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On Pro-Poor Government Fiscal Policies:

With Application to the Philippines

NANAK KAKWANI and HYUN SON

Nanak Kakwani is a consultant at the Economics and Development Resource Center, Asian Development Bank, and Hyun Son is a Ph.D. scholar at the University of NSW, Sydney. This paper is to be delivered at the ***Asia and Pacific Forum on Poverty: Reforming Policies and Institutions for Poverty Reduction***, to be held at the Asian Development Bank, Manila, 5-9 February 2001.

I. Introduction

A fiscal system may be defined as pro-poor if it redistributes income from the rich to the poor so that there is a rapid reduction in poverty. This can happen through the ways the government collects and spends its revenue. Unfortunately, poverty reduction is generally not an overriding objective of government policies. Governments make policies keeping in view a multiplicity of objectives. In many countries, governments knowingly or unknowingly adopt policies that are biased in favor of the rich. Consequently, there is slower reduction in poverty.

This paper is concerned with the assessment of government fiscal policies from the viewpoint of poverty reduction. A fiscal system has many components. The main objective of the paper is to measure the degree of pro-poorness of various components and how the overall fiscal system can be reformed in order to achieve a maximum reduction in poverty.

Kakwani (2000) derived poverty elasticity with respect to income components. This elasticity is decomposed into an income effect and a redistribution effect. It is the redistribution effect that measures the relative importance of various income components in reducing poverty. Using this decomposition, this paper develops a poverty reform index that can be utilized to assess fiscal policies in view of bringing about marginal reforms. This index ensures that the reform leads to a maximum reduction in poverty.

The paper also discusses the issue of reforming indirect taxes and subsidies in view of reducing poverty. This task can be accomplished by deriving the poverty elasticity with respect to prices of individual commodities. This elasticity is also decomposed into an income effect and a redistribution effect. The poverty reform index, derived from this decomposition, is then employed to assess indirect taxes and subsidies again from the viewpoint of achieving a maximum reduction in poverty.

The methodology developed in the paper is applied to the Philippines utilizing the 1998 Annual Poverty Indicator Survey (APIS). This survey gathers detailed information on different sources of income and expenditures from 78 provinces and all cities and municipalities of Metro Manila.

The paper is organized as follows. Section II discusses the poverty measures and their growth elasticity. The poverty elasticity of income components is derived in section III. Section IV develops the poverty reform index. Section V deals with the indirect taxes and subsidies. An overview of the

Philippine fiscal system is presented in section VI. Sections VII and VIII present the case study for the Philippines. Finally, some concluding remarks are presented in Section IX.

II. Poverty Measures and Growth Elasticity

Suppose income x of an individual is a random variable with distribution function given by $F(x)$. Let z denote the poverty line, then $H = F(z)$ is the proportion of individuals whose income falls below the poverty line or H is the proportion of poor in the society. H is the most popularly used poverty measure and is called the headcount ratio.

The headcount ratio is a crude measure of poverty. The percentage of the population that is poor does not reflect the intensity of poverty suffered by the poor. The problem is, How poor are the poor? They may have incomes that approximate the threshold level or they may have incomes of almost zero. The headcount ratio says nothing about how far below the poverty threshold the income of the average poor person is. Another property of a desirable poverty measure is that it should decline when a poor person receives a transfer of income from a less-poor person (Sen 1976). A general class of poverty measure that possesses all these desirable attributes of poverty can be written as

$$\theta = \int_0^z P(z, x) f(x) dx \quad (1)$$

where $f(x)$ is the density function of x and

$$\frac{\partial P}{\partial x} < 0, \quad \frac{\partial^2 P}{\partial x^2} > 0, \quad P(z, z) = 0$$

and $P(z, x)$ is a homogenous function of degree zero in z and x .

Foster, Greer, and Thorbecke (1984) proposed a class of poverty measures that is obtained by substituting

$$P(z, x) = \left(\frac{z - x}{z} \right)^\alpha \quad (2)$$

in (1), where α is the parameter of inequality aversion. For $\alpha = 0$, $\theta = H$, that is, the headcount ratio. This measure gives equal weight to all poor irrespective of the intensity of their poverty. For $\alpha = 1$, each poor is weighed by his or her distance from the poverty line, relative to z . This measure

is called the poverty gap ratio. For $\alpha = 2$, the weight given to each poor is proportional to the square of his or her income shortfall from the poverty line. This measure is called the severity of poverty ratio, which has the desirable property of being sensitive to the distribution of income among the poor, thus making poverty sensitive to income transfers among the poor.

