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An Assessment of the Criteria Used in the Determination of Philippine LGU Fiscal Viability

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Abstract

This study examines the fiscal implications of the current criteria of establishing the fiscal viability of local governments in the Philippines. Since the passing of the Local Government Code of 1991 (LGC) thirty years ago, the criteria used to create/convert a local government unit (LGU), i.e. regular local income, population and land area, has remained the same with the exception of the income requirement of cities. As a result of the current distribution of intergovernmental fiscal transfers, both across different levels of and within a level of local government (a portion of the intergovernmental fiscal transfer of an LGU is dependent on the number of same-level LGUs), there exists the incentive for lower level LGUs to want to level up to get a larger share of transfers. From 2001 to present, there were 68 new cities (46.9%), 25 new municipalities (1.7%) and 107 new barangays (0.3%) created.

A possible effect is the creation of LGUs that are unable to fulfill mandates and deliver devolved functions and services. The evidence supports this with fiscal trends showing that provinces and municipalities effectively finance only almost a third of current exenditures while the stipulated requirements for provinces and municipalities covers only about 11% and 1% of total current operating expenditures, respectively.

In public sector literature, this issue is part of the literature in determining the optimal size of government which is basically dependent on the balance between welfare gains from bringing accountability and the provision of local goods and services closer to the citizens versus the cost advantages from serving a larger population at a higher level of government. The practical result has been the over-creation or fragmentation of LGUs in federal and decentralized countries. Some countries such as Canada and France have resorted to giving incentives to local governments that consolidate/amalgamate to improve the efficiency in delivering goods and services. Other solutions have been to create inter-LGU arrangements or special bodies to coordinate goods and services that cross boundaries but still have limited geographic coverage.

This study tests the impact of current fiscal viablity indicators and explores other governance and political economy variables on local revenues and expenditures. Using unique cross-section data from a survey of municipal development planning practices, the results show that population, land area, poverty incidence, LGU income classification are robust estimators for local revenues. Among the governance indicators used, such as the presence of an updated schedule of market value (SMV) and the number of years in office of the mayor, receiving the Seal of Good Local Governance (SGLG) award is the only significant one. For local government expenditures, population, land area, LGU income as well as the presence of the SGLG and an updated SMV are all signficant. These results seem to suggest that the current criteria are still relevant but the rest of the paper argues that minimum LGU income must be increased for provinces and municipalities, and perhaps impose an LGU income requirement for barangays.

Keywords: fiscal sustainability, devolved basic services, internal revenue allotments, national tax allotments

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Charlotte Justine Diokno-Sicat and Vicente B. Paqueo[1]

1. Introduction

1.1. Rationale and Relevance

In the decentralized Philippines, local government creation or conversion (from one level to another level) depends on three (3) factors: (1) local government unit (LGU) income (which includes locally raised revenues and intergovernmental fiscal grants); (2) population; and, (3) land area (Local Government Code of 1991 (LGC), Sec. 7). Specific qualifications for income and land area are that: "it (income) must be sufficient, based on acceptable standards, to provide for all essential government facilities and services and special functions commensurate with the size of its population" and "sufficient (land area that is contiguous unless comprised of two or more islands and properly identified by metes and bounds with technical descriptions) to provide for such basic services and facilities to meet the requirements of its populace." The ability to sufficiently provide services to LGU constituents is explicitly mandated and vital in allowing the creation or conversion of an LGU.

The current state of varied local government development after 30 years of decentralization shows cause to revisit the criteria in establishing LGUs. This is because evidence has shown that there are factors other than income, population and land that affect the delivery of local goods and services and LGU performance. In addition, many lower level LGUs want to convert to a higher level in order to receive larger intergovernmental fiscal grants. In the past decade, there were 1,323 LGU changes with 94% for barangays (newly created (16), division of (12) and transferring (1,221); 2.5% for the transfer of 33 municipalities; 2.6% for either the creation of (7) or transfer (28) of cities, the remaining changes were the transfer of 4 provinces.

