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Philippines: Designing a Local Government Enhancement Fund

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No. 7 | October 2011

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CURRENCY EQUIVALENTS

(as of 26 September 2011)

Currency Unit	–	peso (P)
$1.00	=	P43.7100
P1.00	=	$0.0228

ABBREVIATIONS

FEEP	–	Fiscal Equity and Expenditure Performance Fund
IRA	–	internal revenue allotment
LGU	–	local government unit
VAT	–	value-added tax

NOTE

In this paper, “$” refers to US dollars.

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EXECUTIVE SUMMARY

The main transfer instrument from the central government to local government units (LGUs) in the Philippines, the internal revenue allotment (IRA), has been criticized for (i) its inability to equalize sufficiently, especially regarding the poorer municipalities and provinces; and (ii) its funds failing to be spent in an efficient manner. Recently, LGU associations have petitioned the Government of the Philippines for an expansion of the funding of the IRA from 40% of internal revenue collection to 50%, and several draft bills toward this goal have been prepared.

Most agree that if the additional 10% of funding were to occur, these funds should not be distributed following the same methodology used for the IRA. The distribution of the additional funds needs to have a much stronger equalization effect among LGUs, and the recipient LGUs should be held accountable to use the funds to improve the performance of public services.

The new transfer so far has been called the Local Government Enhancement Fund, but this paper proposes a more descriptive name, the Fiscal Equity and Expenditure Performance Fund (FEEP).

The design of the new transfer with 10% additional funding, separate from the IRA, will face four major challenges: (i) defining the origin and computation of the 10% additional funding, (ii) apportioning the additional funding among the different groups of LGUs (i.e., provinces, cities, municipalities, and *barangays* [neighborhoods]), (iii) defining a formula to use for the distribution of the additional funds for qualifying LGUs in each particular group of LGUs, and (iv) ensuring that the additional funds will be used by LGUs to improve their service delivery performance.

For the first challenge, two main options are explored in this paper: (i) using the same base as the IRA, which is internal revenue collection; or (ii) using the broader base of total national revenues, which expands the IRA base to include all collections by the Bureau of Customs and Bureau of Internal Revenue. The potentially important difference between these two approaches is how the two bases will perform in the future, in particular from the viewpoint of their volatility. Although there is some evidence that the broader base (i.e., total revenues) exhibits more volatility over time, the differences are not significant. Therefore, there is not a clear preference for either of the two bases for the FEEP.

Several other less orthodox options for obtaining the additional funding are also explored. First, funding of the IRA could be frozen as of 2011, holding all LGUs in future years to the same funding in absolute numbers that they had in 2011, and utilizing the increases in nominal pesos from the 40% formula for the IRA to finance and expand the FEEP. This means that the importance of the FEEP vis-à-vis the IRA would increase over the years, and it is an indirect way to reform the IRA. Second, some of the resources currently distributed through the government conditional transfers to the FEEP could be shifted, in particular special funds to the budgets of sector agencies (e.g., agriculture) that may not be used or that are inefficiently utilized. Third, the introduction of negative transfers from wealthier LGUs to the FEEP could be considered.

For the second challenge, apportioning the additional funding among the different groups of LGUs, an option is to modify the current apportionment percentages used in the IRA by excluding *barangays* from the vertical distribution and distributing their share proportionally to the other LGU groups. Currently, the IRA is subject to a vertical distribution formula that

provides 23% of the funds to provinces, 23% to cities, 34% to municipalities, and 20% to *barangays*. This proposal, however, produces shares of 28.75% each for provinces and cities, and 42.50% for municipalities. A second option focuses on the vertical distribution among provinces, cities, and municipalities being proportional to their respective aggregate positive fiscal gaps. The apportionment percentages under this approach becomes about 15% for provinces, 18% for cities, and 67% for municipalities. The advantage of both approaches is that they offer a rationale for the vertical distribution as opposed to a new rule that is arbitrarily derived.

Fundamentally, this second approach is the only sound approach to the derivation of the vertical distribution rule. However, in the future, true expenditure needs of the different LGU groups have to be derived; this paper uses a historical approximation of expenditure needs, and there is no reason to expect the two measures of expenditure needs to coincide. Different methodologies were used to compute the expenditure needs of LGUs.

The section focusing on the third challenge, defining a formula to use for the distribution of the additional funds for qualifying LGUs in each group of LGUs, develops several approaches for distribution of the new available funds. Under the new distribution rules, not all LGUs would get funds. Second, the distribution of funds is based on the quantification of the fiscal gap concept, which is the difference between expenditure needs of an LGU and its fiscal capacity to raise revenues.

Before discussing and computing the concepts of fiscal gap, expenditure needs, and fiscal capacity, the paper presents a formula to distribute the funds in each LGU group that is similar but significantly improves upon the current formula used for the IRA (i.e., a weighted index of population, land area, and equal shares). The improved, weighted index introduces additional factors to population and land area (e.g., youth and elderly populations and the incidence of poverty) to proxy the differences in expenditure needs. It also introduces an additional factor in the weighted index to account for the differences in fiscal capacity across LGUs. Note that the new improved index eliminates the equal share factor currently used in the IRA. However, under this expanded weighted index approach, all LGUs still receive some FEEP funds. That is not the case with the fiscal gap approach that follows.

The core approach to the distribution of funds within each group of LGUs consists of the estimation of a fiscal gap, defined as the difference between expenditure needs and fiscal capacity, for each LGU. The paper reviews the different methodologies available for the estimation of expenditure needs and fiscal capacity, and it implements, with 2008 data, two measures for the estimation of expenditure needs and two measures for the estimation of fiscal capacity.

The simulations of the FEEP transfers are carried out with the different methodologies assuming two different vertical allocation rules across LGU groups. The first is a modified IRA allocation rule, excluding *barangays*, and the results are reproduced in the first table below. The second is in proportion to the aggregate positive fiscal gaps in each group of LGUs, and the results are reproduced in the second table below. Note that using the fiscal gap approach allows restriction of FEEP transfers only to those LGUs that have a positive fiscal gap (i.e., where expenditure needs exceed fiscal capacity).

Per Capita Fiscal Equity and Expenditure Performance Fund Transfers under Proportional Allocation and Adjusted Internal Revenue Allotment Vertical Distribution Rule, 2008

(P)

	Provinces	Cities	Municipalities
Minimum	0	0	0
Maximum	2,031.23	4,445.48	9,068.76
Average	126.42	576.52	315.71
Standard deviation	326.42	1,016.61	669.30
Coefficient of variation	2.58	1.76	2.12
Total FEEP transfers (P million)	15,376.74	15,376.74	22,730.83

FEEP = Fiscal Equity and Expenditure Performance Fund.

Per Capita Fiscal Equity and Expenditure Performance Fund Transfers under Proportional Allocation and Share of Aggregate Fiscal Gap Vertical Distribution Rule, 2008

(P)

	Provinces	Cities	Municipalities
Minimum	0	0	0
Maximum	127.17	3,213.12	16,520.08
Average	7.92	416.70	575.12
Standard deviation	20.44	734.79	1,219.23
Coefficient of variation	2.58	1.76	2.12
Total FEEP transfers (P million)	9,627.18	11,114.03	41,407.54

FEEP = Fiscal Equity and Expenditure Performance Fund.

The last section of the paper addresses the fourth challenge, ensuring that the additional FEEP funds will be used by LGUs to improve their service delivery performance. As opposed to using ex-ante conditionality for receiving these additional funds, the paper proposes to use ex-post performance indicators, which preserves a higher degree of autonomy of LGUs. The carefully selected performance indicators need to be measured independently from the LGUs themselves and should be meaningful regarding the quality of life of LGU residents. The indicators should preferably be service outputs, as opposed to outcomes, given that the local jurisdictions tend to have much less control for service outcomes. Because of very different starting points in most indicators for various LGUs, performance needs to be read as differentiated changes in the selected indicators.

Failure to deliver improved performance in the set period would be followed by suspension of one-half of the available funding. After another round or period of performance, the funding could be completely suspended with continued failure to improve, or fully restored with increased performance. Although the paper explores past experience in the Philippines with performance indicators and the several possibilities available, the actual selection of the performance indicators requires further study.

I. INTRODUCTION

The main transfer instrument from the central government to local government units[1] (LGUs) in the Philippines is the internal revenue allotment (IRA), introduced in 2001. The IRA has been criticized for two main failings.[2] The first is its inability to equalize sufficiently, especially regarding poorer municipalities and provinces. The second is the feeling that the IRA funds, to a large extent unconditional in their use by LGUs, have not been spent in an efficient manner to improve the daily life of citizens.

Recently, LGU associations have petitioned the Government of the Philippines for an expansion of the funding of the IRA from 40% of internal revenue collections to 50%. Although there is not full agreement on this expansion, the possibility of more funding is being seriously considered by the executive and legislative branches. Within the government, most agree that if the additional 10% in funding were to occur, these funds should not be distributed following the same methodology used for the IRA.[3]

Two general requirements for implementing the additional 10% funding are often mentioned.[4] The first is that the additional funds must have a much stronger equalization effect among LGUs.[5] The second is that accountability should increase for how the recipient LGUs use the funds to improve the performance of public services. These two general objectives are also desired goals for IRA reform.

The design of the new transfer, named by this paper as the Fiscal Equity and Expenditure Performance Fund (FEEP),[6] comprises the 10% additional funding and is separate from the IRA. Although reform of the IRA is not politically viable at this time, the FEEP can become a model for its eventual reform if the IRA overall allocation is frozen in a hold-harmless position for all LGU recipients in a base year, for example 2011, and annual nominal increments in the IRA funding are moved to the FEEP.[7]

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1 These include provinces, cities, municipalities, and *barangays,* the equivalent of neighborhoods. The relationships between different LGUs, and especially those of cities and municipalities with the *barangays*, are examined in several essays in Preschle and Sosmeña (2007).

2 See Government of the Philippines, DILG (2009) for a recent assessment of the decentralization system in the Philippines.

3 See Pardo (2005), Brillantes (2005), and Guevara (2006, 2007) for discussions of the problems associated with the current design of the IRA and proposals for reform.

4 The draft bill on the LGU Enhancement Fund (not an official name) provides that the additional 10% should be allocated according to the two criteria of equity and performance. Some of the available drafts of the bill include a concrete split of the 10% funds into 5% for equity adjustments and 5% for performance.

5 Several proposals have been made for reforming the IRA; the most recent is by JICA (2008). Also, see Manasan and Chaterjee (2003) and World Bank (2010) for the existing and growing inequality and lack of economic convergence across geographical regions in the Philippines. A more recent assessment of the impact of decentralization in the Philippines can be found in Brillantes et al. (2010).

6 The proposals for this initiative have used the term Local Government Enhancement Fund. This report proposes the new, more descriptive name of FEEP.

7 One issue to take into account may be the proliferation of special funds in the intergovernment finance system of the Philippines. However, the FEEP will have very different features and objectives than other existing funds. The Special Education Fund was introduced in the Local Government Code of 2001 and earmarks the proceeds from an additional 1% tax on real property to support school boards. See Manasan and Castel (2010) for a discussion of issues related to this fund. The Performance Challenge Fund that is being created for LGUs will have considerably smaller funding than the FEEP (i.e., P500 million). It will be dedicated to matching high-impact capital infrastructure projects, and it will follow a completely different approach to LGU performance. The Performance Challenge Fund will confer a “seal of good housekeeping” to prequalifying LGUs focusing on the areas of administrative good governance.

This paper explores the four major challenges facing the design of the FEEP:

(i) **Defining the origin and computation of the 10% additional funding.** The base of the funding could be internal revenue collections, as in the case of the IRA, or something different. LGU associations have requested use of total government revenues for the IRA. Thus, the advantages and disadvantages of the different choices, and other alternatives, are explored.

(ii) **Apportioning the additional funding among the different groups of local government units (i.e., provinces, cities, municipalities, and *barangays*).** One possibility is to use the current apportionment percentages in the IRA. However, there is widespread perception that the initial arbitrariness of the IRA apportionment percentages is part of the problem, causing the significant and increasing fiscal disparities among groups of LGUs. Other options are thus explored.

(iii) **Distributing the additional funds for qualifying local government units in each group.** Most agree on the need to improve the current formula used for the IRA distributions based on a weighted index of population, land area, and equal shares. Further, more accurate measurement of the expenditure needs of LGUs is required than that provided by the population, area, and equal shares in the IRA formula. Some measure of fiscal revenue capacity is also needed. This paper explores new formulas and methodologies given current data availability.

(iv) **Ensuring that the additional funds are used by local government units to improve their service delivery performance.** As opposed to using ex-ante conditionality for the additional funds (e.g., where the money can be spent or what kind of inputs to use), the goal is to preserve a high degree of autonomy of LGUs but demand from them ex-post proof of improved performance in a number of carefully selected indicators. These indicators need to be measured independently from the LGUs themselves and must be meaningful regarding the quality of life of residents. Because of very different starting points in most indicators for various LGUs, the improvements need to be read as differentiated changes in those indicators. Failure to deliver improved performance in the set period could be followed by suspension of one-half of the available funding. After another round or period of performance, the funding could be completely suspended with continued failure to improve, or fully restored with increased performance.

II. DEFINING THE ORIGIN AND COMPUTATION OF THE 10% ADDITIONAL FUNDING

Even though it is uncertain that the additional funding approved for the FEEP will be an extra 10%,[8] it is necessary to make this assumption to go forward with this paper.

The next question concerns the source of the 10% additional funding. From a political and economic perspective, it is important to disassociate the FEEP and its funding from the IRA to mute legalist interpretations that since the increment in funding is based on the IRA, so should the distribution formula. That is, it is imperative to make clear that the FEEP is not part of the IRA, since it pursues very different objectives with different means.

There are several alternatives that can be explored to determine the funding rule for the FEEP:

(i) **Using the same base as for the internal revenue allotment.** A simple answer is to use the current arrangement under the IRA, increasing the allotment from the current 40% of the IRA to 50%. This funding is based on collections from the National Internal Revenue Code, comprising internal revenue taxes or taxes collected by the Bureau of Internal Revenue, such as all income taxes, transfer taxes, excise taxes on domestic trade, value-added taxes (VATs) on domestic trade, other business taxes, documentary stamp taxes, and other miscellaneous taxes. This approach can use the machinations already in place for the distribution of the IRA. It also preserves certain revenue sources, such as customs revenues and fuel taxes, for the central government. However, this approach also links the FEEP too directly and explicitly with the existing IRA, creating future problems when the formula for the distribution of funds will differ between the two. In addition, it may not be the most responsive to the requests for additional funding from the LGU associations, which have also been requesting broadening the IRA base to all national tax revenues, including customs revenues and fuel taxes.

(ii) **Using an expanded base from central government total revenues.** This alternative uses a broader base, specifically all central government revenues, including customs taxes and fuel taxes, to compute the 10% additional funding for the FEEP. In absolute terms for the base year, this means the same revenues as in (i). Thus, rather than adding 10 percentage points to the IRA computation, the same amount of funds is derived by multiplying national tax revenues by x%. However, over time, the absolute amount in pesos could become different if that initial x% is kept and the national tax revenues and internal revenues evolve differently. This approach has the advantage of partially fulfilling one standing request of the LGU associations to use total central government revenues for the IRA, but it entails a potentially larger commitment of funds by the central government over time.

