultimately, the targeting performance of the social spending component of the mitigating package depends on its composition. The above analysis makes the simplifying assumption that additional social spending benefits existing users of health and education in proportion to usage. Alternatively, social spending increases could be used to expand access to health and education facilities. A comparison of the targeting and coverage of various forms of social spending could therefore be useful in guiding the choice of programs that should benefit from the additional spending.

IV. SOCIAL SPENDING OPTIONS

Five alternative forms of social spending are evaluated, to investigate whether altering the composition of social spending could improve targeting and coverage (Table 3). The first three programs are health related: improving existing public health facilities, expanding access to health facilities, and uniformly expanding access to health insurance. In addition, two education programs are considered: improving existing educational facilities and expanding access. A program's coverage is the proportion of persons that benefit, while targeting is determined by the percentage of benefits accruing to each income group.

Determining which households in the survey would benefit from the simulated programs requires several simplifying assumptions. In this case, persons are assumed to benefit from improving public health facilities if they reported experiencing illness or injury and visiting a public hospital, rural health unit, or barangay¹¹ health station.¹² By contrast, a person benefits from expanded access to health facilities if they were ill or injured, but did not visit any health facility in the last month.¹³ For health insurance, all persons living in households with no insurance are assumed to benefit from an expansion. Finally, for education, improving education facilities is assumed to benefit all children age 6 to 15 that were attending elementary or junior high school, while expanding access to education was assumed to benefit children of those ages currently not attending school. In each case, each beneficiary is assumed to receive the same transfer.

¹⁰ While it would be desirable to assess the impact of the reduction in the excise taxes on diesel separately from that on gasoline, these products are not distinguished in the household survey and therefore cannot be separated in the analysis. Hopefully, future versions of the household survey will include more detailed questions about energy consumption.

¹¹ A barangay is the administrative unit below the municipality level, roughly equivalent to a subdistrict.

¹² Coverage rates for improving and expanding health services are annualized, based on figures for utilization during the past month.

¹³ In general, poor households are less likely to report illness than rich households (Strauss and Thomas, 1998). To the extent this is true in the Philippines, analysis in this paper likely underestimates the extent to which poor households suffer from lack of access to health care.

Table 3. Philippines: Coverage and Targeting of Health and Education Spending

	Bottom Decile	2nd Decile	2nd Quintile	3rd Quintile	4th Quintile	Top Quintile	All
Coverage 1/	(In percent of total population in income group)						
Health							
Improving public facilities	57.0	59.7	59.2	57.6	51.2	33.1	53.6
Expanding access	90.6	90.9	89.0	85.8	82.2	73.2	86.0
Expanding insurance	95.1	92.5	85.4	71	51.5	31.9	69.8
Education							
Improving school facilities	28.1	26.7	24.8	21.7	18.2	15.3	22.1
Expanding school access	4.8	3.3	2.2	1.1	0.5	0.2	1.8
Targeting 2/	(In percent of total beneficiaries in income group)						
Health							
Improving existing public facilities	13	13	24.6	22.6	17.9	8.9	17.4
Expanding access to facilities	14.3	13.7	23.5	20.1	17	11.3	17.2
Expanding insurance	13.5	13.2	24.8	21.5	16.4	10.7	17.3
Education							
Improving school facilities	15.9	13.9	23.8	19.7	15.5	11.2	17
Expanding school access	34.1	21.2	25.9	12.1	5.1	1.6	14.5
Memorandum items:							
Percent sick or injured last month 3/	26	27.4	26.6	26	24.4	22.6	25.5
Percent aged 6-15	33	30	27	22.8	18.8	15.5	23.9

Source: Fund staff estimates based on the 2002 Annual Poverty Indicator Survey.

1/ Defined as the number of benefiting individuals divided by the total population in income group, in percent.

2/ Defined as the number of benefiting individuals divided by the total number of beneficiaries, in percent.

3/ Includes those that used non-public health facilities.

This methodology likely understates the targeting performance of expanding access to services, while overstating the targeting performance of improving existing services.

Inaccuracies in assessing targeting performance arise from the use of per capita income, which is likely measured with substantial error, as the sole indicator of household welfare. Regardless of their measured per capita income, households that forego education and health services are more likely to be truly poor, while households that utilize these services are less likely to be truly poor. Therefore, the use of measured income per capita as the sole measure of household welfare is likely understates the true targeting performance of programs that expand access while overstating the true targeting performance of programs that improve existing services.

Expanding access to education appears to be a relatively well-targeted program. An estimated 55 percent of the benefits accrue to the bottom quintile. Because of high student participation rates in the Philippines, this program covers relatively few households—only 4.8 percent of the children in the bottom decile and 3.3 percent of the second decile do not attend school. The other four programs are targeted about equally well, while offering better coverage than education expansion.