The degree of poverty depends on two factors: average level of income and extent of inequality in income distribution. Thus a poverty measure can always be written as

$$q = q(\mu, L(p)) \quad (3)$$

where μ is the mean income of the society and $L(p)$ is the Lorenz function measuring the relative income distribution. $L(p)$ is the percentage of income that is enjoyed by the bottom p percent of the population.

The growth effect measures the effect of a change in μ on θ when $L(p)$ remains constant. On the other hand, the redistribution (or inequality) effect measures the effect of a change in $L(p)$ on θ when μ remains constant. The total effect of economic growth on poverty can be decomposed into two factors: (i) the impact of growth when the inequality does not change, and (ii) the impact of change in inequality when the mean income of the society is kept constant.

To measure the growth effect, Kakwani (1993) derived the elasticity of θ with respect to μ , keeping $L(p)$ fixed (called growth elasticity). This elasticity is given by

$$h_q = \frac{1}{q} \int_0^z x \frac{f(x)}{f(x)} f(x) dx \quad (4)$$

which is always negative in view of $\frac{\partial P}{\partial x} < 0$.

Substituting (2) into (4) gives the growth elasticity of the Foster, Greer, and Thorbecke (1984) class of poverty measures denoted by h_a with respect to μ as

$$h_a = \int_0^z x \left(\frac{z-x}{z} \right)^{\alpha-1} f(x) dx \quad (5)$$

for $\alpha \neq 0$.

III. Poverty Elasticity with Respect to Income Components

The total (or net) income of an individual is the sum of several income components. The income components consist of market income (wages and salary, interest, investment income, and income from self-employment) and nonmarket income (includes various government and private transfers

both in cash and kind). Since poverty should be measured on the basis of disposable income (the income available to individuals), we must deduct personal income tax paid by the individuals from the gross income. Let x be the net or disposable income and $g_i(x)$ the i th income component received by an individual or household with net income x . Then, obviously

$$x = \sum_{i=1}^m g_i(x) \quad (6)$$

where m is the total number of income components of which one is the income tax paid by the individual, which enters in (6) as a negative component.

Our objective is to measure the responsiveness of θ with respect to the mean of the i th income component, viz, μ_i . This is accomplished by deriving the elasticity of θ with respect to μ_i , which we may call i th income component elasticity. To derive this elasticity, we assume that a change in μ_i does not affect the distribution of the i th income component across the net income. This elasticity, which has been derived earlier by Kakwani (2000), is given by:

$$\eta_{\theta i} = \frac{\partial \theta}{\partial \mu_i} \frac{\mu_i}{\theta} = \frac{1}{\theta} \int_0^z \frac{\partial P}{\partial x} \cdot g_i(x) f(x) dx \quad (7)$$

For the Foster–Greer–Thorbecke class of poverty measures, the i th income component elasticity is derived from (8) as

$$\eta_{\alpha i} = \frac{\alpha}{z P_\alpha} \int_0^z \left(\frac{z-x}{z} \right)^{\alpha-1} \cdot g_i(x) f(x) dx \quad (8)$$

for $\alpha \neq 0$ which can easily be computed given data on income components and the net income x .

IV. Poverty Reform Index

This section considers the problem of bringing marginal reforms in government tax and expenditure policies so that aggregate poverty is minimized. This is accomplished by deriving a poverty reform index based on the income component elasticity derived in the previous section. In view of (7) and (4), it can be easily seen that

$$\sum_{i=1}^m \eta_{\theta i} = \eta_\theta \quad (9)$$

which implies that if all income components grow at the same rate of 1 percent, then the total poverty will change by η_θ percent.

A change in μ_i has two effects. First, it changes the total mean income μ and secondly, it shifts the Lorenz curve. Thus, we may decompose the poverty elasticity $\eta_{\theta i}$ into two components:

$$\eta_{\theta i} = \frac{\mu_i}{\mu} \eta_{\theta} + \left(\eta_{\theta i} - \frac{\mu_i}{\mu} \eta_{\theta} \right) \quad (10)$$

The first term on the right-hand side is the income effect and the second term is the redistribution effect. Note that income effect is always negative because an increase in any income component will reduce poverty. The redistribution effect can be both positive and negative. It is the redistribution effect that tells us whether an increase in μ_i favors the rich or the poor. If this component is negative (positive), it means that the redistribution effect of the i th income component reduces (increases) poverty. This leads us to suggest a poverty reform index:

$$f_i = \frac{h_q m}{h_q m_i} \quad (11)$$

which is always positive. It can be shown that

$$\sum_i s_i f_i = 1,$$

where s_i is the income share of the i th component, which implies that the weighted average of all f_i is equal to 1. The i th income is pro-poor (pro-rich) if f_i is greater (less) than 1. Thus, the value of f_i will indicate which income component is pro-poor and which is not.