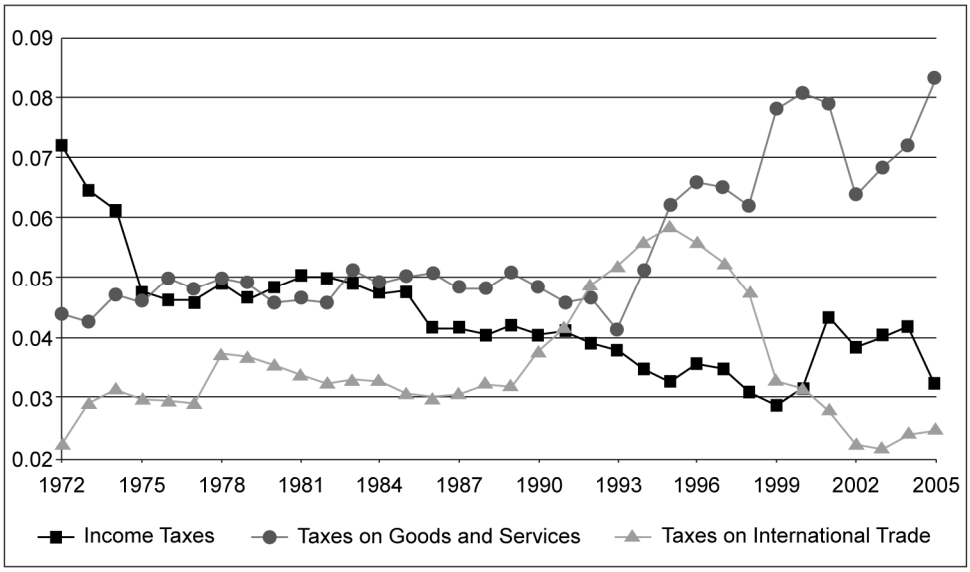
(iii) **Other less conventional approaches.** One possibility is to freeze the funding of the IRA as of 2011, for example, holding all LGUs in future years to the same funding in absolute numbers that they had in 2011. Then, the increases in nominal pesos from the 40% formula for the IRA could be used to finance and expand the FEEP. This would mean that the importance of the FEEP regarding the IRA would increase over the years, and the FEEP would become a good

[8] In the authors' preliminary meetings, other figures were mentioned, including, for example, additional funding of only 5%.

model for IRA reform. A second approach is to shift some of the resources currently distributed through government conditional transfers to the FEEP. In particular, there appears to be special funds in the budgets of sector agencies (e.g., agriculture) that are either unused or inefficiently utilized. A third possibility is to consider the introduction of negative transfers from wealthier LGUs to the FEEP. Several countries finance their equalization grants fully or partially with such fraternal systems (also known as Robin Hood systems) of finance. Here, LGUs that have a negative fiscal gap, defined as the difference between expenditure needs and fiscal capacity, are required to contribute to a centrally managed equalization fund. This approach has the potential of significantly lowering the fiscal costs to the central government of introducing the FEEP. However, it implies that IRA reform may be politically unviable. The introduction of a fraternal system of finance, being new to the Philippines, may face strong opposition by LGUs.

The two more feasible strategies for funding the FEEP are (i) and (ii). Although (ii) includes a wider revenue base, since it includes customs revenues and fuel taxes, it is unclear that it would be superior to the internal revenue base in (i) from all perspectives, such as stability and predictability.

Figure 1: Evolution of Selected Tax Instruments as Share of Gross Domestic Product in Asia, 1975–2005

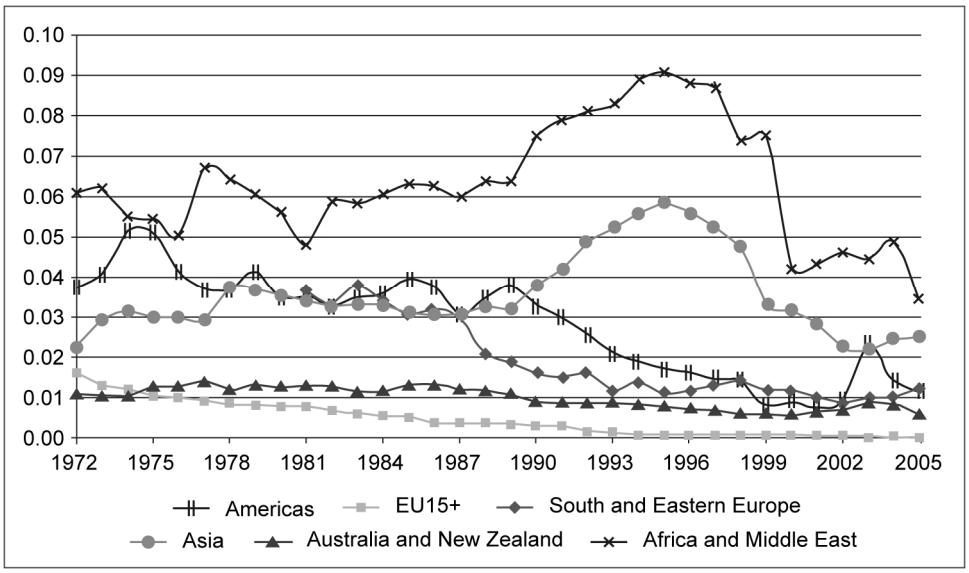


Sources: International Monetary Fund (http://www.imf.org/external/pubs/ft/gfs/manual/gfs.htm), World Bank (http://data.worldbank.org/data-catalog/world-development-indicators)

In terms of revenue trends, customs taxes represent a declining revenue source because future trade and tariff reforms are likely to lower the level and to narrow the dispersion of tariff rates. This trend is illustrated in Figure 1 for a group of Asian countries, where it can be seen that the share of customs taxes (the largest component by far of taxes on international

trade) has decreased vis-à-vis the shares of income taxes and taxes on goods and services.[9] The declining relative importance over time of taxes on international trade is not an exclusive phenomenon for Asia but can be observed in most regions of the world, as shown in Figure 2.

Figure 2: Taxes on International Trade as a Share of Gross Domestic Product by Region, 1972–2005



EU = European Union.
Note: EU15+ includes the 15 EU countries, Iceland, Norway, and Switzerland.
Sources: International Monetary Fund (http://www.imf.org/external/pubs/ft/gfs/manual/gfs.htm), World Bank (http://data.worldbank.org/data-catalog/world-development-indicators)

In offsetting the expected declining trend in customs taxes, increasing trends in other taxes collected at customs needs to be taken into account. The revenues collected by the Bureau of Customs include VATs and all excise duties falling on imported commodities, such as those on fuel products. Clearly, revenues from these sources can dwarf the revenues coming from import tariffs. In many developing countries, about one-half of VAT revenues are collected by customs offices. As for excise duties, that share can be even higher. As can be seen in Figure 1, the trend in Asian countries is for taxes on goods and services to continue to increase their share in total tax revenues at the expense of customs taxes and also income taxes.

The next question is, however, whether expanding the revenue base of the FEEP to national total revenues would expose recipient LGUs to greater volatility and unpredictability than if the internal revenue base was used. The issues of volatility and predictability, not only the total pool of resources, were considered in the design of the IRA since the funds actually distributed in any one year correspond to the internal revenue collections of previous years.

[9] The data are from the International Monetary Fund's Government Finance Statistics and originally reported in Martínez-Vázquez (2010). Note that the Philippines are not included in the group of Asian countries, as this data source does not carry information for the Philippines.

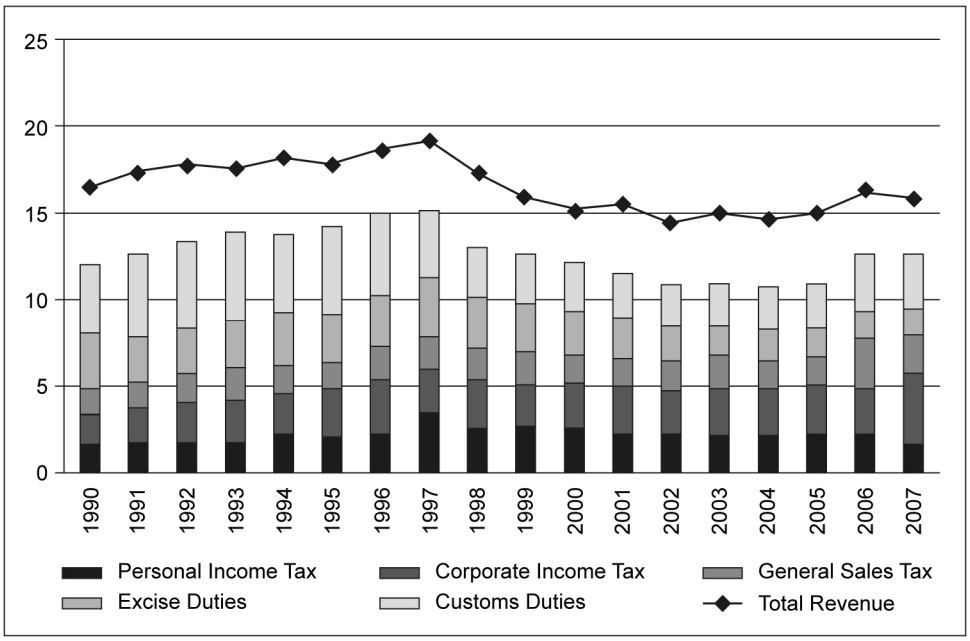
Table 1: Variation in Total Government Revenues and Selected Tax Revenues, 1990–2007

	Standard Deviation	Mean	Coefficient of Variation	Minimum	Maximum
Total revenue	1.5	16.5	0.09	14.4	19.1
Personal income tax	0.4	2.2	0.20	1.5	3.4
Corporate income tax	0.4	2.6	0.16	1.8	3.6
General sales tax	0.2	1.8	0.13	1.5	2.3
Excise duties	0.6	2.5	0.24	1.5	3.4
Customs duties	1.0	3.6	0.29	2.4	5.2

Source: Author's calculations based on International Monetary Fund (http://www.imf.org/external/pubs/ft/gfs/manual/gfs.htm)

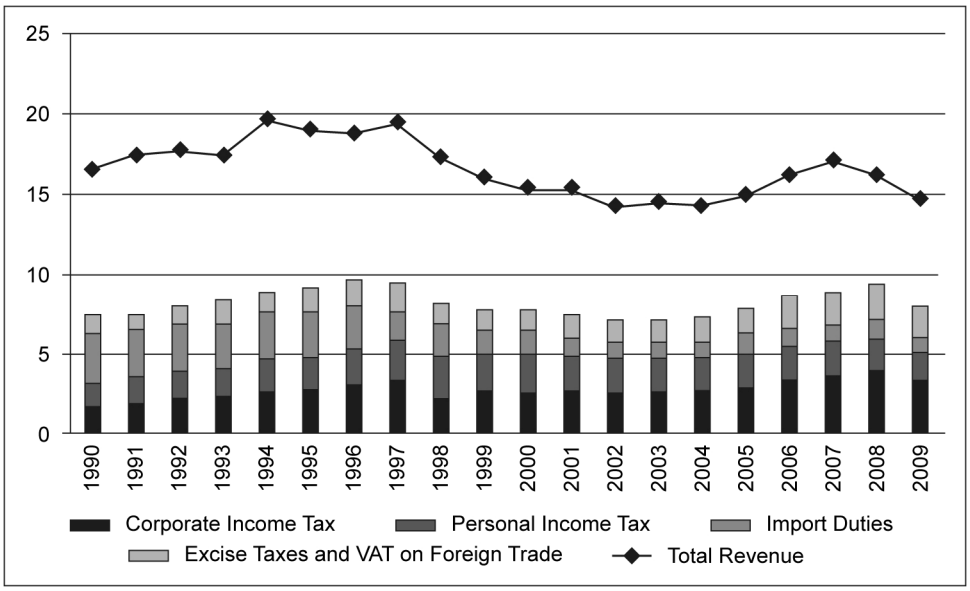
Some components of the revenues collected by the Bureau of Customs, such as excise taxes on fuel, can exhibit greater volatility than internal or domestically collected taxes. In Figures 3 and 4, the two measures of dispersion, the standard deviation and the coefficient of variation for annual revenue flows of individual revenue components, are the largest for customs duties. Although the standard deviation for total revenue is higher, once normalized by the mean value, the coefficient of variation for total revenue is smaller than that of customs duties. Since the revenues from customs duties are likely highly correlated with the general sales tax and excise duties collected by the Bureau of Customs, those revenues also exhibit more volatility than internal revenues, including revenues from the general sales tax and excise duties collected by the Bureau of Internal Revenue. For the fuel tax, a separate time series is unavailable. However, a large part of this tax is collected upon importation, and its revenues (and volatility) are incorporated in the excise duties collected at the Bureau of Customs.

Figure 3: Government Total Revenues and Selected Tax Revenue Collection
(% gross domestic product)



Source: International Monetary Fund (http://www.imf.org/external/pubs/ft/gfs/manual/gfs.htm)

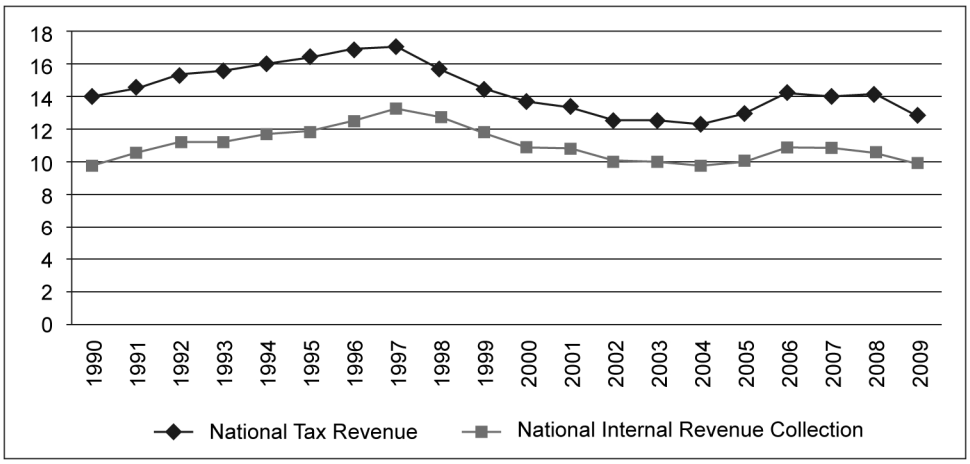
Figure 4: Government Total Revenues and Selected Tax Revenue Collection
(% gross domestic product)



VAT = Value-added tax.
Source: Government of the Philippines, Department of Finance.

Figure 5 shows the time evolution of two possible bases, internal revenues versus total revenues. Independent of the total amounts, the two series follow each other closely. The coefficient of variation for total revenues is 0.103, and for internal revenues, it is 0.092. Therefore, expanding the computation base for the FEEP to total revenues (from internal revenues used now for the IRA) only slightly increases the overall volatility of this transfer with some increased uncertainty and unpredictability for the recipient LGUs. This additional factor should be taken into account in deciding the computational base of the FEEP.

Figure 5: Tax Revenue and Internal Revenue Collection
(% gross domestic product)



Source: Government of the Philippines, Department of Finance.

III. APPORTIONING THE ADDITIONAL FUNDING AMONG THE DIFFERENT GROUPS OF LOCAL GOVERNMENT UNITS

Currently, the IRA is subject to a vertical distribution formula that provides 23% of its funds to provincial governments, 23% to cities, 34% to municipalities, and 20% to *barangays*. This vertical distribution formula appears to have been the product of political compromise at the time of its approval in Parliament as opposed to any calculated weighing of the expenditure needs and fiscal capacity of the different groups of LGUs.

The choice of vertical distribution shares for the IRA has had important consequences on the overall performance of that transfer. In particular, there is a widely shared perception that the share of funds assigned to municipalities has been insufficient and has caused many to operate under grave fiscal conditions. The perception is also that something similar can be said for the provinces, many of which seem to be operating with significant difficulties. On the contrary, cities—the larger, richer cities—have been enjoying funds beyond their needs, even though there are smaller, relatively poorer cities that are not so well off. For *barangays,* the general perception is that there are no alarming financing issues and that they are fine with the IRA.

The relative poor position of LGUs reflects the fact that the current IRA horizontal distribution formula may not capture their expenditure needs nor differences in tax or revenue capacity. However, the current percent shares do not reflect the overall aggregate differences in expenditure needs and fiscal capacity. Unfortunately, the statements above are conjectures based on field observations of different stakeholders of the decentralization system in the Philippines as opposed to the results of hard calculations.

Nevertheless, these observations are significant for the vertical allocation of the FEEP. However, without hard evidence on expenditure needs and fiscal capacity of the different LGUs, a sound basis does not exist to recommend any specific vertical allocation rule.

At this stage, there are two ways to proceed. One approach is to allocate the FEEP vertically only among those groups of LGUs that seem to be in more dire fiscal situations, that is, municipalities and provinces. Some rule would then need to be devised to divide the FEEP between those two groups, for example, two-thirds for municipalities and one-third for provinces. Again, there is no basis to propose a specific cut. The advantage of this approach is its simplicity and ease of application. However, it may be politically too divisive, as there are relatively poor, smaller cities that would be left out of the additional funds. Also, *barangays* may strongly object when their entire group is left out of any additional financing.

A second approach is to devise transparent methodologies for estimating the differences between expenditure needs and fiscal capacity (or fiscal gaps) of LGUs in each group. A couple of such approaches are proposed in the next section. Obtaining a fiscal gap for each LGU allows aggregation of all of the positive gaps (i.e., for those LGUs for which the estimates of expenditure need to exceed the estimate of fiscal capacity) in each group. Thus, in theory, those aggregate estimates could be used to redo the vertical distribution formula of the FEEP and possibly of the IRA, sometime in the future.