While all forms of social spending considered in this analysis appear to be better targeted than fuel tax cuts, only expanding access to schools delivers a high percentage of benefits to the poor. Of the other programs considered, improving existing school facilities offer an appealing combination of coverage and targeting, because poor households tend to have more children and school attendance is high nationally. However, with the exception of expanding access to education, the five social spending programs considered in this section provide only marginally bigger benefit to the poor than uniform untargeted transfers. It may therefore be useful to investigate alternative ways of compensating poor households, including direct targeted transfers.

V. TARGETED TRANSFER SCHEMES

An alternative approach to mitigation involves uniform cash transfers to households with certain characteristics.¹⁴ Four transfer schemes are evaluated, based on their progressivity, coverage, and targeting performance. To ensure a fair comparison, each is designed to cost as much as the existing mitigating measures. Therefore, to the extent that coverage varies, the amount of the transfer for participating households will also differ by program.

The four transfer schemes are constructed as follows:

- The first scheme targets the poorest municipalities, as determined by the NSCB's poverty map, such that 30 percent of all households are covered. In this hypothetical program, each participating household received P2,300 per month.
- The second transfer scheme targets households living in the municipalities currently benefiting from the KALAHÍ-CIDSS program (Box 2).¹⁵ The KALAHÍ program operates in 177 municipalities from the poorest 42 provinces. Municipalities were

¹⁴ The focus of this exercise is on assessing the benefits to the poor from targeting social assistance at lower levels of government. While transfers are modeled as cash assistance for the purposes of conducting the incidence analysis, we do not necessarily advocate instituting a targeted cash transfer scheme. Other methods of public assistance delivery, such as geographic targeting of social and infrastructure spending, may be easier to administer and more appealing politically. The modeling of transfers as cash is used as a proxy for other interventions that can be assumed to accrue to each household in an equal way. Nevertheless, these interventions may have important differences in terms of administrative costs and incentive effects, which are not addressed here.

¹⁵ KALAHÍ is an acronym in Tagalog that stands for "Linking Arms against Poverty." CIDSS stands for Comprehensive and Integrated Delivery of Social Services.

selected if they were in the poorest quartile of each province, as determined by a poverty map based on human capital, housing, and access to services. The 177 municipalities were matched to the household survey. Six percent of households lived in KALAH I municipalities, and the simulated scheme granted each residing household a P11,700 per month transfer.

Box 2. Philippines: KALAH I-CIDSS Project

Initiated in 2003, the KALAH I-CIDSS is a community-driven development project that aims to empower communities through their enhanced participation in community projects that reduce poverty. Community grants are used to support the building of low-cost, productive infrastructure, such as roads, water systems, clinics, and schools. Using a competitive process, villagers select projects from an open menu and prioritize them for funding. KALAH I-CIDSS has trained thousands of villagers in project planning, technical design, and financial management and procurement. The project is implemented by the Department of Social Welfare and Development (DSWD) with financial and technical support provided by the World Bank. 1/

In the fall of 2003, the World Bank conducted a preliminary survey that collected comparative information on household and village conditions in KALAH I and comparison communities. The results of the survey suggest that the KALAH I program is well targeted to poor communities. Various measures of poverty, including the level of means (income/expenditure), outcomes (education, health, housing, etc.), and perception (self-rated poverty) are all estimated to be very high in KALAH I municipalities. 2/

1/ Empowering the Poor: the KALAH I-CIDSS Community-Driven Project, World Bank, 2005.

2/ Community Driven Development and Social Capital: Designing a Baseline Survey in the Philippines, World Bank Report No. 32405-PH, May 2005.

- The third scheme targets poor households based on a proxy means test. The proxy means test identifies key socio-economic characteristics that are strongly correlated with economic status of a household, attaches a numerical weight to each characteristic, and assigns a score to each household by summing the weights for each characteristic that pertains to the household. All households with a score below a threshold are eligible for the program. This simulated program used a threshold at the 30 percentile of the distribution of scores, and the resulting transfers to household with scores below the threshold amounted to P2,300 per month. A similar program was implemented in Indonesia in 2005 (Box 3).¹⁶

¹⁶ Unfortunately, the results from a quantitative assessment of the targeting performance of the Indonesian transfer program, conducted by the World Bank, were not available at the time of this paper's publication.

Box 3. Indonesia: Social Safety Net to Mitigate the Impact of Fuel Price Increase

To mitigate the impact on the poor following the domestic fuel price increase in October 2005, the government launched a cash transfer program for 16 million low-income families. The program became effective in the fourth quarter of 2005 and ended in November 2006. With over 60 million people covered, this cash transfer program was possibly the largest such program in the world. The cash transfer was intended to compensate these households for the income losses due to the direct and indirect impacts of price increases for fuel and other commodities. Each beneficiary family received Rp 300,000 (about US\$30) every three months. The full cost of the program is estimated at nearly 0.7 percent of GDP.