Since 2019, national government oversight agencies such as the National Economic Development Authority and the Senate of the Philippines have expressed the need for a study on the fiscal viability of LGUs. In recent talks at the Department of the Interior and Local Government (DILG) on the devolution transition plan, owing to the Mandanas Supreme Court ruling, such a call was also made by the Local Government Academy. Though these oversight agencies may have different uses for such a study, the common question was how to be efficient and effective in creating local governments that are capable of delivering basic services for the local government as mandated in the LGC.

In the 2022 National Expenditure Program, the Allocations for Local Government Units (ALGU) totals PhP 1,1116.4 billion. Of this, the National Tax Allotment[2] is PhP 959 billion representing an increase in intergovernmental fiscal transfer by PhP 271.8 billion (over the FY 2021 level) because of the implementation of the Mandanas-Garcia Supreme Court ruling.[3]

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[2] Formerly known as the Internal Revenue Allotment (IRA).

[3] This ruling effectively broadened the tax base on which to compute the Internal Revenue Allotment (IRA) now to be known as National Tax Allotment (NTA).

Because of the 32 % increase in NTA, total ALGU is 22% of the proposed FY2022 national budget.

Historically, these transfers have been the main source of local government income but at the same time have not been fully utilized for certain earmarked purposes such as the mandated local development fund (Diokno-Sicat et.al. 2020). These two fiscal trends have affected economic growth and development across LGUs.

With the forthcoming increases in intergovernmental fiscal transfers and given varied development across LGUs, it is important to examine if there is a need to improve the criteria for the creation of new or conversion of LGUs to a higher level of government. If yes, how can the criteria be improved? This entails examining if and how the current criteria to establish LGUs impact the ability of local governments to deliver devolved basic services. In an effort to strengthen decentralization, how can determining the (fiscal) viability of Philippine local government units be improved?

The expected outcome of this study contributes to pursuing the Philippine Development Plan (PDP) 2017-2022 goals of "Enhancing the Social Fabric (Malasakit)" of Ensuring People-Centered, Clean, and Efficient Governance and "Foundations for Sustainable Development" of Accelerating Infrastructure Development.

1.2. Policy Question and Objectives of the Study

This study aims to propose revisions in the current framework and/or criteria used to determine fiscal viability, and therefore, the creation and conversion of LGUs. The overall policy question is: Is there a need to redefine fiscal viability, particularly to establish or abolish, LGUs in the Philippines? To answer this, we have to first answer:

1. How does the Philippine define a fiscally viable LGU?
2. How has this affected the delivery of devolved goods and services?
3. Are there any possible criteria/ways to determine LGU viability?

The main objective of this study is to determine if the current manner of assessing fiscal viability of LGUs in the Philippines can be improved. To do this the study will

- Examine how the fiscal viability of local governments is defined in the Philippines and in the rest of the world.
- Establish evidence that there are inefficiencies associated with the current manner by which LGUs are created.
- Explore other indicators and/or criteria, or adjustments in current criteria that could be used to establish LGUs.

2. Fiscal Viability of Local Governments

2.1. What is Fiscal Viability?

The fiscal viability of local governments is defined and interpreted in the literature in different ways and often interchanged with fiscal sustainability. Generally, both of these definitions deal with the ability of a local government to provide local goods and services and in practice, differ at the point of time of assessment which is the creation of a new LGU in the case of viability (Sjolquist 1996; Boex, et al. 2004).