However, at this stage, the estimates of expenditure needs and fiscal capacity are conditional on the level of resources available to each group of LGUs as a whole. This means that the estimates of fiscal gaps are not independent of the existing vertical distribution formula

for the IRA. Nevertheless, this information could be helpful in deciding on the direction for the desirable reform of the vertical distribution formula of the IRA, and therefore for its application to the FEEP. In the future, using the methodologies introduced in this paper, it will be possible to develop estimates of fiscal gaps that are independent of the IRA distribution formula. That will require making normative decisions about standard expenditure needs, which are only at the prerogative of the government.

IV. ALTERNATIVE FORMULA FOR THE DISTRIBUTION OF THE ADDITIONAL FUNDS TO QUALIFYING LOCAL GOVERNMENT UNITS

The horizontal distribution formula for the IRA uses a weighted index approach with three variables: population, land area, and equal sharing. In the cases of provinces, cities, and municipalities, the weights are 50% for population, 25% for land area, and 25% for equal sharing. For the case of *barangays*, only two variables are used, population with a weight of 60% and equal sharing with a weight of 40%.

The overall intent of the IRA is to work as a general allocation transfer to address a large vertical fiscal imbalance for LGUs regarding their expenditure obligations and autonomous revenue sources.[10] In this sense, the IRA appears to have performed satisfactorily, even when there is not a good measure of expenditure needs by the different groups of LGUs and therefore a good measure of vertical fiscal imbalance.

Most agree that the IRA has been defective in addressing horizontal imbalances in expenditure needs and fiscal capacities, both across groups of LGUs and within each of these groups. Across groups of LGUs, the vertical share allocation, as noted in the previous section, does not take into account either aggregate expenditure needs nor aggregate fiscal capacity of each group. Within each group, the IRA horizontal allocation formula only partially takes into account the expenditure needs of each LGU within the group and completely ignores the fiscal capacity issue. In particular, population and land area variables are likely able to capture differences in expenditure needs but not all of the relevant differences. For example, different population groups, such as the very young, elderly, or poor, imply different needs than the regular adult population. There may also be differences in costs for the delivery of different services because of geography (e.g., mountains or isolated islands), population density, or proximity conditions.

In addition, the equal sharing is less likely to reflect expenditure need differences. The use of this variable in the formula may be justified because of the fixed costs of operating an LGU, given that smaller LGUs are unable to capture economies of scale in the operation of services. However, this type of variable tends to benefit smaller LGUs in an exaggerated way, especially when the weight attached to this variable is relatively large. At the same time, it tends to provide a perverse incentive against jurisdictional consolidation if not a further incentive toward further jurisdictional fragmentation.

Thus, the IRA has failed to equalize enough within and across each group of LGUs. Even in the group that appears to be best off—cities—some units are struggling to meet their demands for services (i.e., smaller and more geographically distant cities), while other LGUs (i.e., large cities) seem to be much better off and have substantial reserves that overwhelm any IRA allocations. Therefore, if the FEEP is to achieve greater equity, the current IRA horizontal distribution formula cannot be used for the allocation of its additional funds.

To advance in the direction of a more equitable distribution of funds, two main requirements must be met: (i) an improved measurement or approximation of the expenditure

[10] The vertical fiscal imbalance refers to the difference in fiscal gaps (i.e., expenditure needs minus fiscal capacity) between the central government and the aggregate of subnational governments. Usually the central government has a negative fiscal gap (i.e., potential revenue exceeds expenditure need). Subnational governments have a positive gap (i.e., expenditure needs exceeding their own revenue capacity). The vertical fiscal imbalance is thus closed by using transfers from the central to subnational governments.

needs of each LGU, and (ii) the incorporation of some measurement (or approximation) of the fiscal capacity of each LGU.

The theory and best international practices in the design of equalization grants should help define those two elements in the design of the horizontal distribution formula for the FEEP. Before discussing approaches to measuring expenditure needs and fiscal capacity to compute the fiscal gap for each LGU, a minimum first approach, which is basically a weighted index approach, must be explored.

A. Expanding the Weighted Index Formula in the Internal Revenue Allotment

Although this is the approach currently used for the IRA, the proposed approach includes an additional variable for better approximating expenditure needs as well as one as a proxy for fiscal capacity. However, this approach falls short of computing a fiscal gap for each LGU; therefore, it only distributes the pool of available funds by formula. This distribution of funds will be more equalizing, because it does take into account differences in fiscal capacity and provides better bases to approximate expenditure needs. Although only one index formula applicable to the three groups of LGUs (i.e., provinces, cities, and municipalities) is presented, a separate index could be used for each group, because the factors included in the index try to approximate the fundamentals behind expenditure needs for each group. Since the expenditure responsibilities, and therefore the expenditure needs of each group, can differ, the factors capturing those needs could also vary.

The extended index approach is as follows:[11]

$$AI_i = \lambda_1(Pop_i/\Sigma Pop_i) + \lambda_2(Area_i/\Sigma Area_i) + \lambda_3(YoungPop_i/\Sigma YoungPop_i) + \lambda_4(OldPop_i/\Sigma OldPop_i) + \lambda_5(PovPop_i/\Sigma PovPop_i) + \lambda_6(RFC_i)$$

Actual FEEP transfer to LGU i = $FEEP_i = AI_i$ x Total pool of funds available for the FEEP transfer in each group of LGUs[12]

where,

AI_i = allocation index (or participation share in the pool of funds, in percentage terms) for jurisdiction i in the total pool available for transfers for each group

$Pop_i/\Sigma Pop_i$ = share of population for jurisdiction i in the total population computed for each group

$Area_i/\Sigma Area_i$ = share of urban area for jurisdiction i in the total area for each group

$YoungPop_i/\Sigma YoungPop_i$ = share of population under age 5 years for jurisdiction i in the total population computed for each group

$OldPop_i/\Sigma OldPop_i$ = share of population over age 65 years for jurisdiction i in the total population computed for each group

$PovPop_i/\Sigma PovPop_i$ = share of population living in poverty for jurisdiction i in the total population computed for each group

RFC_i (Relative Fiscal Capacity$_i$) = [Max FC – FC_i]/Σ[Max FC – Average FC]

[11] It should be clear that the contribution here is the proposition of an expanded index formula that is more encompassing of expenditure needs and fiscal capacity. At this stage, the actual additional factors included should be treated more like an example of what can be done than a firm proposal of how a final index formula would look. Other factors may be included as relevant and for which objective reliable data can be obtained. One set of factors not captured in the index formula, but which may be quite relevant, are those measuring cost differences across jurisdictions in the provision of public services.

[12] As mentioned, *barangays* are not included in the discussion. However, if they were included, the expanded formula here could be adapted to the information available for *barangays*, as is now the case in the IRA transfer.

Where fiscal capacity is being measured as indicated in the next subsection of the paper, and where

λ_1 ……λ_6 = relative weights for each of the factors in the formula

$\lambda 1 + \lambda_2 + \lambda_3 + \lambda_4 + \lambda_5 + \lambda_6 = 1$, and

$\Sigma AI_i = 1$

Two sets of decisions are important to make this approach operational: (i) the proper values of the weights for each of the factors in the formula, and (ii) how to divide the pool of available funds for the FEEP among the groups of LGUs. Unfortunately, there are no clear, exact objective criteria for these choices.

The selection of the weight factors (e.g., λ_1 and λ_2) involves both technical and inescapable political elements. Expert technical analysis within the Philippines from those who intimately know LGU budgets must be used to gauge the relative importance of population and land area in the determination of expenditure needs.[13] Note that the factors approximating expenditure needs are those from 1 to 5.[14] In the same manner, technical expertise should be used in assessing the impact of fiscal capacity in the relative position (truly, the fiscal gap) for the different LGUs. This is approximated with a factor of 6. The stronger weight given to fiscal capacity, the smaller the aggregate weight given to expenditure needs. This follows clearly from the condition that $\lambda 1 + \lambda_2 + \lambda_3 + \lambda_4 + \lambda_5 + \lambda_6 = 1$, and so that $\lambda_{6 =} 1 - (\lambda_1 + \lambda_2 + \lambda_3 + \lambda_4 + \lambda_5)$.

For the purpose of the numerical simulations, the following values are assumed for the weights, but these values are subject to revision and sensitivity analysis:

$\lambda_1 = 0.35$

$\lambda_2 = 0.10$

$\lambda_3 = 0.10$

$\lambda_4 = 0.10$

$\lambda_5 = 0.10$

$\lambda_6 = 0.25$

There is no clear way to divide the available FEEP funds among the different groups of LGUs without computing fiscal gaps for LGUs. At this stage, there are several options that are available: (i) use the same vertical apportionment as in the IRA; (ii) exclude the *barangays,* and divide the available funds between the other three groups; or (iii) also exclude cities as a group, and use the FEEP funds only for groups of LGUs that are widely acknowledged to be in the most need. Of course, the consequences of selecting one vertical apportionment rule or another are of much consequence. As an example, if the second rule is applied, 28.75% of the funds go to the provinces, 28.75% go to the cities, and 42.50% go to the municipalities.

Using the most recent data available for 2008, the summary statistics for the FEEP transfers to three groups of LGUs are shown in Table 2, where the adjusted weighted index formula is used for the horizontal distribution within each group and the adjusted IRA vertical distribution, as discussed above, to apportion the available funds between the three groups. For the pool of FEEP funds to be distributed in 2008, P53,484.3 million was used for an IRA pool of

[13] See Appendix 1 for a discussion of the potential rationale behind the weight factors.

[14] Of course, other factors could be included, and even some could be excluded. Here, the authors' best judgment is used based on international practice and current data constraints. The variable measuring relative poverty, $PovPop_i/\Sigma PovPop_i$, is taken here to approximate certain forms of expenditure needs. However, this variable could also be taken to capture some elements of fiscal capacity, but this is not being done here. Fiscal capacity is being measured independently through the RFC variable.

funds of P213,937.2 million. An example of the necessary computations is shown in Appendix 4 for the case of some provinces.[15]

Table 2: Per Capita Fiscal Equity and Expenditure Performance Fund Transfers under the Adjusted Weighted Index Horizontal Distribution Formula and Adjusted Internal Revenue Allotment Vertical Distribution Rule
(P, simulated for 2008)

	Provinces	Cities	Municipalities
Minimum	140.21	258.26	219.75
Maximum	704.98	1,179.76	19,507.67
Average	288.94	648.14	540.07
Standard deviation	117.22	235.74	579.02
Coefficient of variation	0.41	0.36	1.07
Total FEEP transfers (P million)	15,376.74	15,376. 74	22,730.83

FEEP = Fiscal Equity and Expenditure Performance Fund.

B. Distributing the Fiscal Equity and Expenditure Performance Fund on the Basis of Estimated Fiscal Gaps of Local Government Units

This is a different approach that represents a significant departure from the index approach used in the IRA. This approach is based on the estimation for each LGU of a fiscal gap as the difference between its expenditure needs arising from the current assignment of expenditure responsibilities and its fiscal capacity based on own revenues and also all received transfers and revenue sharing.

$$\text{Fiscal Gap}_i = \text{Expenditure Needs}_i - \text{Fiscal Capacity}_i$$

Note that fiscal capacity measures all of the potential available resources to the LGU other than the specific transfer, so it includes the own fiscal capacity coming from own taxes and fees as well as any shared revenues and all transfers, including the IRA.

First, the expression for the fiscal gap needs to be estimated for each LGU in each of the three groups of LGUs (i.e., provinces, cities, and municipalities). For every LGU within each group that does not have a positive fiscal gap ($FG_i < 0$), $FG_i = 0$ is set. Then, an aggregate fiscal gap for each group can be defined.

Σ Fiscal Gap_i for provinces, cities, or municipalities)

Although an aggregate fiscal gap for each group is being estimated and they all are measured in pesos, the aggregates for the groups are not necessarily comparable because the processes used to estimate expenditure needs and fiscal capacity are conditional on the existing data and the averages for each group. Thus, there would be some LGUs in each group with positive fiscal gaps, indicating a need for additional financing, when it may be possible that in some normative absolute terms all or most LGUs in one group can be in better financial

[15] Note that the maximum value for the municipalities is an outlier due to the current data for Kalayaan municipality, which belongs to Palawan Province (Region IV-B). This municipality, which is a tourist destination, has a population of 53 but relatively large revenues and expenditures.

positions than all or most LGUs in another group. The methodologies discussed below can provide the basis for those normative comparisons, but this paper will not introduce any normative absolute standards for LGUs.

Nevertheless, the aggregate fiscal gap for each group of LGUs indicates the number of LGUs in each group that appears to be in a deficit or positive fiscal gap situation. So, in principle, those aggregate amounts can help inform changes in the apportionment of the available funds in the FEEP across provinces, cities, and municipalities.

In addition, the aggregate fiscal gap for each LGU group can be used to distribute the funds from the FEEP if a vertical distribution of these funds is accepted as used currently in the IRA or other vertical apportionments discussed in the previous section. To see how this would work, the two steps for each group of LGUs are:

(i) **Define the relative fiscal gap**. The relative fiscal gap is the relative size of each locality's fiscal gap as a share of the aggregate fiscal gaps of all localities:
Relative Fiscal Gap_i = Fiscal Gap_i/ΣFiscal Gap_j

(ii) **Assign equalization transfer.** The equalization transfer to local $government_i$ is defined as
FEEP Transfer to $Locality_i$ = Relative Fiscal Gap_i* Part of FEEP Funds for the Group of LGUs.[16]

Notice that different from the extended index approach discussed above, using the fiscal gap approach does not produce a FEEP transfer for each LGU in the group. Instead, only those LGUs with a positive fiscal gap are recipients of the FEEP. This has the advantage of being more equalizing, since only those LGUs that cannot cover their expenditure needs with the available resources would get the grant.

As an example, the vertical distribution rule for the FEEP is assumed the same as the one used above to illustrate the extended index approach, so that 28.75% of the FEEP funds go to provinces, 28.75% go to cities, and 42.50% go to municipalities. These simulations are shown after the review and application of the methodologies to compute expenditure needs and fiscal capacity.

In practice, there are a handful of methods that can be used to estimate expenditure needs. Something similar holds for fiscal capacity. These methods used in international practices are summarized in Appendix 1 and Appendix 2.

[16] Instead of a proportional approach, a mini-max approach can be applied to the final allocation of transfers. With this approach, LGUs in each group are sorted in ascending order by the size of their fiscal disparities. The idea is to start from the bottom, allocating transfers first to those LGUs with the largest fiscal gap and then moving up the ranks. The pool of available FEEP funds is eventually exhausted so that the last LGU receiving the grant funds reports a fiscal gap exactly equal to all those below. Note that not all LGUs with a positive fiscal gap may receive funds under this approach.

C. Approaches to Estimating Expenditure Needs

Below are two possible approaches to estimate the expenditure needs of LGUs.

1. Estimation of Expenditure Needs Using per Client Expenditure Norms (EN1)

The essence of this methodology is to determine, for each significant functional service of an LGU, a financial standard or norm per client or user of the service (e.g., if LGUs were responsible for elementary education, how many pesos per year would be allocated for each elementary school student in the Philippines; this amount could be adjusted up or down with a cost index for delivering this service).[17] This is informed by practice but also a normative budgeting approach in which the authorities establishing budget priorities determine how much is desirable and affordable to spend on different services. As budget priorities change over time, so would the per client expenditure norms for different services. The apparent problem is that no one has stated what these financial per client norms should be for any service in the Philippines. However, the actual executed budgets of last year contain all necessary data to compute the implicit per client financial norms.

Following the same example, the implicit budget norm for elementary education can be obtained as the total sum spent on elementary education by all LGUs divided by the total number of elementary school children in the country. Note that the expenditure norm is common to all LGUs in the absence of variations in cost provision.[18] Once the methodology is established using historical budget data, the budget norms can be changed in every budget period.

The concept of potential users or clients deserves special attention. Users or clients are defined as all possible recipients of the services provided by a municipal government, which do not necessarily correspond to the total population but could also represent a specific segment, such as the elderly, students, or the population of a particular geographic area. Additionally, it is important to distinguish between the potential users and those actually benefiting from the services, since the last group might exclude eligible users due to, for instance, budgetary limitations. Expenditure needs must be computed taking into account all eligible inhabitants (still using the elementary education example, this means that the potential users include all children of elementary school age, whether or not enrolled).

The practical steps are as follows.

Step 1: Determine the expenditure aggregates or envelopes for each local government unit function. The application of this methodology requires the classification of municipal expenditures in terms of the functions or services that the law has defined as a responsibility of LGUs, as well as demographic information to identify the amount of users from each of these services.