f_i measures the marginal benefit in terms of reducing poverty of an extra dollar spent on the i th income component. Suppose i and j are two different income components if $f_i > f_j$ then one dollar spent on the i th component will lead to a greater reduction of poverty than one dollar spent on the j th component. Or in other words, we reduce poverty by cutting down expenditure on the j th income component and increasing the expenditure of the same amount on the i th income component. If our objective is to minimize poverty, then ϕ_i can be usefully employed to bring marginal reform in the allocation of money to various income components.

V. Indirect Taxes and Subsidies

To bring reforms to indirect taxes and subsidies, we will need to measure the impact of price changes on total poverty. This task can be accomplished by deriving poverty elasticity with respect to prices of individual commodities. To derive the elasticity, let us write the disposable income as

$$x = \sum_{i=1}^k p_i q_i(x) + S(x) \quad (12)$$

where p_i is the price of the i th commodity and $q_i(x)$ is the quantity of the i th commodity consumed by an individual whose disposable income is x , where $i = 1, 2, \dots, k$, k being the number of commodities that are available for consumption.. $S(x)$ is the saving of the individual with income x .

Suppose due to indirect taxes and subsidies, the price vector \underline{p} changes to \underline{p}^* , then how will this change affect the individual's real income? To answer this question, we consider the cost function $e(u, \underline{p})$, which is the minimum cost required to obtain u level of utility when the price vector is \underline{p} . The real income of the individual with income x will change by

$$\Delta x = -[e(u, \underline{p}^*) - e(u, \underline{p})], \quad (13)$$

which on using Taylor's expansion gives

$$\Delta x = -\sum_{i=1}^k (p_i - p_i^*) q_i(x)$$

This equation immediately gives

$$\frac{\partial x}{\partial p_i} = -q_i(x) \quad (14)$$

Differentiating (1) with respect to p_i and utilizing (14) gives

$$\frac{\partial q}{\partial p_i} = -\int_0^z \frac{\partial P}{\partial x} \cdot q_i(x) f(x) dx$$

which gives elasticity of q with respect to p_i as

$$e_i = \frac{\partial q}{\partial p_i} \frac{p_i}{q} = -\frac{p_i}{q} \int_0^z \frac{\partial P}{\partial x} \cdot q_i(x) f(x) dx \quad (15)$$

which will be positive because an increase in any price will increase poverty. It will be useful to write

$$e_i = -\frac{p_i q_i}{m} h_i + (e_i + h) \quad (16)$$

where m is the mean income of the disposable income and $\overline{p_i q_i}$ is the mean expenditure of the i th commodity.

The first term in (16) is the income effect of the price increase and the second term is the redistribution or inequality effect of price change. It is the redistribution effect again that tells us

whether an increase in price p_i hurts the poor more than the rich. If this component is positive, it means that the i th commodity price increase hurts the poor more than the rich (because the redistribution of income caused as a result of increase in the i th commodity price will increase poverty). This leads us to suggest the price poverty reform index:

$$f_i = \frac{e_i m}{p_i q_i} \quad (17)$$

If f_i is greater (less) than 1, an increase in the i th price hurts the rich (poor) more than the poor (rich). Thus, if f_i is negative, then the i th commodity should be subsidized so that the poor benefit more than the rich. On this account, f_i can be utilized to improve the tax or subsidy system so that social welfare is maximized.

VI. An Overview of the Philippine Fiscal System

Like many Asian countries, the Philippines's fiscal system is highly centralized. The national government collects most of the taxation revenue and also spends most of it. Thus, the national government can play a critical role in poverty reduction.

Table 1 presents an overall revenue structure of the national government. It can be seen that the major source of government revenue comes from taxation. The nontax revenue is only 9.93 percent of the total revenue.

The revenue share of direct taxes is almost 40 percent in the Philippines, which is quite high compared to other East Asian countries such as Thailand. The individual income tax contributes only 13.35 percent to the total government revenue. The corporate income tax, which is levied on the net income of the companies, provides the major share of the government revenue. Its share in 1998 was 16.25 percent.

Within the indirect tax structure, three taxes dominate. These are the import taxes (which include import duties and VAT on imports), value-added tax (VAT), and excise or selective sales taxes. The most dominant indirect tax is the VAT, which is a sales tax levied on the producers and importers of goods and services based on their gross sale receipts or import values. The share of VAT on domestically produced goods and services is 10.28 percent while that on the imports is 5.88 percent.