The more commonly studied fiscal sustainability has been defined in several ways focusing primarily on the capacity of governments to sustain (in most cases debt) financing of operations (Morgan & Trinh 2016). Fiscal sustainability:

- Is the ability of a jurisdiction to provide its assigned services and meet its commitments in the short, medium, and long run (International Public Sector Accounting Standards Board, IPSASB 2008). The three dimensions of fiscal sustainability being: fiscal capacity, service capacity, and vulnerability.
- Is a council's ability to manage "expected financial requirements and financial risks and shocks over the long term without the use of disruptive revenue and expenditure measures" (PWC [2006: 95] as cited in Dollery and Grant [2011: 38]).
- Is "the long-run capability of a government to consistently meet its financial responsibilities." (Chapman 2008: 115)
- is when a jurisdiction's budget (i) allows the government to maintain its current level of provision of public goods/services without changes in taxes and other revenues, and (ii) the ratio of a jurisdiction's public equity (net assets) to its "production potential" is constant over time (Hagist and Vatter 2009).

Though fiscal sustainability is critical for the success of an LGU, this study focuses on the narrower concept of fiscal viability. Distinguishing it from sustainability, fiscal viability is determined at the point in time when the assessment to create or convert a local government. For example, a local government can be created if it is assessed that it can finance a certain level of goods and services.

2.2. How is Fiscal Viability of LGUs in the Philippines determined?

How are local governments created/merged/abolished in the Philippines? How is fiscal viability of LGUs defined? According to Rule II of Article 6 of the Administrative Order No. 270 (A.O. 270) Prescribing the Implementing Rules and Regulations of the LGC of 1991:

> "An LGU may be created, converted, divided, merged, abolished, or its boundaries substantially altered either by Act of Congress, in the case of a province, city, municipality, or any other political subdivision, or by ordinance passed by the sangguniang panlalawigan or sangguniang panlungsod concerned, in the case of a barangay located within its territorial jurisdiction, subject to such limitations and requirements prescribed in this Rule.
>
> Notwithstanding the population requirement, the Congress may create barangays in indigenous cultural communities to enhance the delivery of basic services in said areas and in the municipalities within the Metropolitan Manila Area (MMA)." (Article 6a)

That is, the two ways and LGU can be created/merged/abolished are through an Act of Congress or, in the case of a barangay, either an Act of Congress or by a local ordinance.[4]

The specific conditions stipulated in the Local Government Code of the Philippines of 1991 (LGC) for creating local governments are summarized in Table 1 below:

[4] However, a barangay created by a local ordinance (not an Act of Congress) is not eligible for a share of the intergovernmental fiscal transfer to be known in 2022 as the National Tax Allotment (NTA). [Cite???]

Table 1. Criteria for LGU creation

LGU	Requirements for creation
Provinces (Sec. 461)	(a) A province may be created if it has an average annual income, as certified by the Department of Finance, of not less than Twenty million pesos (Php20,000,000.00) based on 1991 constant prices and either of the following requisites: (i) a contiguous territory of at least two thousand (2,000) square kilometers, as certified by the Lands Management Bureau; or, (ii) a population of not less than two hundred fifty thousand (250,000) inhabitants as certified by the National Statistics Office: Provided, That, the creation thereof shall not reduce the land area, population, and income of the original unit or units at the time of said creation to less than the minimum requirements prescribed herein. (b) The territory need not be contiguous if it comprises two (2) or more islands or is separated by a chartered city or cities which do not contribute to the income of the province. (c) The average annual income shall include the income accruing to the general fund, exclusive of special funds, trust funds, transfers, and non-recurring income.
Cities (Sec. 450)[5]	(a) A municipality or a cluster of Barangays may be converted into a component city if it has an average annual income, as certified by the Department of Finance, of at least Twenty million pesos (Php20,000,000.00) for the last two (2) consecutive years based on 1991 constant prices, and if it has either of the following requisites: (i) a contiguous territory of at least one hundred (100) square kilometers, as certified by the Lands Management Bureau; or, (ii) a population of not less than one hundred fifty thousand (150,000) inhabitants, as certified by the National Statistics Office: Provided, That, the creation thereof shall not reduce the land area, population, and income of the original unit or units at the time of said creation to less than the minimum requirements prescribed herein. (b) The territorial jurisdiction of a newly-created city shall be properly identified by metes and bounds. The requirement on land area shall not apply where the city proposed to be created is composed of one (1) or more islands. The territory need not be contiguous if it comprises two (2) or more islands. (c) The average annual income shall include the income accruing to the general fund, exclusive of special funds, transfers, and non-recurring income.
Highly Urbanized Cities (Sec 452)	(a) Cities with a minimum population of two hundred thousand (200,000) inhabitants, as certified by the National Statistics Office, and