[17] This determination of the per client expenditure norm can be done top-down and bottom-up. As discussed in Appendix 2, a bottom-up methodology relies on the costing of the different elements of the service related to some physical standards. This approach requires a lot of time and economic effort to put together, and it risks arriving at per user or client standards that are essentially unaffordable.

[18] This methodology and others that are used to estimate expenditure needs are budget preparation tools. In terms of budget execution, the client-based expenditure norm may have a prescriptive character, forcing LGUs to spend according to the established norm, or it may just be optional, in which case LGUs are allowed to decide a different amount of expenditure per client. The international practice on this is varied.

The methodology of expenditure norms by client requires establishing the total amount of resources actually spent (and in future years, what the central government will determine) for each local service or function. To make the procedure even simpler, it is possible to group those functions with common users, or alternatively, to choose only the most important ones, while the number of users for the remaining functions is assumed to be equal to the population. Using historical expenditure data has the advantage of being feasible, because it is based on effective expenditures incurred in the provision of local services in the country.[19]

The budget data for 2008 identify nine functional categories of local public expenditure: (i) general public service; (ii) education, culture, and sports; (iii) health, nutrition, and population control; (iv) labor and employment; (v) housing and community development; (vi) social security, social services, and welfare; (vii) economic services; (viii) debt servicing; and (ix) other purposes. The estimation of expenditure needs under the per client expenditure norms methodology requires the calculation of the numbers of the clients for each of the above categories of expenditures.

Local expenditure on general public services cannot be assigned to a particular demographic group. Instead, as this function benefits the community as a whole, the total population in the locality is defined as the client base for this service. For similar reasons, economic services, debt servicing, and other expenditures are also spread among the whole population of the locality.

In the case of education, culture, and sports, LGUs are generally responsible for the provision of public school, which includes public kindergarten, primary schools, and high schools. Therefore, the population between ages 4–17 years is defined as the number of potential clients for education services. Regarding culture and sports, the users of these services are assumed to be concentrated in the adult population before retirement, which covers the range between ages 18–65 years. In sum, ages 4–65 years are the potential client numbers for this expenditure category.

The benefits of local expenditure in the area of health, nutrition, and population control are mainly limited to some specific groups, such as children and the elderly. However, services are sometimes also provided to a more broad population. To capture this, a weighted population is defined, with double weights for population under age 5 years and over age 65 years, with a single weight for the rest of the population (ages 5–65 years), as the potential client numbers of this expenditure category.

Services for labor and employment are oriented to the adult population before retirement, so the number of potential clients is estimated as the population between ages 18 and 65 years.

The expenditure on housing and community development include services such as water supply and sanitation, public lighting, natural gas infrastructure, and other communal services. In general, most of these public services benefit entire families, especially poor families, rather than a particular age or demographic group. Therefore, the number of poor

[19] If the potential users are more than those historically benefited, the historical expenditure starting point could become an unfeasible standard.

households is used as an indicator of need, and the expenditure norm is developed for housing and community development services on that basis.[20]

Social security, social services, and welfare is probably the expenditure function for which the client base is more difficult to define. Services in this category are oriented to the assistance of very specific groups, including the elderly, disabled, and children from troubled social environments. Payments are sometimes also expensed to the unemployed and widows. At this time, due to limited data availability, the different client groups cannot be accounted for nor their intensity of the use of these services. Therefore, the elderly is assumed as the most important group among the beneficiaries of social security, and the number of inhabitants over age 65 years is used as the potential client base for these services.

It would be impractical and even misleading to try to define a per client norm for every category of local expenditures. A large number of expenditure standards would reduce transparency in the system and enhance the likelihood of complex discussions about proper client bases. In general, under other expenditures, some functions are unimportant in budgetary terms, as well as a varied combination of beneficiaries, so the local population is again the best option to estimate the number of clients.

Step 2: Compute per client expenditure norm for each local function. Here, the expenditure aggregate (at the national level covering all LGUs) for each function is divided by the number of potential clients (also at the national level) of the services being delivered. This needs to be done for each of the functional areas, covering the entire budget of LGUs. Naturally, the difficulty of this step lies in the identification of potential clients for each service. For example, for education, the client base is logically the school-age population. For health, a client base can be built that overweighs the very young and elderly populations. For social services for the poor, the client base is the population living in poverty. The entire population can be used as the default client base for those functions that cannot be allocated to particular groups. The criteria opted for in the estimation of the number of clients per expenditure category, although well aligned with current international practice, are subject to improvements and intended to serve as examples of how the per client expenditure norms should be designed. In general, it is crucial to have well-defined expenditure responsibilities.[21]

Step 3: Compute expenditure needs for each function in each local government unit. This can be obtained by multiplying the per client expenditure norm for each local function by the client base for that function in the LGU.

Step 4: Compute the total expenditures needs for each local government unit. This corresponds to the sum of the expenditure needs for each function in each LGU.

Tables 3, 4, and 5 present the summary of the selected expenditure categories with their respective estimated number of clients, together with the respective per client expenditure norm.

[20] Poverty data for provinces are available for 2009. However, these data are only available for 2003 for cities and municipalities. In the simulation analysis, only the data available are used.

[21] The standards per client can be easily adjusted upward or downward to the different costs of provisions of a particular service by applying a relative cost index to the standard. At the present time, there are no reliable data on cost differences for service delivery, and therefore no such adjustments are performed.

Table 3: Computation of Expenditure Norms for Provinces
(P, 2008 values)

Expenditure Category	Aggregate Expenditure Needs	Estimated Aggregate Number of Clients	Per Client Expenditure Norm
General public services	20,953,886,720	68,607,096	305.42
Education, culture, and sports	2,315,550,208	57,524,236	40.25
Health, nutrition, and population control	9,033,858,048	20,681,986	436.80
Labor and employment	30,161,374	36,050,832	0.84
Housing and community development	827,712,832	3,781,205	218.90
Social security, social services, and welfare	972,983,232	3,030,817	321.03
Economic services	9,900,763,136	68,607,096	144.31
Debt servicing	1,594,355,840	68,607,096	23.24
Other purposes	10,519,157,760	68,607,096	153.32

Table 4: Computation of Expenditure Norms for Cities
(P, 2008 values)

Expenditure Category	Aggregate Expenditure Needs	Estimated Aggregate Number of Clients	Per Client Expenditure Norm
General public services	39,109,013,504	32,957,168	1,186.66
Education, culture, and sports	9,308,789,760	27,868,748	334.02
Health, nutrition, and population control	7,384,459,264	9,508,969	776.58
Labor and employment	45,499,684	18,663,172	2.44
Housing and community development	3,182,292,480	4,314,455	737.59
Social security, social services, and welfare	2,156,575,232	1,191,232	1,810.37
Economic services	14,982,636,544	32,957,168	454.61
Debt servicing	4,642,338,816	32,957,168	140.86
Other purposes	13,723,859,968	32,957,168	416.42

Table 5: Computation of Expenditure Norms for Municipalities
(P, 2008 values)

Expenditure Category	Aggregate Expenditure Needs	Estimated Aggregate Number of Clients	Per Client Expenditure Norm
General public services	43,324,829,696	55,436,636	781.52
Education, culture, and sports	2,286,163,456	46,164,100	49.52
Health, nutrition, and population control	6,438,859,776	16,678,747	386.05
Labor and employment	69,520,528	28,752,384	2.42
Housing and community development	983,428,864	18,695,866	52.60
Social security, social services, and welfare	2,517,392,896	2,469,623	1,019.34
Economic services	10,452,777,984	55,436,636	188.55
Debt servicing	1,476,958,336	55,436,636	26.64
Other purposes	15,960,967,168	55,436,636	287.91

In Appendix 5, a sample of the data generated is provided to arrive to the expenditure needs of each LGU.

2. Estimation of Expenditure Needs Using Weighted Indexes (EN2)

An alternative method for the estimation of expenditure needs is to use an adjusted version of the weighted index developed in the previous section.[22] For this purpose, first, it is necessary to obtain an aggregate estimate of expenditure needs for all LGUs in each group. These are called LENp, LENc, and LENm, representing, respectively, the aggregate expenditure needs for the provinces (p), cities (c), and municipalities (m). For operational purposes, those aggregate expenditure needs are assumed to be equal to the aggregate executed expenditures in the last year in each group. These aggregates can be adjusted in different forms. Historical expenditures of last year can be adjusted upward to the current year by applying a growth index that may include the rate of inflation and real growth. Also, each of the aggregates could be adjusted up or down depending on prior perceptions that some of the aggregates may underrepresent needs (perhaps the case of municipalities and provinces) or overrepresent needs (perhaps in the case of cities). In future years, the same approach could be used, and the political factor can and should become more explicit in the setting and reordering of expenditure priorities from the top down.

Second, it is necessary to adjust the index formula used above so that it includes only those factors representing expenditure needs. As pointed out above, the index could be different for the different groups, thus reflecting differences in expenditure needs. Here, an adjusted index is used that excludes the fiscal capacity factor:

$$AAI_i = \lambda_1(Pop_i/\Sigma Pop_i) + \lambda_2(Area_i/\Sigma Area_i) + \lambda_3(YoungPop_i/\Sigma YoungPop_i) + \lambda_4(OldPop_i/\Sigma OldPop_i) + \lambda_5(PovPop_i/\Sigma PovPop_i)$$

This index has the same properties as above, and so they will not be repeated here. Below are the steps involved in estimating expenditure needs with this approach.

[22] However, recall that the index formula is used to distribute the available funds in the FEEP. Here, the index formula is used differently, that is, to compute expenditure needs.

Step 1: Determine the aggregate level of local expenditure needs (LENp, LENc, LENm). These can be based on the most recent historical data, but these data can be adjusted in different ways. In the computation, executed budget data for 2008 are used, and no adjustments are made.

Step 2: Select expenditure needs factors. The expenditure needs factors selected can differ among the groups of LGUs. Here, population, land area, youth population, elderly population, and population living in poverty are used.

Step 3: Compute each local government unit's relative need for each factor. The share of population for each LGU in the entire population is $Pop_i/\Sigma Pop_i$ (and so on).

Step 4: Determine the relative importance or weights of each needs factor. The weights are assumed to be $\lambda_1 = 0.40$, $\lambda_2 = 0.15$, $\lambda_3 = 0.15$, $\lambda_4 = 0.15$, and $\lambda_5 = 0.15$. Other sets of weights could be assumed and be simulated.

Step 5: Calculate the expenditure need for locality i. This is

$Need_{ip} = AAI_{ip} \cdot LENp$ for provinces

$Need_{ic} = AAI_{ic} \cdot LENc$ for cities

$Need_{im} = AAI_{im} \cdot LENm$ for provinces

A summary of the computation is shown in Table 6, and an example of the data computation to arrive at the results is shown in Appendix 6.

Table 6: Per Capita Expenditure Needs Using Weighted Index Formula
(P, descriptive statistics for 2008)

	Provinces	Cities	Municipalities
Minimum	567.15	1,991.18	968.02
Maximum	1,844.61	6,997.48	107,315.7
Average	899.68	3,541.45	1,762.22
Standard deviation	186.90	1,222.11	2,824.68
Coefficient of variation	0.21	0.35	1.60

D. Approaches to Estimating Fiscal Capacity

Fiscal capacity has been defined as the potential revenue that an LGU can raise from its tax base, exerting an average level of effort. To measure fiscal capacity, it is natural to focus on those revenue sources over which LGUs have a certain degree of autonomy (i.e., the capacity to modify either the base or the rates applied). These are usually referred to as own revenues. Other revenues, such as shared taxes and transfers, provide LGUs with revenues, but since they cannot be directly affected by LGUs, they can be accounted for directly by the amounts actually received by LGUs for those concepts.

The adequate estimation of local fiscal capacity becomes important because of the ability that LGUs have to affect actual tax collections. As the fiscal gap (and thus the FEEP transfer actually received) is expected to be larger with lower fiscal capacity, there may be an incentive for government officials to reduce tax effort from their own revenue sources (i.e., those over which they can exert effective autonomy). In contrast, as remarked above, those other revenue sources not subject to the influence of LGU actions, such as shared taxes or other transfers, do not present any difficulty in this regard. For revenues outside of the control of

LGUs, historical or actual revenues usually represent a good approximation to revenue collection capacity.

The problem of estimating fiscal capacity is therefore reduced to the adequate estimation of properly defined own revenues. Overall, fiscal capacity is thus defined as the sum of estimated potential own revenues (EOR_i), and all other shared revenues and transfers received (OT) other than the FEEP transfer. The fiscal capacity of an LGU i can then be computed as

$$FC_i = EOR_i + OT_i$$

Unfortunately, there is usually a lack of data on tax bases, which limits the ability to estimate own revenue capacity. Nevertheless, there is information on cadastral values for the property taxes, which is used.

Regardless of the methodology used to estimate potential own revenues, overall per capita fiscal capacity is obtained, as shown in the formula, by adding up the estimate of own revenues to the actual shared revenue shares and all transfers (except for those received from the FEEP).

In the following discussion, two methodologies are presented for estimating potential own revenues (EOR_i).

1. Estimation of Fiscal Capacity Using Average of Past Collection Ratios (FC_i)

In the absence of detailed local data, the estimation of fiscal capacity can be based on historical information available for local fiscal revenues. In general terms, this methodology can be described by the following procedure.

Step 1: Select the revenue sources and time periods that help estimate the ability of local government units to collect their own revenues (OR_i), and for which complete information is available. It is useful to use, for example, average data for the last 3 years. The categories considered in the estimation should be those for which LGUs have some discretion or ability to change the effort of collection. Thus, this category should include fully assigned taxes to LGUs plus all user fees and charges.

Step 2: Compute revenues based on the local revenue source j, F_j, for each local government unit i, and do the same at the national level for all local government units in the same group. The following can be defined.

F_{ij} = *local revenues from j* as the revenue from source j in each in LGU i and
F_{Nj} = *total revenues in group from j*

as the revenue in the set of all LGUs in the group from source j. It follows that total current own revenues for LGU i is given by $\Sigma_j F_{ij}$ and for the entire group of LGUs by $\Sigma_j F_{Nj}$.

The estimation of fiscal capacity should be based on potential revenues. As explained, the use of historical or actual fiscal revenues might result in providing perverse incentives to LGUs. A practical way of facing this problem is to consider an average of the relative (with respect to the national level) per capita tax collections for a relatively longer period of time (e.g., 3 years) as an indicator of local fiscal capacity. The idea is in using averages of several periods, it will become more difficult for LGUs to alter the indicator of relative fiscal capacity.

Step 3: Compute the index of relative fiscal capacity, $IRFC_i$, for each group of local government units. Provinces, cities, and municipalities can be defined as the historical average (2008–2010) of $\Sigma_j F_{ij}/\Sigma_j F_{Nj}$ representing the relation between the own revenue of local unit *i* and the one for the entire group.

Step 4: Compute the fiscal capacity for each municipality i in each group. This should be as $FC_i = IRFC_i$ aggregate forecast of collections for the entire group, such that FC_i can be interpreted as the amount of collections that an LGU would have in the projected period. For the purpose of the simulations, the aggregate own revenue collections for each group of the last year available are used as a way to define the aggregate forecast of collections for the entire group. Note that the aggregate forecast of collections for the entire group for future years could be obtained by applying a growth index to the base year based on the inflation rate and some estimate of real growth for the main tax bases.

Although, presently, implementation of this methodology is less than ideal, it may be a good alternative to estimate potential own revenues and fiscal capacity of LGUs in the short term. The data required in this approach are not difficult to generate, and the use of several periods provides a simple, effective way to reduce the perverse incentive problem.

A sample of the data and procedures to estimate the capacity with the average of past collection ratios is shown in Appendix 7 while the summary descriptive statistics are shown in Table 7.

Table 7: Per Capita Fiscal Capacity Using Average of Past Collection Ratios
(P, descriptive statistics)

	Provinces	Cities	Municipalities
Minimum	431.87	1,434.61	441.95
Maximum	11,126.72	15,526.94	269,194.9
Average	1,357.81	3,464.35	2,288.65
Standard deviation	1,295.27	1,582.38	7,105.55
Coefficient of variation	0.95	0.46	3.10

2. Estimation of Fiscal Capacity Using Basic Proxies (FC2)

Another methodology that can be used to calculate local fiscal capacity is to employ a proxy that is highly correlated with an LGU's capacity to collect revenues. Ideally, some measure of gross local product or per capita income would be used, but lacking those data, property value assessments are used here as a proxy for the entire own revenue capacity. This is less than ideal because a good proxy requires that LGUs do not have any capacity to modify the values that the proxy takes.