Table 1. **Fiscal System in the Philippines, 1998**

Type of taxes	Actual Tax (in billion pesos)	Distribution of Taxes	Tax as Percent of GNP
Net income and profits	183914	39.76	6.58
Individual income tax	61755	13.35	2.21
Corporate income tax	75153	16.25	2.69
Tax on T-Bills	15885	3.43	0.57
Commercial paper	2	0.00	0.00
Bank deposits	26732	5.78	0.96
Capital gains tax	4387	0.95	0.16
Excise Taxes	62755	13.57	2.25
Alcohol products	12428	2.69	0.44
Tobacco products	16768	3.63	0.60
Fuel and oil	30758	6.65	1.10
Mining	124	0.03	0.00
Automobiles	2629	0.57	0.09
Tobacco inspection fee	32	0.01	0.00
Miscellaneous	16	0.00	0.00
Sales Tax, Value-added Tax, and Licenses	67865	14.67	2.43
Banks/financial Institutions	11549	2.50	0.41
Insurance premium	481	0.10	0.02
Amusement	332	0.07	0.01
Value-added tax	47539	10.28	1.70
Franchise tax	2261	0.49	0.08
Other percentage taxes	4037	0.87	0.14
O.W. Stock transaction tax	1666	0.36	0.06
Other Domestic Taxes	22641	4.90	0.81
Documentary stamp tax	18915	4.09	0.68
Tax on property	469	0.10	0.02
Travel tax	180	0.04	0.01
Miscellaneous	3077	0.67	0.11
Import taxes	76005	16.43	2.72
Import duties	48792	10.55	1.75
Vat on Imports	27213	5.88	0.97
Other Taxes	3405	0.74	0.12
Total tax revenue	416585	90.07	14.91
Nontax revenue	45931	9.93	1.64
Total Revenues	462516	100.00	16.55

The excise taxes in the Philippines are levied on few sumptuary items such as tobacco and liquor, automobiles, and petroleum products. The contribution of these taxes to the total government revenue is 13.57 percent.

The property and capital gains taxes can be progressive but their combined share is less than 1 percent. The local governments collect the major share of their revenue from the real property tax.

The administration of these taxes is rather weak and is mostly based on outdated property and land values.

In 1998, total government revenue as a percentage of GNP in the Philippines was 16.55, while government expenditure was 19.23 percent of the GNP. Thus the government ran a budget deficit equivalent to 2.68 percent of the GNP. This was not a large budget deficit given the fact 1998 was the year most affected by the economic crisis, which deteriorated tax collection.

Table 2 shows the distribution of government expenditure classified by function. Of the five major functions, namely, economic services, social services, defense, general public service, and debt servicing, social services ranks the first in terms of the share in the total expenditure. Its share in expenditure was 32.59 percent. Further breakdown of social services shows that education is the major item of expenditure, share of which in the total expenditure is 19.88 percent. The share of health expenditure is indeed very small, only 2.52 percent of the total expenditure. This is because health services are provided on the basis of user principle, so the poor may not be receiving adequate health services because they cannot afford to pay.

Table 2. **Government Expenditure by Sector, 1998**

Sector	Actual expenditure (in billion pesos)	Distribution of Expenditure	Expenditure as Percent of GNP
Economic Services	129394	24.08	4.63
Social Services	175152	32.59	6.27
Education	106850	19.88	3.82
Health	13542	2.52	0.48
Social security and labor welfare	22755	4.23	0.81
Land distribution	0	0.00	0.00
Housing and community development	2792	0.52	0.10
Other social services	745	0.14	0.03
Subsidy to local governments	28468	5.30	1.02
Defense	31512	5.86	1.13
General Public Service	101254	18.84	3.62
Net Lending	329	0.06	0.01
Debt Servicing	99792	18.57	3.57
Total Government Expenditure	537433	100	19.23

Economic services comprise the second biggest item of the government expenditure. Almost one fourth of the budget is devoted to this item, which includes spending on agricultural development and infrastructure. Surprisingly, the defense expenditure is quite small, only 5.86 percent of the total budget. The Thailand government spends about 15 percent of its total budget on defense.

The Government of the Philippines spends 18.57 of its budget on debt servicing, which is a very heavy burden for any government. The government has always been struggling to raise revenue, which means that the government does not have enough resources to tackle the severe poverty existing in the Philippines (Kakwani 2000).