Targeting. Indonesia's Central Statistics Bureau developed a database of low-income households. The development of the database was carried out in four stages. First, village leaders were interviewed to identify low-income families. The results of these interviews were crosschecked with other sources (e.g., a previous poverty census) to develop a roster of potential poor and near poor households. Second, a survey was undertaken of these households to ascertain key economic and social characteristics. Third, poverty rankings were determined using a proxy means test that correlates observable household characteristics with household income. Fourth, the budgetary allocation for the cash transfer for each region was determined from previous household survey data, with household eligibility set by the household's score on the proxy means test.

Delivery mechanism. Beneficiary cards and receipt coupons were printed and delivered by the post office. Eligible households with access to a post office collected their cash quarterly on designated days. Those in remote areas without such access received cash in their village.

Source: World Bank.

- Finally, the fourth transfer scheme targets households living in poor barangays. The barangays are ranked based on the average proxy means score of resident households. The available budget is then distributed to the barangays with the lowest score, such that 30 percent of households are covered, with a monthly transfer per household of P2, 300.

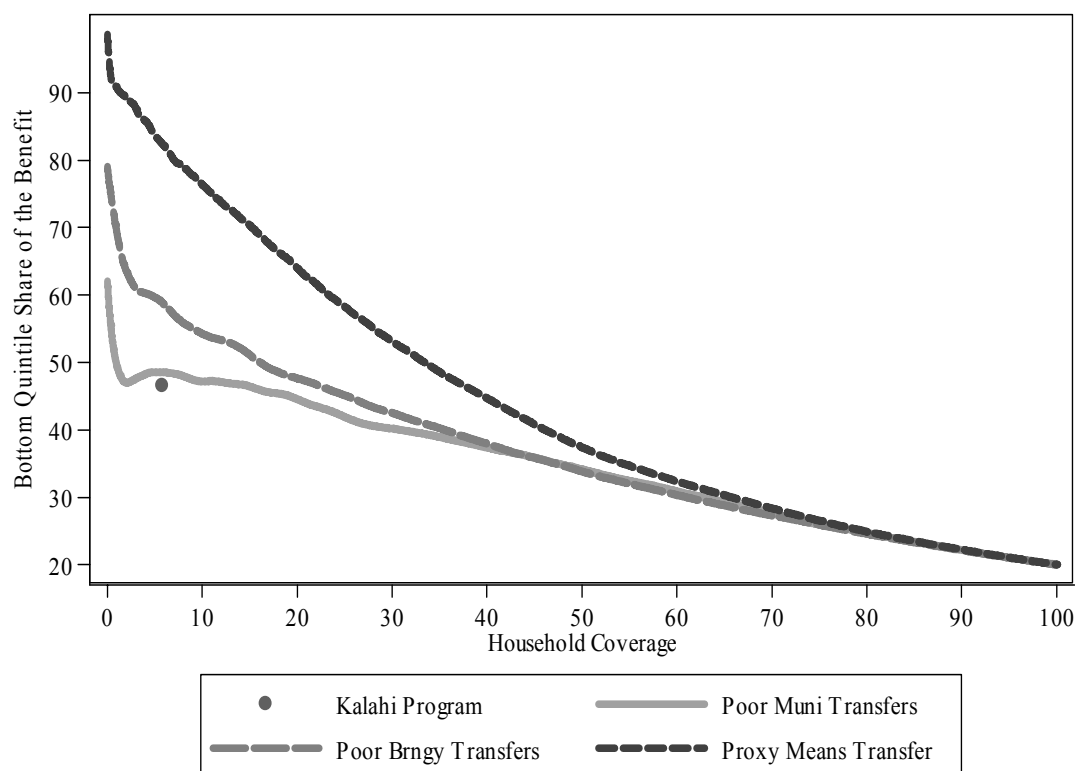
All four alternative transfer schemes are more progressive and better target the poor than the existing mitigating measures. Table 3 presents the incidence of the alternative compensation schemes. The KALAH and the proxy means schemes are slightly better targeted than uniform transfers to households living in poor municipalities or barangays. However, the KALAH program only covers 6 percent of all households, compared to about 30 percent of households covered by the other three schemes.

The proxy means transfer program offers the most favorable combination of targeting performance and coverage. It covers over 88.5 percent of households in the lowest decile but only 0.6 percent of households in the top quintile, with total coverage of 30 percent by design. The targeting under this program is also better than the targeting under the other transfer schemes. Under the proxy means program, households in the first two deciles receive over half of the benefits, compared to about 47 percent under the KALAH program, less than 43 percent under the poor municipality and barangay schemes, and only 15.1 percent under the current compensation program.

The improvement in targeting performance from identifying poor households rather than poor municipalities is largest when relatively few households receive transfers.