The logic behind using property value assessments is that (i) it is the variable available that is close to some measure of tax bases; and (ii) that is not unreasonable to think that if assessed values are high, other tax bases in LGUs are also likely to be high. That is, property value assessments are highly correlated with other local tax bases. Unfortunately, only property value assessments for provinces and cities are available. Therefore, this measure of fiscal capacity, FC2, is only calculated for provinces and cities in this paper.

The basic regressions of local own revenues on property value assessments are shown in Table 8. The relative high values of the R-square indicate a good fit and high explanatory power of the chosen proxy. The summary statistics for the estimated fiscal capacity are shown in Table 9. Cities, on average and as expected, have higher per capita fiscal capacity, more than double the per capita capacity of provinces. The variation in the estimates is larger in the case of the provinces as measured by the coefficient of variation.

Table 8: Property Value Assessments as a Proxy Variable for Local Own Revenues

	Province		City		Municipality	
	Coefficients	t-Stat	Coefficients	t-Stat	Coefficients	t-Stat
Constant	4.69e+07	4.28	1.50e+07	0.40	…	…
Property tax assessment coefficient	.007	13.73	0.042	31.25	…	…
R-square	0.71		0.88		…	…
F-statistic	188.38		976.47		…	…

… = data not available.
Source: Department of Finance and own calculations.

Table 9: Per Capita Fiscal Capacity Using Basic Proxies
(P, descriptive statistics for 2008)

	Provinces	Cities	Municipalities
Minimum	433.12	1,416.93	…
Maximum	10,759.2	12,544.29	…
Average	1,346.35	3,512.88	…
Standard deviation	1,255.44	1,575.95	…
Coefficient of variation	0.93	0.45	…

… = data not available.

E. Coming Up with the Fiscal Gap for Local Government Units

From the combination of the alternative methodologies described above, four measurements of fiscal gaps can be derived for the three groups of LGUs. Each measurement leads to a different distribution of the FEEP across the LGUs. The four alternatives are presented in the following table.

Table 10: Alternative Measures of the Fiscal Gap

		Fiscal Capacity Measurement	
		Average of past collection ratios (FC1)	Basic proxy (FC2)
Expenditure needs measurement	Per client expenditure norms (EN1)	Fiscal gap measure 1	Fiscal gap measure 2
	Weighted indexes (EN2)	Fiscal gap measure 3	Fiscal gap measure 4

Thus, for instance, fiscal gap measure 3 is based on the estimation of expenditure needs according to the weighted indexes' methodology (EN2) and the estimated value of local fiscal capacity obtained by using the average of past collection ratios (FC1), such that the fiscal gap be defined as:

$$FG3 = EN2 - FC1$$

Different measures of fiscal gaps can be obtained from different combinations, and a discussion ensues as to which of the available alternatives make more sense to be used in the distribution of the FEEP in the short to medium term. In Tables 11 to 13, descriptive statistics are presented for the four alternative measures. To make them more comparable, they are expressed in per capita terms.

No measure of fiscal gap is superior to another based only on these statistics, but it is important to have a notion about the distribution of per capita fiscal gaps to evaluate and compare the performance of the alternative methodologies. In truth, what matters is the quality of the estimations of expenditure needs and fiscal capacity. The more accurate those estimations are, then the more reliable the estimation of per capita fiscal disparities.

For Tables 11 to 13, it is important to note that the results from the four proposals are mostly consistent in terms of the determination of LGUs with positive fiscal disparities (i.e., expenditure needs greater than fiscal capacities); perhaps the exception is for the case of cities.

Table 11: Fiscal Gaps for Provinces
(P, descriptive statistics 2008 values)

	Fiscal Gap Measure 1	**Fiscal Gap Measure 2**	**Fiscal Gap Measure 3**	**Fiscal Gap Measure 4**
Minimum	(3,141.47)	(3,314.35)	(2,685.70)	(2,858.58)
Maximum	375.06	373.81	359.97	358.72
Range (maximum–minimum)	3,516.53	3,688.16	3,045.67	3,217.30
Average	(413.12)	(398.38)	(332.89)	(318.15)
Standard deviation	668.93	669.26	556.39	557.41
Average of positive fiscal disparities	106.15	111.51	126.22	109.86
Number of localities with positive fiscal disparities	21.00	19.00	16.00	20.00

( ) = negative.

Table 12: Fiscal Gaps for Cities
(P, descriptive statistics 2008 values)

	Fiscal Gap Measure 1	Fiscal Gap Measure 2	Fiscal Gap Measure 3	Fiscal Gap Measure 4
Minimum	(12,754.20)	(9,771.62)	(13,503.80)	(10,521.20)
Maximum	1,394.33	1,477.18	2,986.23	2,940.93
Range (maximum–minimum)	14,148.59	11,248.80	16,490.09	13,462.14
Average	(517.18)	(559.21)	86.41	27.18
Standard deviation	1,599.82	1,577.06	1,943.91	1,871.69
Average of positive fiscal disparities	467.71	488.73	988.12	956.84
Number of localities with positive fiscal disparities	55.00	54.00	90.00	85.00

( ) = negative.

Table 13: Fiscal Gaps for Municipalities
(P, descriptive statistics 2008 values)

	Fiscal Gap Measure 1	Fiscal Gap Measure 2	Fiscal Gap Measure 3	Fiscal Gap Measure 4
Minimum	(26,7796.60)	…	(16,1879.30)	…
Maximum	1,042.23	…	1,176.10	…
Range (maximum–minimum)	26,8838.8	…	16,3055.4	…
Average	(776.57)	…	(530.03)	…
Standard deviation	7,146.20	…	4,372.80	…
Average of positive fiscal disparities	205.23	…	193.91	…
Number of localities with positive fiscal disparities	467.00	…	493.00	…

( ) = negative, … = data not available.

As previously mentioned, one of the two most important goals of the FEEP is to reduce the differences in fiscal disparities (or fiscal gaps) across LGUs. In practical terms, this requires reducing, to a greater extent, the largest local fiscal disparities.

Any measurement of per capita fiscal gap provides a natural criterion for the assignment of FEEP funds. Those LGUs with negative fiscal gaps (i.e., fiscal capacity exceeding their expenditure needs) do not require, in principle, funds from the FEEP. At the same time, those LGUs with larger (i.e., positive) fiscal gaps should receive greater per capita transfers than others with smaller fiscal disparities. However, how big a per capital fiscal gap should be to define an LGU as a beneficiary and how much more FEEP funds should be given to a relatively needy jurisdiction are open questions.

Below, one of several alternative approaches is implemented to apportioning the available FEEP funds among LGUs with positive fiscal disparities, known as the proportional allocation mechanism. This approach apportions the available transfer funds among LGUs as a fixed proportion of their positive fiscal disparities within each group of LGUs. No matter what the size of the fiscal disparity, all LGUs with a positive fiscal gap will receive a transfer from the FEEP, and the size of the transfer depends on the percentage of total positive disparities represented by that LGU and, of course, on the size of the FEEP funds to be transferred.

This point returns to the issue of the vertical distribution of the FEEP funds across the different LGU groups. Here, two sets of assumptions are made for actually implementing the FEEP distributions. In the first case, the vertical distribution assumed in the subsection above is repeated, assigning 28.75% of the available FEEP funds to provinces, 28.75% to cities, and 42.50% to municipalities.

In the second approach, the FEEP funds are apportioned proportionally to the total positive fiscal gaps for each group of LGUs. To arrive at these proportions, the positive fiscal gaps are added across the three groups of LGUs, and then the proportion for each is derived. As discussed above, this approach is far from ideal, because the estimations of fiscal gaps is conditional on the current systems of intergovernment finance, including the IRA. In the future, it will be possible to arrive at measures of fiscal gaps that are based on normative statements of expenditure needs of different LGUs, which will provide a better justification for the vertical apportionment of the FEEP funds based on the proportional size of aggregate fiscal gaps for the different groups of LGUs.

The results from implementing the proportional allocation mechanism for the FEEP funds are below. To divide the available FEEP funds for the three groups of LGUs, the relative fiscal gaps are computed for provinces, cities, and municipalities following the steps described above. The results for the relative fiscal gaps, which, only apply to those LGUs with positive fiscal gaps, are shown in Tables 14 to 16. Examples of the steps followed for these computations are shown in Appendix 8.

Table 14: Relative Fiscal Gaps for Provinces
(descriptive statistics)

	Relative Fiscal Gap Measure 1	Relative Fiscal Gap Measure 2	Relative Fiscal Gap Measure 3	Relative Fiscal Gap Measure 4
Minimum	0.0006	0.0015	0.0067	0.0027
Maximum	0.1683	0.1764	0.1782	0.1633
Range (maximum–minimum)	0.1677	0.1749	0.1716	0.1605
Average	0.0480	0.0530	0.0630	0.0500
Standard deviation	0.0430	0.0450	0.0430	0.0390

Table15: Relative Fiscal Gaps for Cities
(descriptive statistics)

	Relative Fiscal Gap Measure 1	Relative Fiscal Gap Measure 2	Relative Fiscal Gap Measure 3	Relative Fiscal Gap Measure 4
Minimum	0.0004	0.0002	0.0012	0.0001
Maximum	0.0542	0.0560	0.0336	0.0362
Range (maximum–minimum)	0.0538	0.0558	0.0323	0.0360
Average	0.0182	0.0185	0.0111	0.0118
Standard deviation	0.0143	0.0128	0.0070	0.0076

Table 16: Relative Fiscal Gaps for Municipalities
(descriptive statistics)

	Relative Fiscal Gap Measure 1	Relative Fiscal Gap Measure 2	Relative Fiscal Gap Measure 3	Relative Fiscal Gap Measure 4
Minimum	6.27E-07	…	3.84E-06	…
Maximum	0.010875	…	0.012303	…
Range (maximum–minimum)	0.010874	…	0.012299	…
Average	0.002141	…	0.002028	…
Standard deviation	0.001568	…	0.001541	…

… = data not available.

Table 17 provides the summary descriptive statistics for the allocation of FEEP transfers assigned using the fiscal gap measure 1 (FG1), that is with per client expenditure norms for measuring expenditure needs (EN1). It also uses the average of past collection ratios for measuring fiscal capacity (FC1), also using the proportional allocation mechanism for the apportionment of the funds as well as the vertical distribution assumed in the subsection above by assigning 28.75% of the available FEEP funds to provinces, 28.75% to cities, and 42.50% to municipalities.

Table 17: Per Capita Fiscal Equity and Expenditure Performance Transfers under Proportional Allocation and Adjusted Internal Revenue Allotment Vertical Distribution Rule
(P, 2008)

	Provinces	Cities	Municipalities
Minimum	0	0	0
Maximum	2,031.23	4,445.48	9,068.76
Average	126.42	576.52	315.71
Standard deviation	326.42	1,016.61	669.30
Coefficient of variation	2.58	1.76	2.12
Total FEEP transfers (P million)	15,376.74	15,376.74	22,730.83

FEEP = Fiscal Equity and Expenditure Performance Fund.

Next, alternative allocation of the FEEP transfers is performed by using the same set of assumptions, except for the vertical distribution of the funds among provinces, cities, and municipalities. The FEEP funds are apportioned proportionally to the total positive fiscal gaps for each group of LGUs. First, the proportions or shares are computed, total, for positive fiscal gaps across the three groups of LGUs. The allocation of FEEP transfers that would follow if this vertical distribution rule was used is different from those in Table 17. As shown in Table 18, for the summary statistics of this distribution, the clear winners, vis-à-vis the results in Table 17, are the municipalities.

The horizontal distribution rule applied in both Tables 17 and 18 is an example of how this allocation can be done. As noted, there are other possibilities for the horizontal allocation. Improving on the horizontal allocation rule will be conditioned by the improvements of the available data so that more sophisticated methodologies can be used to capture expenditure needs and fiscal capacity.

Table 18: Per Capita Fiscal Equity and Expenditure Performance Transfers under Proportional Allocation and Share of Aggregate Fiscal Gap Vertical Distribution Rule
(P, 2008)

	Provinces	Cities	Municipalities
Minimum	0	0	0
Maximum	127.17	3,213.12	16,520.08
Average	7.92	416.70	575.12
Standard deviation	20.44	734.79	1,219.23
Coefficient of variation	2.58	1.76	2.12
Total FEEP transfers (P million)	9,627.18	11,114.03	41,407.54

FEEP = Fiscal Equity and Expenditure Performance Fund.

On the other hand, there are no strong reasons supporting either modality of vertical allocation of the FEEP funds among the three groups of LGUs used in Table 17 and Table 18. Their advantage is that they offer a rationale for the vertical distribution as opposed to some rule that is arbitrarily derived. However, a strong vertical allocation rule could be derived, if the normatively derived expenditure norms are used in the computation of expenditure needs for all LGUs. This would also improve the horizontal distribution of the funds within each group of LGUs, but this paper cannot make these adjustments.

To close this section, some of the dimensions of the equalization impact of distributing the FEEP funds are examined using a fiscal gap approach. First, not all LGUs receive transfer funds under this approach. As shown in Tables 11–13, only a share of provinces, cities, and municipalities end up with a positive fiscal gap and are therefore entitled to receiving FEEP funds. Based on the total numbers for the different groups of LGUs,[23] the simulations show that only 20%–27% of provinces receive FEEP funds, 40%–61% of cities, and 31%–33% of municipalities.[24]

Table 19: Coefficient of Variation of the Per Capita Incomes Available Before and After the Fiscal Equity and Expenditure Performance Fund

	Provinces	Cities	Municipalities
Before FEEP	0.936	0.445	3.108
After FEEP 1	0.510	0.383	2.714
After FEEP 2	0.471	0.356	2.733
After FEEP 3	0.542	0.360	2.497

FEEP = Fiscal Equity and Expenditure Performance Fund.
Note: FEEP 1 represents FEEP transfers under the adjusted weighted index horizontal distribution formula and the adjusted IRA vertical distribution rule, FEEP 2 represents FEEP transfers under the proportional allocation and adjusted IRA vertical distribution rule, and FEEP 3 represents FEEP transfers under the proportional allocation and share of aggregate fiscal gap vertical distribution rule.

[23] The percentages that follow are based on totals of 78 provinces, 136 cities, and 1,492 municipalities.
[24] Not all cities are wealthy, and the computed fiscal gap is still a relative concept based on historical data. Because few cities are very rich, this is likely to pull a large number of other cities into having a positive fiscal gap. A lot of these numbers could change in the future once absolute measures of expenditure needs are derived.

Second, the impact of the FEEP distribution is equalizing as can be seen in Table 19 by the significant reductions in the coefficient of variation for per capita income available before and after the distribution of the FEEP within the provinces, cities, and municipalities.

Third, the amounts per capita distributed with the FEP are not at all trivial if they are compared with the amounts per capita received from the IRA; actually, in many cases, they can be much higher. Tables 20 to 22 show the per capita amounts received from the IRA and from the FEEP for the 10 largest winners in per capita FEEP amounts for provinces, cities, and municipalities.

Table 20: Per Capita Internal Revenue Allotment and Fiscal Equity and Expenditure Performance Fund for the 10 Largest Winners from the Fiscal Equity and Expenditure Performance Fund, Provinces
(based on fiscal gap 1)

Region	Province	IRA	FEEP 1	FEEP 2	FEEP 3
Region XII	Maguindanao	412.634	204.548	2,031.225	127.172
Region III	Nueva Ecija	491.088	190.542	941.812	58.966
Region III	Pampanga	473.961	158.447	784.321	49.105
Region V	Camarines Sur	590.530	214.251	843.024	52.781
Region I	Pangasinan	492.485	172.967	482.037	30.180
Region IX	Sulu	633.692	210.077	1,305.255	81.720
Region VI	Iloilo	577.965	197.140	513.449	32.146
Region IV-A	Rizal	432.889	144.583	363.529	22.760
Region VII	Bohol	671.935	228.898	556.333	34.831
Region VI	Negros Occidental	593.041	187.058	279.647	17.508

IRA = internal revenue allotment, FEEP = Fiscal Equity and Expenditure Performance Fund.
Note: Year 2008 data. FEEP 1 represents FEEP transfers under the adjusted weighted index horizontal distribution formula and adjusted IRA vertical distribution rule, FEEP 2 represents FEEP transfers under the proportional allocation and adjusted IRA vertical distribution rule, and FEEP 3 represents FEEP transfers under the proportional allocation and share of aggregate fiscal gap vertical distribution rule.