VII: Basis for Measuring Poverty

In order to measure poverty, we need to measure individual welfare. The most commonly used indicator of welfare is income. The concept of income must include all the components that impact on people's welfare. The present study uses a fairly comprehensive income concept, which includes:

- (i) Salary and wage from employment
- (ii) Imputed rent of owner-occupied dwelling
- (iii) Value of home consumption goods
- (iv) Income from entrepreneurial activities including
 - (a) crop farming and gardening
 - (b) livestock and poultry raising
 - (c) fishing
 - (d) forestry and hunting
 - (e) wholesale and retail
 - (f) manufacturing
 - (g) community, social, recreational ,and personal services
 - (h) transport, storage, and communication services
- (v) Other sources of income
 - (a) transfers from abroad
 - (b) transfers from domestic sources (government, private)
 - (c) rental income

- (d) interest
- (e) pensions, workman's compensation, social security
- (f) dividend
- (g) other incomes

Since taxes people pay do not make a direct contribution to their welfare, we use the concept of disposable income, which is the total income minus direct taxes.

The economic welfare of households is determined not only by their income but also by their needs. Since households differ in size, age composition, and other characteristics, it is expected that they will have different needs. In a recent study, Kakwani (2000) developed poverty thresholds, which take into account different needs of people living in households. Since these poverty thresholds adequately take into account the different needs of households, it will be appropriate to measure the household welfare by the ratio of per capita disposable income of a household to the per capita poverty threshold of that household. This measure of welfare can be interpreted as the percentage of excess income a household has over its basic needs.

Once the welfare index of a household is constructed, the next step is to determine the welfare of the individuals in the household. In the study, the individual welfare was derived by assigning every individual in a household a value equal to per capita welfare level of that household (see Kakwani 1986 for its justification). Thus, the government fiscal policies in the study are assessed with respect to the distribution of per capita welfare, which, in fact, is the needs-adjusted per capita individual disposable income derived from the households. Each income component and income tax paid by individuals was divided by the household-specific poverty line so that the total per capita welfare can be expressed as the sum of individual income components minus income tax. The poverty elasticity of each income component and income tax was then calculated using the formula given in (8) for the alternative values α . Given the values of elasticity and income shares from the survey data, the welfare reform index was computed using the formula given in (11).

VIII. Analysis of Empirical Results

The empirical analysis is presented based on two poverty measures, namely, poverty gap and severity of poverty ratios. Tables 3 and 4 present the poverty elasticity and poverty reform index for each income component for the two poverty measures. The growth elasticity for the poverty gap ratio is computed to be equal to -1.83 , which implies that 1 percent increase in the average per capita welfare will reduce aggregate poverty in the Philippines by 1.83 percent. The increase in per capita welfare in urban areas will reduce the aggregate poverty by 0.51 percent, whereas the same percent increase in incomes in rural areas will increase aggregate poverty by 1.32 percent. The values of reform index for rural and urban areas are 2.06 and 0.43, respectively. This implies that the same amount of government expenditure in rural areas will have considerably more impact

Table 3. Poverty Elasticity and Poverty Reform Index: Poverty Gap Ratio

Income Source	Poverty Elasticity			Poverty Reform Index		
	Urban	Rural	Both areas	Urban	Rural	Both areas
Family subsistence	-0.02	-0.10	-0.11	3.14	4.62	4.34
Crop by other households	-0.00	-0.01	-0.02	0.45	1.68	1.14
Crop farming	-0.02	-0.20	-0.22	2.52	3.47	3.33
Poultry	-0.00	-0.01	-0.01	1.60	2.68	2.41
Fishing	-0.01	-0.03	-0.03	3.52	3.79	3.73
Hunting	-0.00	-0.00	-0.00	1.49	5.44	4.61
Wholesale and retail trade	-0.01	-0.02	-0.03	0.41	1.12	0.64
Manufacturing	-0.00	-0.00	-0.00	0.79	1.38	1.06
Services	-0.00	-0.00	-0.00	0.41	1.36	0.59
Construction	-0.00	-0.00	-0.00	0.70	0.08	0.61
Transport	-0.00	-0.00	-0.01	0.52	1.09	0.76
Mining	-0.00	-0.00	-0.00	0.01	5.18	0.32
Entrepreneurial activity	-0.00	-0.00	-0.00	0.49	2.58	0.93
Wages and salary	-0.26	-0.44	-0.70	0.43	1.64	0.81
Overseas transfers	-0.01	-0.02	-0.02	0.08	0.35	0.16
Domestic transfers	-0.02	-0.06	-0.09	0.82	3.00	1.74
Rent from property	-0.00	-0.00	-0.00	0.08	0.88	0.13
Interest	-0.00	-0.00	-0.00	0.03	0.35	0.08
Pensions & social security	-0.01	-0.01	-0.01	0.16	0.60	0.28
Dividends	-0.00	-0.00	-0.00	0.01	1.34	0.07
Other sources	-0.00	-0.01	-0.01	0.34	2.43	0.92
Imputed rent	-0.14	-0.41	-0.55	0.42	2.35	1.07
Income tax	0.00	0.00	0.00	0.10	0.65	0.24
All components	-0.51	-1.32	-1.83	0.43	2.06	1.00