Figure 2 illustrates the gains from targeting at the household level, as opposed to the barangay or municipality level, at different levels of coverage. The horizontal axis represents the percentage of households receiving benefits, while the vertical axis represents the percentage of benefits that accrue to the bottom quintile of households. The KALAHI program, which covers 6 percent of the households, is slightly less well targeted than the transfer to the poorest municipalities covering the same number of households.¹⁷ Targeting at the household level, given the relatively low coverage, raises the bottom quintile's share of the benefit from 50 to 80 percent.¹⁸

Figure 2. Philippines: Alternative Transfer Schemes: Coverage vs. Targeting



Source: Fund staff estimates based on the 2003 FIES.

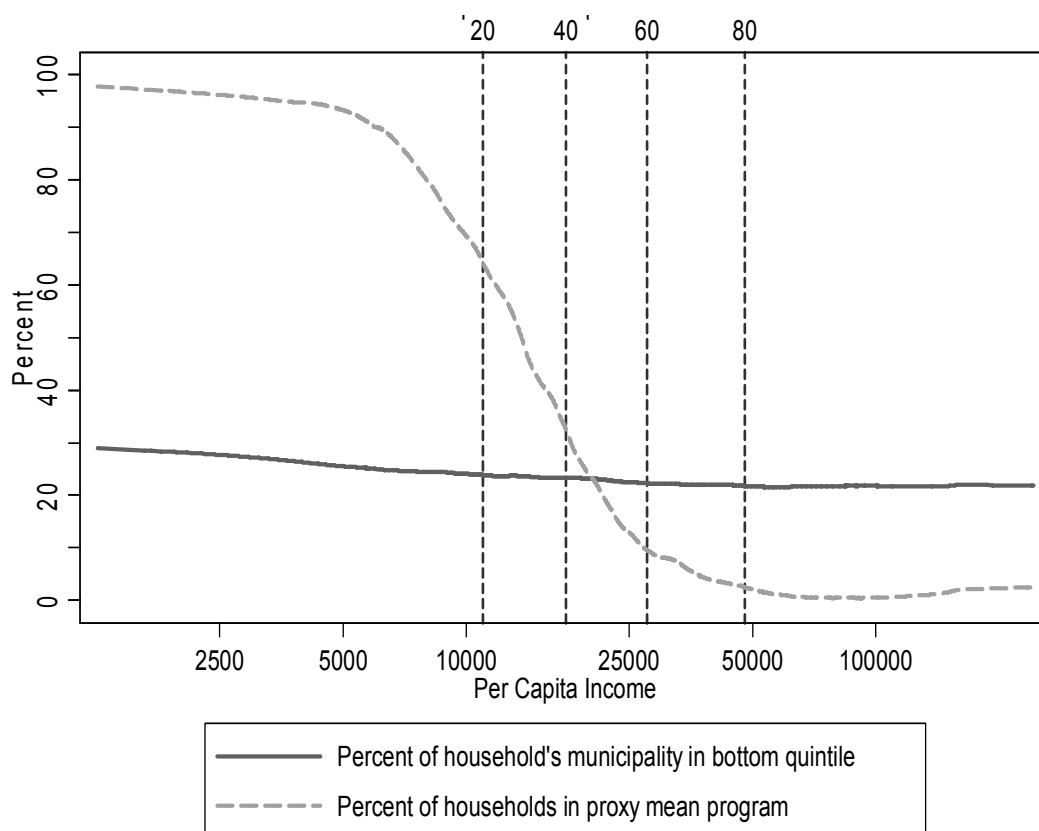
¹⁷ The KALAHI program also selected poor municipalities, but used a slightly less accurate method to identify poor municipalities than the NSCB method, on which the simulation is based.

¹⁸ The additional benefit to targeting at the household level rather than the community level, when coverage is low, may be overestimated if household income per capita suffers from classical measurement error. In this case, the heterogeneity of living standards in poor communities will be overstated, while the proxy means targeting algorithm will be unaffected.

The superior targeting performance of the proxy means programs at low levels of coverage reflects the diversity of household living standards within municipalities.

Figure 3 displays, for households at different per capita income levels, the percentage of households living in the same municipality whose per capita income falls in the bottom quintile. For comparison, the percentage of households in the proxy means program is also displayed. For the proxy means program, over 90 percent of the poorest households participate while none of the richest households do. When looking at geographic targeting, the poorest households live in municipalities where roughly 30 percent of their neighbors are in the bottom quintile. Meanwhile the richest households live in municipalities with slightly less than 20 percent of the households are in the bottom quintile. This weak negative relationship between household income and local poverty demonstrates that municipalities in the Philippines are remarkably desegregated and heterogeneous with respect to class. Consistent with this, roughly 95 percent of the variation in log per capita income is attributable to variation within municipalities.

Figure 3. Philippines: Alternative Transfer Schemes Proxy Means vs. Geographic Targeting
(Per capita consumption percentile)



Source: Fund staff estimates based on the 2003 FIES.