Table 21: Per Capita Internal Revenue Allotment and the Fiscal Equity and Expenditure Performance Fund for the 10 Largest Winners from the Fiscal Equity and Expenditure Performance Fund, Cities
(based on fiscal gap 1)

Region	City	IRA	FEEP 1	FEEP 2	FEEP 3
Region XII	Cotabato City	1,333.994	543.052	3,216.155	2,324.581
Region III	San Jose del Monte City	1,013.657	366.653	1,893.676	1,368.716
Region XII	Marawi City	1,372.108	544.568	4,376.881	3,163.533
Region XII	General Santos City	1,251.368	396.923	1,103.752	797.773
Region IV-A	Antipolo City	1,048.766	332.166	906.155	654.953
Region I	San Carlos City	1,702.440	609.463	3,524.536	2,547.473
Region VII	Talisay City (Cebu)	1,260.918	471.279	3,083.100	2,228.411
Region V	Tabaco City	1,774.952	645.854	4,445.481	3,213.116
Region III	Malolos City	1,234.820	439.594	2,392.208	1,729.046
Region IX	Zamboanga City	1,493.793	440.437	681.666	492.697

IRA = internal revenue allotment, FEEP = Fiscal Equity and Expenditure Performance Fund.
Note: Year 2008 data. FEEP 1 represents FEEP transfers under the adjusted weighted index horizontal distribution formula and adjusted IRA vertical distribution rule, FEEP 2 represents FEEP transfers under the proportional allocation and adjusted IRA vertical distribution rule, and FEEP 3 represents FEEP transfers under the proportional allocation and share of aggregate fiscal gap vertical distribution rule.

Table 22: Per Capita Internal Revenue Allotment and the Fiscal Equity and Expenditure Performance Fund for the 10 Largest Winners from the Fiscal Equity and Expenditure Performance Fund, Municipalities

(based on fiscal gap 1)

Region	Province	Municipality	IRA	FEEP 1	FEEP 2	FEEP 3
Region IX	Tawi-Tawi	Balimbing	439.561	403.718	4,894.385	8,915.842
Region IX	Basilan	Maluso	745.383	351.985	3,496.870	6,370.063
Region XII	Maguindanao	Datu Odin Sinsuat	654.487	328.303	1,533.682	2,793.828
Region VII	Cebu	Barili	745.354	361.131	2,604.800	4,745.025
Region IX	Sulu	Jolo	747.425	272.250	1,116.778	2,034.376
Region XII	Lanao Del Sur	Piagapo	850.203	459.664	4,373.018	7,966.094
Region XII	Maguindanao	Matanog	848.958	419.647	4,149.793	7,559.458
Region IX	Sulu	Indanan	860.292	312.326	1,712.173	3,118.974
Region XII	Maguindanao	Parang	731.079	338.620	1,383.433	2,520.127
Region XII	Maguindanao	Talayan	870.496	441.588	5,355.485	9,755.804

IRA = internal revenue allotment, FEEP = Fiscal Equity and Expenditure Performance Fund.

Note: Year 2008 data. FEEP 1 represents FEEP transfers under the adjusted weighted index horizontal distribution formula and adjusted IRA vertical distribution rule, FEEP 2 represents FEEP transfers under the proportional allocation and adjusted IRA vertical distribution rule, and FEEP 3 represents FEEP transfers under the proportional allocation and share of aggregate fiscal gap vertical distribution rule.

V. PERFORMANCE-BASED EVALUATION OF RECIPIENT LOCAL GOVERNMENT UNITS

A key element in the design of the FEEP is to ensure that the additional 10% funding will be used by LGUs to improve their service delivery performance. There are two different approaches that can aid in monitoring and improving the performance of LGUs. The first is a traditional approach, using ex-ante controls and conditions on how LGUs can deploy the additional funds. These include regulations on how the funds may be spent, what kind of inputs can be used, and pre-approval of local decisions by higher authorities. However, the trend in budgeting policy and practice worldwide has been toward de-emphasizing or abandoning this approach.

The second option is to focus on the performance of LGUs by examining ex-post what they have been able to achieve inquantifiable improvements in the quality and quantity of public services. This new trend merges well with the emphasis at the national level on performance-based budgeting and medium-term budgeting frameworks. However, there are significant difficulties in implementing this approach. The measurement of the quality and quantity of many public services can be challenging. Yet significant advances have been made in this area, and therefore, despite the challenges, using ex-post performance-based evaluation would be best to ensure the more efficient use of FEEP funds.

Although they are not uncommon, the experience worldwide with performance-based grants is not yet significant. Bergvall et al. (2006) reviewed some European experience, and Shah (2009) reviewed the experiences of other developed and developing countries. Some performance-based grants in other countries are quite recent, such as Australia's national schools-specific purpose payments and the Race to the Top competitive grant program in the United States. Among developing countries, Brazil has implemented performance-based grants for education and health, while Argentina, Chile, and Indonesia have used them for a variety of services, including roads, water, and even social insurance.

In general, there are different implementation paths that can be followed. Two important objectives are to preserve a high degree of autonomy of LGUs and to give them enough time to adjust and improve their performance. This latter will be important because many of the recipient LGUs are relatively poor with low administrative capacity.

This paper proposes providing LGUs a period of time (for example, 3 years)[25] after receiving the additional funds to show proof of improved performance in a number of carefully selected indicators. In the case of unsatisfactory performance, a probationary period of 3 more years with reduced funding from the FEEP of 50% would be granted. In the case of failure after the probationary period, the FEEP allocation would be terminated for, say, 3 additional years. After that, a new cycle could be started for qualifying LGUs under the FEEP horizontal distribution rules. Of course, these are suggestive periods and rules and will be subject to modification and improvements through a dialogue with stakeholders, especially of LGU associations.

A challenge will lie in the selection of the performance indicators. The indicators at a minimum should meet these characteristics or properties. They need to be measured independently from the LGUs themselves; that is, they cannot be self-reported to avoid moral

[25] The selection of the time period may not be a simple matter since the typical terms of local officials are 3 years, so it is not clear that the right incentives would be in place.

hazard problems. Ideally, the measurements should be provided by an independent agency, which is accepted with respect and credibility by all stakeholders. The indicators also need to be meaningful, that is, matter in a significant way for quality and quantity of public services and ultimately for the quality of life of the residents in each LGU.

An additional challenge is that whatever indicators are selected, the different LGUs are likely to start at different points in terms of those indicators. This means that if the indicator levels are too low, many LGUs would just automatically qualify, which would produce no inducement to increase performance. A potential solution to this dilemma may be to focus on differentiated changes in those indicators as opposed to the levels of the indicators. However, this choice will not be problem-free, because the relative difficulty of achieving advances in the different indicators is not likely to be independent of the level of the indicator itself. This is an area that will require ample discussion and consensus with stakeholders.

One first choice of performance criteria is whether they should concentrate exclusively on the expenditure-service side of the budget or could also include criteria from the revenue side of the budget. There are good arguments to include the revenue side, since many observers of the decentralization process in the Philippines have highlighted the low level and declining trend in own revenue collections by LGUs. A possible performance criterion could involve certain percent increases in the collection of property taxes, or perhaps all own revenues.

However, it is clear that the bulk of the performance criteria would come from the expenditure-service side of the budget. An important decision will be whether to focus on the outputs of services or on the outcomes. In general, the indicators should be service outputs, as opposed to outcomes, given that the local jurisdictions tend to have much less control for service outcomes. For example, local jurisdictions can do more to ensure high rates of vaccination or enrollment rates for children. They are less able to control the overall health of children or their overall level of intellectual achievement since these outcomes depend on many other variables, including the income and level of education of parents, which are outside the control of LGUs.

Further, the property of “meaningfulness” could be met if the performance indicators are to focus at least in part on the Millennium Development Goals in the areas of health, education, and poverty reduction. Possible candidates for performance measurement could include the percent change in infant mortality rate, percent change in enrollment rates, and percent change in access to potable water. As simple as these indicators may look, there would still be formidable difficulties in getting them implemented.

Fortunately, solid foundation work has been already done in the Philippines in the area of LGU performance measurement, for example by Sosmeña, Guillermo, and Sappuay (2004) and Guillermo (2008). The Department of the Interior and Local Governments has developed its own Local Government Performance Measurement System, which also provides a good starting point for the selection of the proper performance indicators.[26]

[26] See also the background report from the Government of the Philippines, Department of Finance, Municipal Development Fund Office (2008).

VI. SUMMARY AND CONCLUSIONS

The design of the new transfer, the FEEP, for 10% additional funding as separate from the IRA faces four major challenges: (i) how to concretely define the origin and computation of the 10% additional funding, (ii) how to apportion the additional funding among the different groups of LGUs (i.e., provinces, cities, municipalities, and *barangays*), (iii) what formula to use for the distribution of the additional funds for qualifying LGUs in each particular group of LGUs, and (iv) how to ensure that the additional funds will be used by LGUs to improve their service delivery performance.

Regarding how to define the origin and computation of the 10% additional funding, two basic options were explored, using the same base as for the IRA, which is internal revenue collection, or using the broader base of total national revenues, which expands the IRA base to include all the collections also realized by the Bureau of Customs. The 10% equivalent increase in funding is the same under both options. The only difference is how the two bases perform in the future, in particular from the viewpoint of their volatility. Although there is some evidence that the broader base exhibits a bit more volatility over time, the differences are not significant. Therefore, there is not a clear preference for either of the two bases for the FEEP.

Perhaps the greatest challenge in designing the FEEP is how to divide the additional funding among the different groups of LGUs. One of the options considered was a modified IRA apportionment by excluding the *barangays* from the vertical distribution. A second option used the vertical distribution among provinces, cities, and municipalities being proportional to their respective aggregate positive fiscal gaps, where those fiscal gaps were estimated in this paper. The advantage of either approach is that both offer a rationale for the vertical distribution as opposed to a new rule that is again arbitrarily derived. Fundamentally, the only sound approach to the derivation of the vertical distribution rule is to institute it in accordance with the true expenditure needs of the different groups of LGUs. The expenditure needs derived in this paper are based on recent budget data, and they do not necessarily coincide with what is considered to be the true expenditure needs. That is, the expenditure needs derived in this paper reflect the actual expenditures of different LGUs. If, for example, cities receive proportionally much more funds than municipalities, the budgetary data and therefore the computed expenditure needs will reflect higher expenditure needs for cities when this actually may not be the case. A strong vertical allocation rule can be derived if normatively derived expenditure norms are used in the computation of expenditure needs for all LGUs. However, this paper could not make the normative decisions necessary for the true expenditure needs.

The paper also addressed what formula to use for the distribution of the additional funds for qualifying LGUs in each particular group. Here, there seems to be clear the consensus on the need to improve the current formula used for the IRA distributions, based on a weighted index of population, land area, and equal shares. In the paper, two alternative approaches were developed. First the weighted index approach, now used in the IRA, was improved and expanded by introducing additional factors to better proxy the difference in expenditures needs. These factors include the young and elderly populations and the incidence of poverty. An additional factor was also introduced accounting for the differences in fiscal capacity across LGUs. The second approach consisted of the estimation of a fiscal gap, defined as the difference between expenditure needs and fiscal capacity, for each LGU.

The paper then reviewed the different methodologies available for the estimation of expenditure needs and fiscal capacity, and it implemented with data for 2008 two measures for

the estimation of expenditures needs and also two measures for the estimation of fiscal capacity. The simulations of the FEEP transfers were carried out with the different methodologies assuming two different vertical allocation rules across groups of LGUs. The first is a modified IRA allocation rule (excluding *barangays*), and the second is in proportion to the aggregate positive fiscal gaps in each group of LGUs. Using the fiscal gap approach allows restriction of FEEP transfers only to those LGUs that have a positive fiscal gap. Under the expanded weighted index approach, all LGUs receive FEEP transfers.

The last section of the paper addressed the issue of how to ensure that the additional FEEP funds will be used by LGUs to improve their service delivery performance. As opposed to using ex-ante conditionality for receiving the additional funds, the paper proposed using ex-post performance indicators. This approach preserves a higher degree of autonomy of LGUs. The carefully selected performance indicators need to be measured independently from the LGUs themselves and should be meaningful in a significant way in the quality of life of residents. The indicators should preferably be service outputs, as opposed to outcomes, given the local jurisdictions tend to have much less control for service outcomes. Because of very different starting points in most indicators for different LGUs, performance need to be read as differentiated changes in the selected indicators. Failure to deliver improved performance in the set period would be followed by suspension of half of the available funding. After another round or period of performance, the funding could be completely suspended, with continued failure to improve, or fully restored, with increased performance. Although the paper explored the past experience in the Philippines with performance indicators and several possibilities that may be available, the actual selection of the performance indicators will require further work.

APPENDIX 1

BASIC RATIONALE AND MEASUREMENT OF WEIGHTS FOR EXPENDITURE NEEDS FACTORS

There are two ways to approach the measurement of expenditure needs factors: the number of clients and the cost of standard local service provision.

The number of clients can be used when the cost of the public service varies directly with the number of users. In particular, when the per unit cost of the public service is the same across jurisdictions and does not change with the number of users, a direct application of this approach is the best option to estimate expenditure needs.

If an expenditure needs factor captures the number of consumers for a particular local service, then the natural choice for the weight assigned to this factor is the percent of aggregate local expenditures accounted for this particular service. For instance, if education is 43% of the aggregate local budget, one may wish to assign the factor “school-aged children” a weight of 0.43 in the expenditure needs formula.

It is, however, common to observe differences in the costs of inputs across jurisdictions, as well as changes in production costs as the number of local public services is increased, especially due to economies of scale. In such cases, it is desirable to identify the factors determining these cost differentials. These estimations can serve for developing a weighted factor formula or for adjusting the per client cost of local service delivery. Unfortunately, no data of cost difference are readily available in the Philippines.

Nevertheless, in those cases for which factors attempt to capture the costs of producing local services rather than number of consumers, the assignment of weights requires a different type of reasoning. In general, arriving at particular weight factors in an objective way is a difficult task. One possibility is to take actual expenditures by local government unit in a base year as a measure of its expenditure needs (i.e., the dependent variable), and then to run a regression on those factors considered as relevant in determining cost differentials across jurisdictions.

To estimate an expenditure needs equation, the variables in the same scale must be redefined (a standard normal transformation could be a good alternative), forcing the intercept of the regression to zero. Once all variables are defined in an identical scale, the coefficients of the regression provide a measure of the relative effect that, on average, each factor has on the dependent variable. Of course, it is not guaranteed that the coefficients so obtained would add up to 1; thus, a correction should be made to achieve this condition. Another possibility is to estimate the equation imposing that linear restriction on the estimated coefficients. At any rate, the estimated coefficient then represents the weights by which the factors should enter in the index formula to approximate expenditure needs.

APPENDIX 2

ALTERNATIVE APPROACHES TO MEASURING EXPENDITURE NEEDS

The expenditure needs of a jurisdiction may be defined as the funding necessary to cover all expenditure responsibilities assigned to the subnational government at a standard level of service provision. In practice, there are several options to measure differences in expenditure needs across subnational governments. In the following discussion, six methodologies are described, which are presented in order of complexity from the simplest to the most complex.[1]

A. Lagged Expenditure Values

An uncomplicated way to define the expenditure needs of a locality is relying on historical expenditure patterns. Specifically, the available information on expenditure data of the last few years, adjusted by inflation, could be assumed to represent the expenditures needs for each jurisdiction. If local government units (LGUs) have discretion in deciding the amount spent during a period, this method offers a reasonably realistic estimation of expenditure needs, with important advantages like simplicity and minimum information requirements. Unfortunately, under discretion, and particularly if LGUs have access to financial markets, the use of historical data could also provide perverse incentives to the local authorities, because they will eventually learn that increasing expenditures in the present will result in higher equalization transfers in the future.

On the other hand, in the absence of discretion, the actual expenditures of past periods could be determined by the particular financial constraints of the LGUs, which are imposed either by the central government or by the inability to raise revenues locally. In such rather common cases, the historical expenditure patterns reflect undesired differences in revenue-raising ability instead of expenditure needs, and thus they should not be used to estimate the expenditure needs.

To conclude, relying directly on lagged expenditure patterns is not a recommended way to estimate expenditure needs under equalization transfer purposes.

B. Equal per Capita Expenditure Norm

The simplest way to estimate per capita expenditure needs is by taking the average of historical expenditures per capita at a national level. To compute this average, it is first necessary to determine the aggregate level of subnational expenditure needs (SEN), which can be based on adjusted historical data or on the budget forecast, and then to divide this amount by the national population. This simple procedure is advantageous when there is no detailed information about the differences in the per capita needs or cost of provision of local public services across jurisdictions or when there are reasons to believe that those differences are negligible.