on more impact on poverty reduction than in urban areas. Thus, the government policies can become highly pro-poor by transferring government resources from urban to rural areas. The relative degree of pro-pooriness between rural and urban areas increases when the incidence of poverty is measured by the severity of poverty ratio (see Table 4). As pointed out, the severity of poverty ratio gives greater weight to the ultrapoor. If our most concern is with the ultrapoor, as should be, then the policies that promote growth in rural areas will be most appropriate.

Table 4. **Poverty Elasticity and Poverty Reform Index: Severity of Poverty Ratio**

Income sources	Poverty Elasticity			Poverty Reform Index		
	Urban	Rural	Both areas	Urban	Rural	All
Family subsistence	-0.02	-0.14	-0.16	3.50	5.59	5.19
Crop by other households	-0.00	-0.02	-0.02	0.47	1.67	1.15
Crop farming	-0.03	-0.26	-0.29	2.96	3.87	3.74
Poultry	-0.00	-0.02	-0.02	1.65	3.09	2.72
Fishing	-0.01	-0.03	-0.04	3.68	3.78	3.75
Hunting	-0.00	-0.00	-0.00	2.75	5.38	4.82
Wholesale and retail trade	-0.01	-0.02	-0.03	0.34	1.13	0.59
Manufacturing	-0.00	-0.00	-0.00	0.86	1.57	1.18
Services	-0.00	-0.00	-0.00	0.35	1.37	0.55
Construction	-0.00	-0.00	-0.00	0.47	0.12	0.42
Transport	-0.00	-0.01	-0.01	0.41	1.02	0.67
Mining	-0.00	-0.00	-0.00	0.03	4.56	0.30
Entrepreneurial activity	-0.00	-0.00	-0.00	0.45	2.57	0.89
Wages and salary	-0.23	-0.50	-0.73	0.33	1.59	0.72
Overseas transfers	-0.01	-0.01	-0.02	0.05	0.28	0.12
Domestic transfers	-0.03	-0.08	-0.11	0.82	3.43	1.92
Rent from property	-0.00	-0.00	-0.00	0.07	0.79	0.12
Interest	-0.00	-0.00	-0.00	0.02	0.30	0.06
Pensions & social security	-0.00	-0.01	-0.01	0.09	0.42	0.19
Dividends	-0.00	-0.00	-0.00	0.01	1.20	0.06
Other sources	-0.00	-0.01	-0.01	0.34	3.01	1.07
Imputed rent	-0.16	-0.53	-0.69	0.38	2.59	1.13
Income tax	0.01	0.00	0.01	0.30	0.87	0.44
All components	-0.51	-1.64	-2.15	0.37	2.18	1.00

Who should be targeted for poverty alleviation programs? The results in Tables 3 and 4 show that a value of poverty reform index of 5.19 is highest for the households, who are mainly engaged in family subsistence activities such as fishing, farming, and raising livestock. Any subsidy given to these households will have a considerably greater impact on poverty reduction than any other type

of household. Similarly, government subsidies given to households whose main income source is from hunting, fishing, and crop farming will benefit the poor more than the nonpoor.

It is generally believed that the major source of income of the poor is wage and salary and therefore any policy that increases wage and salary income will be pro-poor. This proposition is not supported by the empirical results. The poverty reform index for the wage and salary income is 0.72, which is less than 1, which means that any increase in wage and salary incomes will not be pro-poor as it will benefit the rich more than the poor. But, if we look at the rural–urban disaggregation, we find that the wage and salary income is pro-poor in rural areas but in urban areas, the poverty reform index is 0.33 and 1.59 in urban and rural areas, respectively. In the rural areas, the wage and salary earners are generally landless laborers, who are generally very poor.

The income components that do not favor the poor are rent from property, interest, pensions, social security, and dividends.