This analysis suggests that replacing the existing tax and assumed spending measures with targeted transfers has the potential to effectively compensate the poorest households at a fraction of a cost (Figure 4). For example, fully compensating the bottom

quintile for the adverse effects of the VAT reform using

transfers to poor municipalities rather than the

existing mitigating package requires 72 percent fewer

pesos. However, this finding should be interpreted with

caution. First, since transfers programs are not perfectly

targeted, not all households in the bottom decile would

receive compensation. Rather, households would be

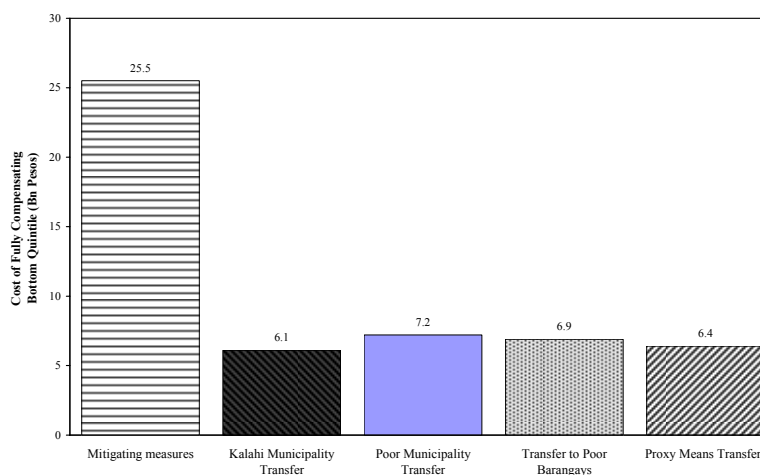
compensated on average, with total compensation fully

offsetting the total tax burden of the VAT reform for the

bottom decile. Second, our analysis does not account for the administrative costs associated with putting new transfer schemes in place, nor possible inefficiencies and leakages in

implementing transfer programs, which would reduce the attractiveness of targeted transfer programs relative to tax cuts.¹⁹

Figure 4. Philippines: Cost of Fully Compensating Bottom Quintile



VI. CONCLUSION

While the VAT reform did impact Philippine households, concerns about negative distributional effects from the VAT reform do not appear well founded. The VAT reform itself is found to be generally progressive and well targeted. The tax mitigating measures were successful at alleviating the effect of the reform on households in general, but a large amount of the benefits accrued to high income groups. The planned social spending increases are likely to be more successful in reaching the poor, depending on their exact composition.

Various transfer programs are identified that would have been much better targeted than across-the-board energy tax cuts. In addition to the existing KALAHI program, the analysis in this paper has identified three other targeted transfer programs that would be much better targeted than across-the-board energy tax cuts: targeting municipalities based on

¹⁹ The analysis also ignores the possibility that cash transfers may reduce incentives to work, if households spend a portion of the benefit on leisure. However, the cash transfers considered here are relatively small—only amounting to 5 percent of consumption for the poorest decile. Indeed, Mexico's Progreso program, which delivered transfers equal to 20 percent of consumption, had a negligible effect on incentives to work (Skoufias and Maro, 2006)

their predicted poverty level; targeting barangays based the assets and demographic characteristics of their households, and targeting poor households directly. Household level targeting suffers from the least benefit leakage to wealthier households, although the advantage becomes less important as coverage increases.

A well designed social safety net can significantly enhance the conduct and the flexibility of fiscal policy and improve outcomes for the poor. A well-designed social safety net generally targets the poor more effectively than untargeted social spending, and much more effectively than tax reductions. Moreover, the institutional capacity developed to implement targeted transfers can be used to mitigate the adverse effects of economic shocks and any new reforms. This reduces the need to resort to ad hoc mitigating measures, including temporary changes in domestic taxes and import duties that can undermine government revenues, introduce inefficient relative price distortions, and weaken the business environment by destabilizing the tax system. Successful experience with targeted social assistance already exists in the Philippines (e.g., the KALAHI-CIDSS program) and can be further extended and refined to deliver social assistance benefits to the poor even more effectively.

Appendix I. The Value-Added Tax Law Before and After the Reform

Prior to the 2005 VAT reform, the Philippines VAT was levied at a standard rate of 10 percent. Zero-rating and exemptions were limited with a number of important exceptions. In addition to a standard zero-rating of exports, a zero VAT rate was also applied to services paid in foreign currency and the supplying of goods and services to exporters. The economic sector that benefited most from the VAT exemptions was agriculture, broadly in line with its tax treatment in other developing countries. Non-standard VAT exemptions included petroleum products and raw materials; power generated by electric cooperatives; sales by cooperatives other than agriculture, electric, or credit cooperatives; sales by artists of their works; and vessels of more than 5,000 tons and spare parts thereof.

VAT receipts were low, both compared to the potential and to collections in other countries in the region. VAT productivity, measured as the ratio of VAT revenues to GDP divided by the standard rate, was only 31 percent, compared to a 40 percent unweighted average in the Asia-Pacific Region (Table 4). The low productivity partly reflected the importance of the VAT-exempt agriculture in the Philippines, but also problems with tax administration, and the exclusion of other important sectors, such as the energy sector, from the VAT base.