The per capita expenditure needs constitute a national norm in this case, and to compute the expenditure needs for each LGU, it is only necessary to multiply this norm by the local population:

[1] See Gomez, Martínez-Vázquez, and Sepúlveda (2007) and Boex and Martínez-Vázquez (2007).

$$EN_i = \frac{SEN}{P_N} \cdot P_i$$

Indeed, the local population is likely the most important variable in determining the total expenditure needs and the cost of public service provision for an LGU, because it directly provides an order of magnitude for the total amount of expenditures that must be incurred. Of course, economies of scale, economies of agglomeration, demographic characteristics of the population, geographical differences of jurisdictions, and other factors can substantially modify the applicability of the national average for each jurisdiction. Thus, the national norm could eventually be adjusted by one or more indexes containing information about differences in relative needs or costs of provision. If the index is a good approximation to the relative needs and costs of LGUs, this would clearly be an improvement. In any case, it is necessary to take into account the higher complexity that comes with the gain in accuracy.

C. Per Client (Top-Down) Financial Expenditure Norms

This methodology follows a similar structure than the equal per capita expenditure norm methodology but improves the estimation of the expenditure needs by using more detailed information about the expenditure functions assigned to the LGUs, and devising a local government functional allocation in a top-down manner. Its procedure can be summarized as follows.

Step 1: Determine the aggregate level of subnational expenditure needs (SEN) and the aggregate level of expenditures needs per function j of subnational governments (SEN_j). As mentioned previously, subnational expenditure needs can be based on adjusted historical data or on the budget forecast. The same is true for functional expenditure needs, which must refer to the expenditure responsibilities assigned by law to LGUs. Alternatively, the functional budget forecast can incorporate adjustments responding to changes in expenditure priorities, but in the overall the adjustments must balance to fit the subnational expenditure needs.

Step 2: Compute the per client expenditure norm for each function j, dividing SEN_j by the number of clients or users that the function j has at a national level, C_j. For instance, if referring to the subnational expenditures in secondary education, then the number of secondary students in the country becomes the number of clients, and the norm is obtained by dividing SEN_j by this number.

It is clear that this method requires the existence of demographic data for all jurisdictions, as well as a functional classification of expenditures that is not always available for subnational governments. In this context, some gains in feasibility can be obtained by simplifying the procedure, either considering only the most important subnational functions, or by grouping the functions that have the same type of clients. For instance, if the administrative costs cannot be assigned to specific functions, and there are also some rather unimportant functions classified as other expenditures, then it will be convenient to add them up and divide the result by the population, which in these particular cases represents a good proxy of the number of clients.

Given a certain number of clients, once the funding envelope for any category has been determined, then the per client norm has been implicitly defined. Accordingly, the amount of money per capita or per client in the norm can be decided in an ad-hoc manner by line

ministries or even stated in the law for several years or changed every year. However, the problem with this approach is that either the norms may not be affordable or may be too little; thus, to ensure the feasibility of the norms, the best practice within this approach is to first subdivide from the top (according to the expenditure priorities of the central authorities) the available funding envelope for LGUs in all of the expenditure functions or categories, as recommended in the first step.

Step 3: Compute the per capita equivalent need of all per client functional norms (determined in step 2) for all jurisdictions. This step is necessary because the formula of fiscal disparities is defined at a jurisdictional level and expressed in per capita units, and so all of the elements to be incorporated must be defined in identical terms. The computation consists of multiplying the per client functional norm defined at the national level (SEN_j/C_j) by the ratio between the number of clients of that function in each locality and its population (C_{ji}/P_i). The reasoning involved is simple. If, for instance, in a certain jurisdiction with a population of nine inhabitants, the number of clients of the function j is three (so the clients correspond to one-third of the population), then a per client need of, for example $6 million, is perfectly equivalent to a per capita need of $2 million (one-third of the per client need) within the jurisdiction.

Either in step 2 or 3, the per capita equivalent need of each category of expenditures can be adjusted upward or downward to reflect differences in the costs of provision across jurisdictions. Again, this must be done in such a way that the overall budget affordability of the norm is not affected.

Step 4: Compute the per capita expenditure need of each jurisdiction j by adding up its per capita equivalent needs for all categories. If considering three functional categories of expenditures (j = 1, 2, or 3), once the SEN_j has been determined as in the first step of the procedure, the three remaining steps can be summarized in the following expression:

$$EN_i = \frac{SEN_1}{C_1}\ \frac{C_{1i}}{P_i} + \frac{SEN_2}{C_2}\ \frac{C_{2i}}{P_i} + \frac{SEN_3}{C_3}\ \frac{C_{3i}}{P_i}$$

Due to several positive features, this methodology constitutes an attractive alternative for the design of an intergovernment transfer system. Because of its structure, the per client financial expenditure norm methodology is able to define feasible national norms that are also flexible enough to be adjusted in response to changes in national public policy, to consider differences in cost provision across jurisdictions, and also to adapt to limited available information. Additionally, the estimation of expenditure needs is explicitly linked with the functions of the subnational governments, which is the correct approach to measuring expenditure needs. Finally, its simplicity contributes to the transparency of the system and the predictability of the amount of transfers to be received by LGUs.

The main drawback of the methodology is its dependence on the selected expenditure norms. A careful, rational determination of the national expenditure norms (or the available funding envelope for each category) is, in this case, crucial for the success of the intergovernment transfer system, because deviations from the actual expenditure needs can importantly affect its equalizing effects. In this regard, the historical averages of per client expenditures by function can provide a natural reference of magnitude, and each expenditure norm can be adjusted upward or downward with caution, considering both the national priorities

and the effects on the available funding envelope, such that the remaining functional norms are underestimated or overestimated.

D. Weighted Indexes of Expenditure Needs

This is, perhaps, the most commonly used approach for estimating expenditure needs.[2] It consists of creating a composite index of expenditure needs, which captures and weighs the factors determining the cost differences in delivering a standard package of local government services across jurisdictions. Such factors include demographic variables reflecting, for example, the special needs of youth and the elderly, other factors such as the level of poverty and unemployment, and differences in the price level or cost of living. The list of criteria entering the index and the weight used need to be carefully assessed and also thoroughly discussed with all stakeholders to ensure that the main causes for substantial differences in the costs of public service delivery across jurisdictions are captured in the index.

The methodology for computing the weighted index and the per capita expenditure needs is conceptually simple, but it requires several steps that are better explained sequentially:

Step 1: Determine the aggregate level of subnational expenditures needs (SEN).

Step 2: Select the variables or factors explaining the cost differences in delivering a standard package of local government services.

Step 3: Compute the indexes representing the relative expenditure need of each and every jurisdiction, for each and every selected variable.

$$r_i^k = F_i^k \,/\, \sum_{i=1}^{n} F_i^k \,,$$

where F_i^k is the value of the variable k for the jurisdiction i, n the number of jurisdictions, and thus r_i^k is the index of relative expenditure need of jurisdiction i according to the values of the variable k.

Step 4: Establish the weights or the relative importance of the selected factors in the determination of expenditure needs, a^k, which are identical for all jurisdictions. This is as follows.

$$\sum_{k=1}^{m} a^k = 1,$$

where m is the number of factors.

Step 5: Compute the composite index of expenditure needs for all jurisdictions i (IEN_i).

[2] This approach is implicitly applied when a weighted-factor mechanism is used for allocating equalization grants. In this case, however, its use is restricted to estimating expenditure needs, while in practice the weighted-factor formulas are usually not transparent in separating expenditure needs from fiscal capacity.

$$IEN_i = \sum_{k=1}^{m} a^k \quad r_i^k$$

Step 6: Compute the expenditure needs for all jurisdictions i.

$$EN_i = IEN_i \cdot SEN$$

The effectiveness of this methodology in estimating expenditure needs depends on the choice of the factors and their weights. Objective choices of factors and weights capturing the variation in expenditure needs can be made by using simple statistical techniques. The factors are those explaining the differences in expenditure needs, and the weights represent the relative contribution of each factor to the overall measure of need. In practice, however, the data required to objectively select the factors and estimate their proper weights are not always available, and these decisions, subject to political pressure, are made in an arbitrary and obscure manner.

LGU officials and parliamentarians have incentives to fight for the inclusion of those factors that favor their own constituencies, or for weighting them more heavily. So, if the analysis is not based on objective information, the political process can easily result in a formula that does not estimate expenditures needs properly. A tendency also exists for policy makers to overdesign the measure of expenditure needs by including too many factors, adding complexity and reducing transparency in the allocation scheme. In reality, the inclusion of more factors does not necessarily represent a gain in accuracy, because they are usually correlated and thus no new information is effectively added.

Therefore, a balance has to be struck between simplicity and transparency, and it is necessary to find factors that equitably reflect the true fiscal need of LGUs. Variables used as factors should more accurately reflect needs, come from an independent source, and be free of manipulation by either central or subnational governments.

E. Traditional (Bottom-up) Physical Expenditure Norms

Expenditure needs can also be measured in a bottom-up manner, by exhaustively costing a standardized basket of LGU services. In addition to the determination of standard levels of public services (national averages or minimum requirements), this approach requires a detailed quantification of the inputs, information about their cost or prices, a description of the production process for all local public goods and services, and explicit procedures for how to cost all aspects of the expenditure responsibilities of subnational governments. The expenditure needs for each LGU are obtained by simply adding up all the costs of delivering the targeted standards associated with the subnational services within the jurisdiction.

Although appealing, the traditional approach is usually unrealistic due to the impossibility of gathering all of the information it requires. Collecting and managing all the information could be very demanding in terms of effort and extremely expensive. Finally, this approach may also be impractical because it can lead to unaffordable estimations of expenditure needs, forcing adjustment downwards of the computed expenditure needs.

These important drawbacks explain why the international practice has consistently moved toward alternative approaches in expenditure needs estimation during the last

decades.[3] In particular, the top-down approach already explained can be regarded as the most adequate and suitable whenever the information available at the subnational level is limited, while other statistically based approaches can provide ideal estimations of local expenditure needs when the data are detailed and abundant enough to do so. One example of the latter approach is the representative expenditure system, methodology that will be explained in the following point.

F. Regression-Based Representative Expenditure System

Among the methodologies presented here for measuring expenditure needs, this is the most sophisticated and complex. It is data-intensive, and thus not suitable to be applied in all countries, but it offers a very good estimation of expenditure needs.

Step 1: Select, among the expenditures responsibilities of subnational governments, those functions or categories that are subject to equalization.

Step 2: Identify the main factors, other than the prices of inputs, determining the cost of providing local services for each of the selected functions. This can be done through a regression analyses in which the explained or dependent variables are the actual expenditures incurred in each function. The explanatory or independent variables are those that explain the differences in the cost of providing public services across jurisdictions. The relevant factors are those that are statistically significant and have a relevant impact in the costs of public service provision.

Step 3: Compute the per capita representative expenditures for each function and each locality by using the coefficients obtained in step 2. The representative expenditures can be interpreted as the amount of money that an LGU would have spent in some category if it had provided the standard level of service.

Step 4: Adjust the per capita representative expenditures by considering the input prices.

Step 5: Add the adjusted per capita representative expenditures of all categories to arrive at the total per capita representative expenditures.

The representative revenue system is technically considered the best approach to estimate expenditure needs, so it can be recommended whenever its application is feasible. However, the procedure is data-intensive, and it is usually not possible, or too expensive, to collect all of the detailed information required for the proper use of this model.

[3] Only a few countries, most of them developed, have the capacity to deal with highly detailed expenditure norms. Examples of countries currently using this bottom-up approach are Denmark, Japan, and the Netherlands.

APPENDIX 3

ALTERNATIVE APPROACHES TO MEASURING FISCAL CAPACITY[1]

The fiscal capacity of a subnational government may be defined as the potential revenues that can be obtained from the tax bases assigned to the subnational government if an average level of effort (by national standards) is applied to those tax bases. Thus, ideally, the measure of fiscal capacity should consider either the size of the tax bases available to subnational governments or the revenue that these tax bases yield under standard tax rates.

A variety of methods are used around the world to measure local government fiscal capacity, four of which are presented here.

A. Lagged Own Revenue Collections

The lagged or historical level of revenue collections constitutes a simple way to define the fiscal capacity of jurisdictions. Unfortunately, using past collections does not satisfactorily address the problem of negative incentives, because subnational governments can discern that higher collections translate into lower transfers and consequently reduce their tax effort to take advantage of the transfer system.

Another problem with this approach is the existence of a difference or gap (sometimes large) between actual and potential collections in any jurisdiction, as well as the fact that the size of these gaps also varies across jurisdictions. There are several causes for these gaps to arise. One cause could be differences in the tax structure or in the definition of the tax base across jurisdictions. For instance, they could compute the taxable income in a different way or have dissimilar criteria for tax exemptions. In both cases, tax collection likely differs between similar jurisdictions, even if their fiscal capacity is identical. Similarly, tax avoidance and tax evasion might affect some local governments more than others, and the ability to overcome these problems, including the costs that must be assumed to improve the compliance rates, may also vary across jurisdictions.

In general, using the actual amount of revenue collections in a jurisdiction as a measure of fiscal capacity should be avoided if local authorities can control tax rates, the tax base, or administrative enforcement effort. In such a case, some local governments would be able to reduce the actual collections (in exchange, for example, of political benefits) and benefit in an undesirable way from the equalization transfer system. This kind of practices could seriously damage the equalizing effects of the program.

Due to these complications, and the similar shortcomings presented by the lagged expenditure values in estimating expenditure needs, the direct application of historical data in estimating the fiscal disparities should, in general, be avoided. As an alternative, the same as in the case of expenditure needs estimation, simple manipulation of the available historical data can serve to reduce the problems related to perverse incentives and the differences between actual collections and true fiscal capacity. The following methodology is an example of this strategy.

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[1] See again Gomez, Martínez-Vázquez, and Sepúlveda (2007) and Boex and Martínez-Vázquez (2007).

B. Average of Past Collection Ratios

To reduce the problems related to the use of lagged own revenue collections in estimating fiscal capacity, some slight manipulations of historical collection can provide effective and straightforward solutions.

The present methodology consists of computing the ratio between local per capita revenues and the per capita revenues at the national level for several years, and then obtaining an average of these ratios for each jurisdiction, which indicates the relative size of local per capita collections with respect to the national standard in a period of several years. Thus, a single estimator of relative fiscal capacity is obtained for each jurisdiction and considers only historical collection data. There are important potential advantages in using historical data in this indirect way. The complete procedure can be summarized in the following six steps.

Step 1: Select, among all sources of revenues, those that can be used to represent the fiscal capacity of local governments. If fiscal capacity is understood as the revenues that a local government unit (LGU) raises by applying standard tax rates to their tax bases, then it is natural to consider the own taxes applied by the LGU within its jurisdiction as the most important source of revenue. However, since what matters is to measure the ability of an LGU to cover its expenditure needs, it is also necessary to include those received as revenue sharing from the central government and all intergovernment transfers exempting only equalization transfers. Again, to avoid undesirable manipulation, it is appropriate that no discretion is allowed by central or local government officials in the determination of the tax rates or the composition of the tax base on these sources of revenue.

Step 2: Define the historical periods that can serve better as a reference for estimating future fiscal capacity. The more periods considered, the lower the possibility of undesirable manipulation of the index created for estimating future fiscal capacity. However, the use of very old collection data can be misleading if many changes have taken place in the collection patterns of LGUs during the last years. For these reasons, periods of 3, 4, or 5 years, depending on data availability and current relevancy of the information, could be a plausible choice.

Step 3: Compute the per capita revenue for each jurisdiction i and for each period t (R_{jt}), as well as the per capita revenue at a national level for every year (R_{Nt}). Defining P_{it} and P_{Nt} as the population in jurisdiction i and the national population in period t, then the per capita revenues for each revenue source j, jurisdiction i and period t are defined as

$$R_{ijt} = \frac{revenues\ for\ i, from\ source\ j_t}{P_{it}}, \text{ and } R_{Njt} = \frac{total\ revenues, source\ j_t}{P_{Nt}}.$$

Furthermore, the total per capita revenues at jurisdictional and national level in each period are given by $R_{it} = \sum_j R_{ijt}$ and $R_{Nt} = \sum_j R_{Njt}$, respectively.

Step 4: Compute the relative collection ratios, for every jurisdiction i and period t (RCR_{it}), which are obtained for every year by dividing the per capita revenues of jurisdiction i by the national per capita revenues: $RCR_{it} = R_{it} / R_{Nt}$**.** The relative collection ratios can be lower, equal, or higher than 1, meaning that the jurisdiction have collected less, the same, or more per capita revenues than the country as a whole during a certain year.