It is interesting to point out that pensions and social security payments, which are mostly provided by the government, go more to the nonpoor than to the poor. The welfare reform index for this component is 0.19, indicating that pensions and social security payments are highly regressive.

In the Philippines, overseas transfers contribute 7.6 percent to the total disposable income. A general perception is that these transfers help the poor families. This is not supported by the empirical results. The value of poverty reform index for these transfers is 0.12, which shows that the overseas transfers are highly regressive supporting the rich families more than the poor, or in other words, they tend to increase inequality. It is interesting to note that domestic transfers have the opposite effect. The value of poverty reform index is 1.92, which means they are pro-poor and reduce poverty.

Since the personal income tax makes a negative contribution to people's income, it will be pro-poor if its value is less than 1. The poverty reform index for personal income tax is 0.44, which implies that personal income tax in the Philippines is pro-poor. It hurts the rich more than the poor. The magnitude of the index shows that the degree of pro-poorness is rather small. The government collects only about 13 percent of its revenue from personal income tax. Thus, there is a scope to increase the revenue from income tax by increasing the tax rates on higher incomes, which will also increase the pro-poorness of income tax.

The Philippine government collects 16.25 percent of its revenue from corporate income tax. Due to international capital mobility, one can assume that the burden of corporate income tax falls on labor so that it is proportional to wage and salary income. The value of poverty reform index for a tax on wage and salary income is 0.72, which shows that the corporate income tax is pro-poor.

Tables 5 and 6 give the values of poverty elasticity and poverty reform index with respect to prices. Since increases in prices reduce people's real income, all values of poverty elasticity are positive because they increase poverty. The pro-poorness of an expenditure is judged on the basis value of poverty reform index. If the reform index is greater (less) than 1, it implies that an increase in prices hurts the poor more (less) than the rich. It can be noted that any tax on cereals, vegetables, and roots and tubers will hurt the poor more than the rich. It also implies that subsidizing these items will benefit the poor much more than the rich. The value of poverty reform index for all food items consumed at home is 2.0, which means that any indirect tax on food is highly antipoor and will hurt the poor. However, a tax on the food taken outside the home is not antipoor as is shown by the value of poverty reform index equal to 0.65.

It is generally believed that the indirect tax system can be made pro-poor by exempting food items. This belief is not supported by the empirical results in view of the fact that the tax on nonfood items is also not pro-poor.

The values of poverty reform index for alcohol and tobacco are 1.85 and 2.16, respectively, implying that the burden of taxation on these items is born heavily by the poor. The Philippines government collects 6.32 percent of its total revenue by excise on tobacco and alcohol products.

Table 5. **Poverty Elasticity with Respect to Prices and Poverty Reform Index:
Poverty Gap Ratio**

Commodity	Price Elasticity			Poverty Reform Index		
	Urban	Rural	Both Areas	Urban	Rural	Total
Cereal	0.14	0.45	0.59	1.42	3.99	2.77
Fruit and vegetables	0.06	0.15	0.21	1.77	6.73	3.76
Meat	0.04	0.07	0.11	0.58	2.15	1.09
Fish	0.03	0.07	0.10	0.45	1.52	0.94
Dairy products	0.02	0.03	0.05	0.61	2.20	1.14
Drinks	0.01	0.01	0.02	0.56	1.95	1.02
Coffee and tea	0.01	0.03	0.04	0.97	3.04	1.88
Roots and tubers	0.01	0.03	0.04	1.03	4.04	2.55
Other food	0.03	0.07	0.10	0.93	3.09	1.82
Food consumed at home	0.34	0.91	1.26	0.97	3.32	2.00
Food consumed outside the home	0.02	0.03	0.05	0.39	1.47	0.65
Alcohol	0.01	0.02	0.03	0.85	3.11	1.85
Clothing	0.01	0.04	0.05	0.55	2.39	1.33
Durable furnishings	0.00	0.00	0.00	0.19	0.79	0.36
Nondurable furnishings	0.00	0.00	0.00	0.46	1.72	0.99
Household operations	0.01	0.03	0.05	0.55	2.88	1.34
Personal care	0.01	0.03	0.04	0.67	2.51	1.32
Household maintenance and repairs	0.00	0.01	0.01	0.29	1.37	0.74
Education	0.02	0.04	0.06	0.34	1.79	0.79
Recreation	0.00	0.00	0.00	0.22	1.08	0.48
Medical care	0.01	0.03	0.05	0.46	1.78	0.98
Gifts and contributions	0.00	0.01	0.01	0.17	1.51	0.60
Tobacco	0.01	0.04	0.05	1.10	3.23	2.16
Transport	0.02	0.04	0.06	0.37	2.02	0.82
Utility	0.04	0.08	0.12	0.67	2.87	1.40
Special family occasions	0.01	0.02	0.03	0.39	1.63	0.95
Other expenditure	0.01	0.00	0.01	0.20	0.33	0.24
Imputed rent	0.06	0.10	0.15	0.36	1.93	0.73
Total expenditure	0.59	1.44	2.03	0.64	2.72	1.40
SAVING	-0.07	-0.12	-0.20	-0.27	-1.13	-0.51
Total income	0.51	1.32	1.83	0.43	2.06	1.00