Table 4. Philippines: VAT Revenue Productivity in Asian and Pacific Countries 1/

	Current Standard VAT Rate (In percent)	Current Other Positive Rates	Total VAT revenue		Revenue Productivity 2/ Based on		Applicable year
			(In percent of consumption)	(In percent of GDP)	Consumption	GDP	
1 Australia 3/	10.0		5.58	4.14	0.56	0.41	2002
2 Bangladesh 4/	15.0		3.08	2.53	0.21	0.17	2001
3 Cambodia	10.0		2.75	2.45	0.28	0.24	2003
4 China, P.R.: Mainland 5/ 6/	17.0	4.0; 6.0; 13.0	11.09	6.57	0.65	0.39	2002
5 Fiji	12.5		8.03	6.88	0.64	0.55	2002
6 Indonesia	10.0	5.0	4.52	3.52	0.45	0.35	2001
7 Japan 3/	5.0		3.21	2.38	0.64	0.48	2003
8 Korea 3/	10.0		6.90	4.64	0.69	0.46	2003
9 Mongolia 3/	15.0		10.32	8.34	0.69	0.56	2003
10 Nepal 4/	10.0		3.23	2.89	0.32	0.29	2001
11 New Zealand	12.5		12.21	9.06	0.98	0.72	2003
12 Papua New Guinea	10.0		3.14	2.56	0.31	0.26	2003
13 Philippines 7/	10.0		3.96	3.14	0.40	0.31	2003
14 Singapore 4/	5.0		2.70	1.49	0.54	0.30	2003
15 Sri Lanka	15.0	10.0	3.95	3.76	0.26	0.25	2001
16 Thailand 3/	7.0		3.79	2.53	0.54	0.36	2003
17 Vanuatu 8/	12.5		8.98	7.50	0.72	0.60	2001
18 Vietnam 3/	10.0	5.0; 20.0	6.52	4.85	0.65	0.49	2002
Unweighted average	10.9		5.78	4.40	0.53	0.40	
Unweighted average (Excluding Australia, Japan, Korea and New Zealand)	11.4		5.43	4.21	0.48	0.37	

Sources: IMF, Country documents; *World Economic Outlook* (IMF); *Taxes and Investment in Asia and the Pacific* (IBFD); *Corporate Taxes 2003-2004, Worldwide Summaries* (PricewaterhouseCoopers); and Fund staff estimates.

1/ Central government.

2/ Revenue productivity = Total VAT revenue as percentage of consumption or GDP, divided by the VAT standard rate.

3/ General government.

4/ The data reported as Fiscal Year in the country documents, however, for comparison purposes, the data was converted into Calendar Year.

5/ Includes excises on imports.

6/ State budget.

7/ Includes VAT on imports.

8/ Includes Turnover tax (wholesale and retail).

Faced with declining tax revenues and increasing deficits and debt, in the summer of 2004, the Philippine authorities embarked on an ambitious tax reform program. The centerpiece of the program was the reformed VAT law that expanded the tax base to electricity, petroleum products, and selected professional services, and increased the standard rate to 12 percent (Box 4). The VAT reform, including the mitigating measures, is expected to bring about 1.3 percentage points of GDP in additional revenues annually (Table 5).²⁰

Table 5. Philippines: Revenue Yield from the VAT Law and Mitigating Measures 1/

Measure	Yield (Billions of pesos)	Yield (percent of GDP, full year basis)
Widening the base	37.1	0.6
of which: crude oil and petroleum products	30.7	0.5
Raising the rate from 10 to 12 percent	33.4	0.6
Raising the CIT rate	17.2	0.3
Changing refund procedures	17.6	0.3
Mitigating measures 2/	-26.9	-0.4
Net impact	78.4	1.3

1/ Fund staff estimates.

2/ Includes the reduction in the oil import tariff from 5 to 3 percent.

²⁰ This estimate does not include the authorities' plans to spend a portion of the incremental revenue from the VAT reform on social and infrastructure projects.