Step 5: Compute the index of relative collection for each jurisdiction (IRC_i), as the average of all relative collection ratios of the jurisdiction. Defining T as the number of periods selected for the estimation, then $IRC_i = \sum_t RCR_{i\,t} \Big/ T$. The index of relative collection has exactly the same interpretation than the relative collection ratios, but it refers to a longer period of time. This last characteristic helps moderate the perverse incentives associated with the benefits of reducing tax collections, because now, if an LGU wants to increase the amount of future transfers, it must modify a multiyear average instead of a single-year result. Indeed, the expected benefits of reducing the local tax collections are decreased in proportion to the number of periods used in the computation of the average, so the perverse incentives are directly reduced as well. Additionally, if the local government officials are not sure whether they will remain in their positions during the following years, then the idea of beneficiating competing political parties in the future can also discourage that behavior. If present, this "democratic factor" could eventually increase the effectiveness of this methodology.

Step 6: Estimate the per capita fiscal capacity for all jurisdictions as

$$FC_i = IRC_i \cdot Aggregate\ Revenue\ Forecast$$

This estimation of fiscal capacity can be interpreted as the fiscal capacity that the LGU i would have in the forecasted period if the average tax collection at the local and national level remains unchanged and the macroeconomic expectations are fulfilled.

C. Basic Proxies for the Local Ability to Tax

A different approach to estimating the fiscal capacity of subnational governments is by considering proxies or variables that in theory should be highly correlated with their ability to collect revenues. A widely used variable is the per capita level of personal income, which tends to be a good proxy and is usually available. Another commonly used variable is the gross regional product (GRP), which is the subnational equivalent of gross domestic product and can also serve as a proxy of fiscal capacity. GRP is actually a more comprehensive measure of fiscal capacity than per capita income, because it includes all the income generated within a region, personal and corporate, irrespective of the location of residence of the worker or producer.

To improve the estimation of fiscal capacity, it is also possible to exclude from the GRP certain items such as central taxes and transfers, which are not part of the potential tax base. The resulting modified version of the GRP is referred as total taxable resources, and it constitutes a good estimator of fiscal capacity.

D. Representative Revenue System

The basic idea underlying the representative revenue system is to calculate the amount of revenue that a region would collect if it is to exert average fiscal effort. This is done by collecting data on revenue collections and tax bases for each tax under consideration and for every subnational region. Based upon information on all tax bases for every region as well as the national average fiscal effort for each of the taxes, one can compute the amount of revenues that each jurisdiction would collect under average fiscal effort. This amount is then considered to quantify the fiscal capacity of each jurisdiction.

The representative revenue system is a thorough, complete method to measure the fiscal capacity of a region. It is based on disaggregated data and detailed knowledge of the statutory tax bases, taking into account variations in effective tax rates among various tax components and nontax revenue sources. As a result, fiscal capacity as measured by the system can be considered as an accurate representation of a region's true fiscal capacity. However, due to the disaggregated nature of the information, the measure is data-intensive and is not always possible to use.

APPENDIX 4

COMPUTATION OF PER CAPITA FISCAL EQUITY AND EXPENDITURE PERFORMANCE FUND TRANSFERS BY ADJUSTED WEIGHTED INDEX FORMULA IN THE INTERNAL REVENUE ALLOTMENT FOR PROVINCES

Region	Province	Population 2008	Land Area 2008	Young Population	Elderly Population	Poverty Population	Fiscal Capacity	Proportion of Population	Proportion of Land Area	Proportion of Young Population	Proportion of Elderly Population	Proportion of Poverty Population	Relative Fiscal Capacity	Weighted Index (%)	FEEP Transfer per Capita (P)
		(1)	(2)	(3)	(4)	(5)	(6)[a]	(7) = (1)/sum(1)	(8) = (2)/sum(2)	(9) = (3)/sum(3)	(10) = (4)/sum(4)	(11) = (5)/sum(5)	(12)[b]	(13)[c]	(14)[d]
Region I	Ilocos Norte	547,284	3,504.30	54,789	39,055	11,923	1,178.15	0.0080	0.0108	0.0065	0.0129	0.0032	0.0127	0.0093	261.41
Region I	Ilocos Sur	633,138	2,595.96	65,759	45,106	17,238	989.65	0.0092	0.0080	0.0078	0.0149	0.0046	0.0130	0.0100	242.71
Region I	La Union	720,972	1,503.75	75,822	42,327	35,618	818.88	0.0105	0.0046	0.0090	0.0140	0.0094	0.0132	0.0107	227.66
Region I	Pangasinan	2.65E+06	5,451.01	307,465	138,257	114,400	632.97	0.0386	0.0167	0.0364	0.0456	0.0303	0.0134	0.0298	172.97
CAR	Abra	230,953	4,198.20	26,739	15,529	15,182	2,438.18	0.0034	0.0129	0.0032	0.0051	0.0040	0.0111	0.0065	431.31
CAR	Apayao	103,633	4,351.23	12,865	4,663	8,463	3,853.51	0.0015	0.0134	0.0015	0.0015	0.0022	0.0093	0.0047	700.67
CAR	Benguet	372,533	2,769.08	41,508	14,639	5,992	1,909.24	0.0054	0.0085	0.0049	0.0048	0.0016	0.0118	0.0068	282.04
CAR	Ifugao	180,815	2,628.21	21,008	8,012	7,716	2,195.43	0.0026	0.0081	0.0025	0.0026	0.0020	0.0114	0.0053	451.08
CAR	Kalinga	182,326	3,231.25	22,948	8,092	7,314	2,066.59	0.0027	0.0099	0.0027	0.0027	0.0019	0.0116	0.0056	468.36
CAR	Mt. Province	148,661	2,157.38	18,489	9,467	10,280	2,325.84	0.0022	0.0066	0.0022	0.0031	0.0027	0.0113	0.0050	521.29

CAR = Cordillera Autonomous Region, FEEP = Fiscal Equity and Expenditure Performance Fund.

[a] Fiscal capacity is computed by the average of past collection ratios method (FC1).

[b] (12) = [max(12)–(12)]/{N*[max(12)–average(12)]}, where N is the number of provinces.

[c] (13) = 0.35*(7)+0.1*(8) +0.1*(9)+ 0.1*(10) +0.1*(11) +0.25*(12)

[d] (14) = [(13)*total available FEEP for provinces]/(1)

APPENDIX 5

COMPUTATION OF PER CAPITA EXPENDITURE NEEDS BY EXPENDITURE NORMS (EN1) FOR PROVINCES

		Number of Clients						Equivalent per Capita Need									
Region	Province	Total Population: General Public Service, Economic Services, Debt Servicing, Other Purposes	Population between Age 4–65 Years: Education, Culture, and Sports	Weighted Population: Health, Nutrition, and Population Control	Population between Age 18–65 Years: Labor and Employment	Poverty Population: Housing and Community Development	Population over Age 65 Years: Social Security and Welfare	General Public Services	Education, Culture, and Sports	Health, Nutrition, and Population Control	Labor and Employment	Housing and Community Development	Social Security, Social Services, and Welfare	Economic Services	Debt Servicing	Other Purposes	EN1
Aggregate expenditure (million)								20,953.9	2,315.6	9,033.9	30.2	827.7	973	9,900.8	1,594.4	10,519.2	(7)++…+(15)
Aggregate clients								686,071	575,242.4	206,819.9	360,508.3	37,812.1	30,308.2	686,071	686,071	686,071	
Expenditure norm								305.4	40.3	436.8	0.8	218.9	321.0	144.3	23.2	153.3	
		(1)	(2)	(3)	(4)	(5)	(6)	(7)…(15)=expenditure norm * number of clients/total population									
Region I	Ilocos Norte	547,284	452,289	165,533	310,260	11,923	39,055	305.42	33.27	132.12	0.47	4.77	22.91	144.31	23.24	153.32	819.83
Region I	Ilocos Sur	633,138	520,984	192,889	350,452	17,238	45,106	305.42	33.12	133.07	0.46	5.96	22.87	144.31	23.24	153.32	821.78
Region I	La Union	720,972	601,508	214,821	400,487	35,618	42,327	305.42	33.58	130.15	0.46	10.81	18.85	144.31	23.24	153.32	820.15
Region I	Pangasinan	2.60E+06	2,196,819	795,941	1,395,381	114,400	138,257	305.42	33.43	131.42	0.44	9.47	16.78	144.31	23.24	153.32	817.83
CAR	Abra	230,953	188,026	71,420	121,812	15,182	15,529	305.42	32.77	135.08	0.44	14.39	21.59	144.31	23.24	153.32	830.56
CAR	Apayao	103,633	86,037	31,230	54,473	8,463	4,663	305.42	33.42	131.63	0.44	17.88	14.44	144.31	23.24	153.32	824.10
CAR	Benguet	372,533	314,799	107,877	206,660	5,992	14,639	305.42	34.02	126.49	0.46	3.52	12.62	144.31	23.24	153.32	803.40
CAR	Ifugao	180,815	151,577	53,531	94,155	7,716	8,012	305.42	33.74	129.32	0.44	9.34	14.22	144.31	23.24	153.32	813.36
CAR	Kalinga	182,326	151,058	55,044	92,441	7,314	8,092	305.42	33.35	131.87	0.42	8.78	14.25	144.31	23.24	153.32	814.96
CAR	Mt. Province	148,661	120,283	46,421	73,366	10,280	9,467	305.42	32.57	136.40	0.41	15.14	20.44	144.31	23.24	153.32	831.25

CAR = Cordillera Autonomous Region.

APPENDIX 6

COMPUTATION OF PER CAPITA EXPENDITURE NEEDS BY WEIGHTED INDEX FORMULA (EN2) FOR PROVINCES

Region	Province	Population 2008	Land Area 2008	Young Population	Old Population	Poverty Population	Proportion of Population	Proportion of Land Area	Proportion of Young Population	Proportion of Old Population	Proportion of Poverty Population	Weighted Index (%)	EN2
		(1)	(2)	(3)	(4)	(5)	(6) = (1)/sum(1)	(7) = (2)/sum(2)	(8) = (3)/sum(3)	(9) = (4)/sum(4)	(10) = (5)/sum(5)	(11)[a]	(12)[b]
Region I	Ilocos Norte	547,284	3,504.3	54,789	39,055	11,923	0.0080	0.0108	0.0065	0.0129	0.0032	0.0082	839.77
Region I	Ilocos Sur	633,138	2,595.96	65,759	45,106	17,238	0.0092	0.0080	0.0078	0.0149	0.0046	0.0090	795.71
Region I	La Union	720,972	1,503.75	75,822	42,327	35,618	0.0105	0.0046	0.0090	0.0140	0.0094	0.0098	759.45
Region I	Pangasinan	2.60E+06	5,451.01	307,465	138,257	114,400	0.0386	0.0167	0.0364	0.0456	0.0303	0.0348	738.21
CAR	Abra	230,953	4,198.2	26,739	15,529	15,182	0.0034	0.0129	0.0032	0.0051	0.0040	0.0051	1,246.52
CAR	Apayao	103,633	4,351.23	12,865	4,663	8,463	0.0015	0.0134	0.0015	0.0015	0.0022	0.0034	1,844.61
CAR	Benguet	372,533	2,769.08	41,508	14,639	5,992	0.0054	0.0085	0.0049	0.0048	0.0016	0.0051	775.90
CAR	Ifugao	180,815	2,628.21	21,008	8,012	7,716	0.0026	0.0081	0.0025	0.0026	0.0020	0.0033	1,037.59
CAR	Kalinga	182,326	3,231.25	22,948	8,092	7,314	0.0027	0.0099	0.0027	0.0027	0.0019	0.0037	1,124.21
CAR	Mt. Province	148,661	2,157.38	18,489	9,467	10,280	0.0022	0.0066	0.0022	0.0031	0.0027	0.0031	1,157.96

CAR = Cordillera Autonomous Region.

[a] (11)=0.4*(6)+0.15*(7) +0.15*(8)+ 0.15*(9) +0.15*(10)

[b] (12)=[(11)* aggregate expenditure needs for provinces]/(1)

APPENDIX 7

COMPUTATION OF PER CAPITA FISCAL CAPACITY ACCORDING TO THE AVERAGE OF PAST COLLECTION RATIOS (FC1) FOR PROVINCES

Region	Province	Own Revenues			Total Population	Relative Fiscal Capacity (3-year average)	Estimated Own Revenues	Other Revenues[a]	FC1
		2006	2007	2008					
		(1)	(2)	(3)	(4)	(5) = [(1)/sum(1)+ (2)/sum(2)+(3)/ sum(3)]/3	(6) = (5)* aggregate forecast of total collection	(7)	[(6)+(7)]/(4)
Region I	Ilocos Norte	77,356,752.0	108,695,952.00	92,351,480.0	547,284	0.0107	1.05E+08	539,783,808	1,178.15
Region I	Ilocos Sur	20,831,182.0	41,236,792.00	53,646,624.0	633,138	0.0043	42,399,980	584,188,032	989.65
Region I	La Union	61,574,848.0	61,154,420.00	70,983,048.0	720,972	0.0074	73,129,216	517,261,952	818.88
Region I	Pangasinan	196,064,336.0	277,683,264.00	227,151,808.0	2,645,395	0.0269	2.65E+08	1,409,807,616	632.97
CAR	Abra	23,107,566.0	27,399,410.00	26,263,748.0	230,953	0.0030	29,004,076	534,100,864	2,438.18
CAR	Apayao	2,268,535.5	2,356,469.25	5,290,131.5	103,633	0.0004	3,625,051	395,726,048	3,853.51
CAR	Benguet	147,329,360.0	171,195,008.00	205,977,840.0	372,533	0.0200	1.96E+08	514,814,784	1,909.24
CAR	Ifugao	16,102,927.0	46,683,580.00	87,096,672.0	180,815	0.0055	53,592,896	343,372,960	2,195.43
CAR	Kalinga	15,263,204.0	17,097,756.00	17,325,910.0	182,326	0.0019	18,771,798	358,020,480	2,066.59
CAR	Mt. Province	23,072,496.0	26,786,104.00	31,963,782.0	148,661	0.0031	30,656,818	315,104,256	2,325.84

CAR = Cordillera Autonomous Region.

[a] Other revenues include share from national tax collection, extraordinary receipt aid, loans and borrowing, and interlocal transfers in fiscal year of 2008.

APPENDIX 8

COMPUTATION OF RELATIVE FISCAL GAPS FOR PROVINCES (TAKING FISCAL CAPACITY MEASURE 1 AS AN EXAMPLE)

Region	Province	Per Capita Expenditure Needs by Expenditure Norms (EN1)	Per Capita Fiscal Capacity by Average of Past Collection Ratios (FC1)	Fiscal Gap Measure 1	Relative Fiscal Gap Measure1
		(1)	(2)	(3) = (1)–(2)	(4) = (3)/sum(3)
Region I	Ilocos Norte	819.83	1,178.15	(358.33)	0.01112
Region I	Ilocos Sur	821.78	989.65	(167.87)	0.00521
Region I	La Union	820.15	818.88	1.27	(0.00004)
Region I	Pangasinan	817.83	632.97	184.86	(0.00574)
CAR	Abra	830.56	2,438.18	(1,607.62)	0.04989
CAR	Apayao	824.10	3,853.51	(3,029.41)	0.09401
CAR	Benguet	803.40	1,909.24	(1,105.85)	0.03432
CAR	Ifugao	813.36	2,195.43	(1,382.07)	0.04289
CAR	Kalinga	814.96	2,066.59	(1,251.62)	0.03884
CAR	Mt. Province	831.25	2,325.84	(1,494.58)	0.04638

( ) = negative, CAR = Cordillera Autonomous Region.

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Philippines: Designing a Local Government Enhancement Fund

The main transfer instrument from the central government to local government units (LGUs) in the Philippines, the internal revenue allotment, has been criticized for: its inability to equalize sufficiently, especially regarding the poorer municipalities and provinces, and its funds not having been spent efficiently. For some time, LGUs have petitioned the Government of the Philippines to expand the funding of the IRA. However, there appears to be ample consensus that any additional funding needs to be distributed in a manner that addresses the design flaws of the IRA. In this paper, options for the design of a possible new transfer, the Fiscal Equity and Expenditure Performance Fund, separate from the IRA, are outlined. Such design faces four major challenges: (i) how to define the origin and computation of the additional funding, (ii) how to divide the additional funding among the different groups of LGUs (provinces, cities, municipalities, and *barangays*), (iii) what formula to use for the distribution of the additional funds for qualifying LGUs in each particular group of LGUs, and (iv) how to ensure that LGUs will use the additional funds to improve their service delivery performance. The transfer mechanism suggested as a result offers a bridge toward the eventual review and reform of the IRA.

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