Table 6. **Poverty Elasticity with Respect to Prices and Poverty Reform Index:
Severity of Poverty Ratio**

Commodity	Price Elasticity			Pro-poor Index		
	Urban	Rural	Total	Urban	Rural	Total
Cereal	0.17	0.64	0.81	1.44	4.88	3.25
Fruit and vegetables	0.07	0.20	0.27	1.70	7.63	4.08
Meat	0.04	0.09	0.13	0.51	2.34	1.11
Fish	0.03	0.10	0.13	0.43	1.78	1.05
Dairy products	0.02	0.04	0.06	0.55	2.33	1.15
Drinks	0.01	0.02	0.03	0.50	2.11	1.03
Coffee and tea	0.01	0.04	0.05	0.93	3.44	2.04
Roots and tubers	0.01	0.04	0.05	1.06	5.07	3.09
Other food	0.03	0.10	0.13	0.86	3.54	1.96
Food consumed at home	0.39	1.27	1.66	0.94	3.91	2.24
Food consumed outside the home	0.02	0.03	0.05	0.30	1.37	0.56
Alcohol	0.01	0.03	0.04	0.77	3.59	2.02
Clothing	0.01	0.05	0.06	0.53	2.59	1.41
Durable furnishings	0.00	0.00	0.00	0.18	0.73	0.34
Nondurable furnishings	0.00	0.00	0.00	0.36	1.78	0.96
Household operations	0.01	0.05	0.06	0.53	3.41	1.50
Personal care	0.02	0.04	0.06	0.61	2.82	1.39
Household maintenance and repairs	0.00	0.01	0.02	0.26	1.38	0.72
Education	0.02	0.05	0.07	0.34	1.95	0.84
Recreation	0.00	0.00	0.00	0.20	1.10	0.47
Medical care	0.01	0.04	0.06	0.43	1.92	1.02
Gifts and contributions	0.00	0.01	0.01	0.17	1.44	0.58
Tobacco	0.01	0.05	0.07	1.00	3.62	2.30
Transport	0.02	0.05	0.07	0.36	2.18	0.86
Utility	0.04	0.11	0.16	0.62	3.32	1.52
Special family occasions	0.01	0.03	0.04	0.40	1.76	1.02
Other expenditure	0.01	0.01	0.01	0.24	0.53	0.32
Imputed rent	0.06	0.13	0.19	0.33	2.13	0.76
Total expenditure	0.66	1.95	2.61	0.61	3.13	1.53
SAVING	-0.15	-0.31	-0.46	-0.45	-2.40	-1.01
Total income	0.51	1.64	2.15	0.37	2.18	1.00

The values of poverty reform index for education and health care are 0.79 and 0.98 respectively, implying that any subsidy that goes to these items will benefit the rich more than the poor. Thus, there is a clear need to target the government expenditure on health and education to the poor.

IX. Conclusion

This paper makes two major contributions. First, it develops a general methodology to assess government fiscal policies from the point of view of poverty reduction. Second, it provides an analysis of the Philippine fiscal system toward making some marginal reforms. The study shows that there is a considerable scope to make Philippine fiscal policies more equitable. The present system is found to be not pro-poor and benefits the rich proportionately more than the poor.

References

- Atkinson, A.B (1997), "On the measurement of inequality" *Journal of Economic Theory*, Vol 2 , pp 244-63.
Kakwani, N (2000), 'Poverty, inequality and wellbeing in the Philippines' Mimeo unpublished paper.
Kakwani, N (1993), 'Poverty and Economic Growth with Application to Cote d'Ivoire' *Review of Income and Wealth*, 39,2 (June):121-39.
Kakwani, N (1986) *Analyzing redistribution policies: a study using Australian data*, New York : Cambridge University Press
Kakwani, N (2000), 'Economic Growth, Poverty and Income Support Programs in Australia' *Journal of Asia Pacific Economy*, 5, Number 1 & 2, pp 14-37.