Box 4. Philippines: Main Features of the VAT Reform

- Standard VAT rate increased from 10 to 12 percent on February 1, 2006.
- Previously exempt goods and services that became subject to the VAT:
 - Coal, natural gas, and other indigenous fuels;
 - Petroleum products and their raw materials;
 - Power;
 - Electric cooperatives;
 - Domestic transport of passengers by air and sea;
 - Medical services;
 - Legal services;
 - Cotton and cotton seeds; non-food agricultural products;
 - Works of art, literary works, musical composition.
- Goods and services that became zero-rated:
 - Transport of passenger or cargo by air or sea to a foreign country;
 - Services rendered to aircrafts and vessels engaged in international transport;
 - Sale of goods, supplies, and fuel to aircrafts and vessels engaged in international transit.
- Other changes:
 - The staggering of input VAT on capital equipment over a 5-year period;
 - An input VAT credit cap at 70 percent of output VAT in a given quarter;
 - Removal of 1.5 percent presumptive input VAT on public works contractors;
 - A 5 percent sales tax on government purchases of goods and services and public works contracts in lieu of VAT.
- Mitigating measures:
 - Reduction of excise tax on kerosene, diesel, bunker fuel oil, and regular gasoline;
 - Removal of a 2 percent franchise tax on gross receipts of power distribution utilities;
 - Removal of a 3 percent franchise tax on gross receipts of domestic airlines and common carriers tax on domestic shipping;
 - Increase in the presumptive input VAT of agro-processors from 1.5 to 4 percent of gross value of agro-input purchases;
 - Increase in the marginal threshold from P 550 thousand to P 1.5 million per annum; rental threshold from P 8,000 to P 10, 000 per month; and real property threshold from P 1 to P 2.5 million.
- Non-VAT reform measures, adopted as part of the reform package:
 - Increase in the corporate income tax rate from 32 to 35 percent, with automatic reduction to 30 percent envisaged in 2009.
 - Increase in the gross receipts tax from 5 to 7 percent on royalties, rentals of property, real or personal, profits from exchange and all other items treated as gross income, of banks and non-bank financial intermediaries.
 - Removal of Philippine Amusement and Gaming Corporation (PAGCOR) income tax exemption.
- Incremental revenue earmarking:
 - 50 percent of local government units' share in incremental VAT collections was earmarked for the following purposes:
 - ✓ Public elementary and secondary education, to finance construction of school buildings, school furniture, and in-service training of teachers;
 - ✓ Health premiums of enrolled indigents;
 - ✓ Environmental conservation;
 - ✓ Agricultural modernization to finance construction of farm-to-market roads and irrigation facilities.

Source: Department of Finance Brief on the VAT Reform Law.

The reformed VAT law incorporated a number of mitigating measures, including a reduction in the selected petroleum excises and the removal of selected franchise taxes (Table 6). Other mitigating measures that were adopted outside of the VAT reform included a reduction, in November 2005, of the import duty on oil and petroleum products from 5 to 3 percent. This largely supported the price of diesel, which accounts for 85 percent of the value of petroleum product imports. In addition, a sliding scale for the oil import duty, based on international prices of oil and fuels, was introduced in May 2006.²¹ Altogether, these measures are estimated to have cost the government about P39.1 billion in lost revenues annually (0.6 percent of GDP; Table 7). In addition to these mitigating measures, the authorities announced plans to spend an increasing share of the incremental revenue receipts from the reformed VAT on infrastructure and social services.²²

Table 6. Philippines: Excise Taxes on Fuels

	Prior to the reform (P/li)	After the reform (P/li)
Regular gasoline	4.80	4.35
Kerosene	0.60	0.00
Diesel	1.63	0.00
Bunker fuel	0.30	0.00

Source: Philippine authorities.

Table 7. Philippines: Revenue Loss from Mitigating Measures

	Peso bln.	%GDP
Total	39.1	0.6
Reduction in fuel excises	14.2	0.2
Of which: reduction in diesel excise	12.1	0.2
Removal of franchise taxes	3.3	0.1
Reduction in the oil tariff from 5 to 3 percent	8.5	0.1
Other	1.0	0.0

Source: Philippine authorities and Fund staff estimates.

²¹ The adjustment mechanism linked the tariff on oil and oil-product imports to the oil price: the tariff (3 percent prior to the measure) would be automatically reduced (increased) by 1 percentage point within a 0–3 percent range, once monthly average price of Dubai crude falls above (below) a certain trigger level. This provision expired in November 2006.

²² The share would increase from 30 percent in 2006 to 35 percent in 2007 and to 40 percent in 2008.

Appendix II. Estimating the Incidence of the VAT and Excise Taxes on Welfare

This appendix details the approach used to evaluate the distributional impact of changes in VAT and excise taxes on the economic welfare of households. A price-shifting model, based on an input-output model, is used to estimate the effective tax rates implied by the set of VAT and excise taxes throughout the economy (see for more details Gillingham and El-Said, 2005, Coady, 2006). This model accounts for exemptions and excise taxes that are passed through the production and distribution chain. To simulate the effect of VAT reforms, we derive the effective tax rates of the pre-reform and the post-reform system, and then derive the effective taxes for the post-reform VAT.²³ The difference between the vector of post-reform and pre-reform effective tax rates constitutes the change in after-tax prices resulting from the reform.

The implementation of the price-shifting model requires information on the input-output structure of the economy. We use the input-output table for the Philippines for 2000, which was constructed by the NSCB, and contains information on 240 sectors. The domestic and imported intermediate flows are added together. The total amount of inputs for each sector is then divided by gross output to construct the coefficient matrix, the elements of which indicate what percentage of gross output is accounted for by inputs from a particular sector.

Evaluating the effect of the tax reforms on household real incomes requires the calculation of budget shares for each sector in the input-output table. To obtain budget shares, we mapped each of the 279 items in the household consumption survey to one of the 240 sectors contained in the input-output tables. For example, rice was mapped to rice and corn milling, while canned meat was assigned to meat processing. Most household appliances and durables were assigned to their corresponding manufacturing sector. This mapping enabled the calculation of total expenditure for each sector, which was divided by total expenditure to generate the sectoral budget share for each household. To obtain the effect of the tax reform on real income, proportional price increases, dq or dq^* , for each good or service are multiplied by the corresponding household budget share for that good or service, and aggregated across goods and services. This real income effect is then averaged across household welfare groups, based on their per capita income, to examine the distributional impact of the reform.

Households are separated into welfare groups on the basis of per capita income, to be consistent with official poverty estimates in the Philippines. Consumption is typically preferred to income as an indicator of household welfare, however, for several reasons. These include the sensitivity of stating income in interviews, and many households' lack of knowledge of returns from assets are not always known, and many self-employed households do not know annual or monthly profits from their business. Table 8 shows a percentage of households in each per capita consumption quintile that are placed into different per capita

²³ When calculating the effective tax rates for the pre-reform tax system, tax rates t are expressed as a proportion of producer prices, and were therefore renormalized and expressed as a proportion of user prices using the transformation $t/(1+t)$.

income quintiles. It shows that household income quintiles are broadly similar to household income quintiles.

Table 8. Philippines: Distribution of Per Capita Income Quintile

Per capita consumption quintile	Per capita income quintile					Total
	1	2	3	4	5	
1	86.2	13.1	0.7	0	0	100
2	13.2	69.8	16.0	1.0	0	100
3	0.6	16.2	67.9	14.9	0.4	100
4	0.1	0.8	14.9	72.7	11.5	100
5	0.0	0.1	0.5	11.3	88.1	100

Finally, for any given set of price changes, the welfare effects will depend on the level of consumption of a household as well as how household consumption changes in response to changes in relative prices. Ceteris paribus, the greater the ability of a household to substitute away from commodities with relatively large price increases the lower the welfare impact. In our analysis we assume that the price elasticity of substitution is equal to zero and hold quantities of consumption constant. Our estimates of the welfare effect are therefore an upper bound on the true welfare impact. They are also first-order effects in the sense that the indirect price changes do not reflect any changes in production technology in response to the change in relative and absolute prices.

Appendix III. Simulating Targeted Transfer Programs

This appendix describes the method used to construct the four targeted transfer programs that are considered as alternative ways to mitigate the adverse effect of the tax reforms. The four programs are: (1) a uniform transfer to households in poor municipalities; (2) a transfer to households living in poor barangays; (3) a transfer to households living in municipalities benefiting from KALAHÍ-CIDSS, an existing targeted community-driven development program; and (4) a uniform transfer to poor households, selected using a proxy means test based on household assets and demographic characteristics.

The simulated transfers to poor municipalities, barangays, and household is constructed to cover 30 percent of households, or 4.9 million households. The total budget for each program was set equal to the estimated cost of the tax and spending mitigating measures that were actually adopted. This was 11.2 billion pesos per month, which spread over 4.9 million households, amounts to roughly 2,300 pesos per household per month. On the other hand, the KALAHÍ program only operates in municipalities containing 6 percent of households, and in the simulated transfer to municipalities covered by the KALAHÍ program, each household receives 11,700 pesos per month.

The programs select beneficiaries at different geographic levels. The municipality transfer program selects the poorest municipalities containing 30 percent of the households. Municipalities are ranked according to the estimated headcount ratio using the municipality-specific poverty estimates computed by Haslett and Jones (2005). These poverty estimates are constructed using census data mapped to the 2000 FIES, based on 38 variables representing household assets and demographic characteristics, and 31 regional dummy variables. Predicted income was then used to construct poverty estimates for each municipality.

For the transfers to poor households and barangays, the selection of beneficiaries was based on a proxy means test of households. The proxy means test, which was simulated using the 2003 FIES data, is based on 25 asset and demographic characteristics of the household, and 17 regional dummy variables. The asset and demographic characteristics include: family size, age and sex of the head, type of roof and walls, and ownership of several durable goods. As in other proxy means tested programs, the simulated program based eligibility on these demographic and asset characteristics, and assigned each household characteristic a weight. The weight for each variable was set equal to the coefficient for that characteristic, taken from a regression of log per capita expenditure on the full set of household characteristics.²⁴

To determine the beneficiaries of the household proxy mean program, each household was assigned a score equal to the weighted sum of the characteristics, which is equivalent to their predicted consumption. Households with scores below a pre-determined threshold are eligible for the program and receive a transfer. The threshold was set such that 30 percent of the households are covered by the program. Meanwhile, for the transfers to poor barangays,

²⁴ The regression results are available upon request.

household proxy mean scores were averaged across each barangay in the sample. This ranking of barangays was used to select the 30 percent of households living in the poorest barangays, according to the proxy means score.

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