[5] This was subsequently revised in Republic Act No. 9009 (2001), An Act amending Section 450 of Republic Act No. 7160, otherwise known as the Local Government Code of 1991, by increasing the average annual income requirement for a municipality or cluster of barangays to be converted into a component city, from the requirement of PhP 20 Million (in 1991 prices) to PhP 100 Million (in 2000 prices).

LGU	Requirements for creation
	with the latest annual income of at least Fifty Million Pesos (Php50,000,000.00) based on 1991 constant prices, as certified by the city treasurer, shall be classified as highly urbanized cities. (b) Cities which do not meet the above requirements shall be considered component cities of the province in which they are geographically located. If a component city is located within the boundaries of two (2) or more provinces, such city shall be considered a component of the province of which it used to be a municipality. (c) Qualified voters of highly urbanized cities shall remain excluded from voting for elective provincial officials. Unless otherwise provided in the Constitution or this Code, qualified voters of independent component cities shall be governed by their respective charters, as amended, on the participation of voters in provincial elections. Qualified voters of cities who acquired the right to vote for elective provincial officials prior to the classification of said cities as highly-urbanized after the ratification of the Constitution and before the effectivity of this Code, shall continue to exercise such right.
Municipalities (Sec. 442)	(a) A municipality may be created if it has an average annual income, as certified by the provincial treasurer, of at least Two million five hundred thousand pesos (Php 2,500,000.00) for the last two (2) consecutive years based on the 1991 constant prices; • a population of at least twenty-five thousand (25,000) inhabitants as certified by the National Statistics Office; and • a contiguous territory of at least fifty (50) square kilometers as certified by the Lands Management Bureau: Provided, that the creation thereof shall not reduce the land area, population or income of the original municipality or municipalities at the time of said creation to less than the minimum requirements prescribed herein. (b.) The territorial jurisdiction of a newly-created municipality shall be properly identified by metes and bounds. The requirement on land area shall not apply where the municipality proposed to be created is composed of one (1) or more islands. The territory need not be contiguous if it comprises two (2) or more islands. (c) The average annual income shall include the income accruing to the general fund of the municipality concerned, exclusive of special funds, transfers and non-recurring income. (d) Municipalities existing as of the date of the effectivity of this Code shall continue to exist and operate as such. Existing municipal districts organized pursuant to presidential issuances or executive orders and which have their respective set of elective municipal officials holding office at the time of the effectivity of this Code shall henceforth be considered as regular municipalities.

Source: LGC of 1991

These verifiable indicators of viability and projected capacity to provide services are stipulated in the common provisions of A.O. No. 270 summarized below:

Table 2. Verifiable indicators of viability and projected capacity to provide services for the creation, division or merger or abolition of LGUs

Verifiable indicators of viability and projected capacity to provide services	Creation or Conversion	Division or merger	Abolition
LGU Income[6] (Article 6)	"must be sufficient, based on acceptable standards, to provide for all essential government facilities and services and special functions commensurate to the size of its population, as expected of the LGU. The income shall be based on 1991 constant prices, as determined by the Department of Finance (DOF)" (Article 6b)	"shall comply with the same requirements for their creation. Such division or merger shall not reduce the income, population, or land area of the original LGU or LGUs to less than the prescribed minimum requirements and that their income classification shall not fall below their current income classification prior to the division or merger (DOF)" (Article 6b)	"when its income has been irreversibly reduced during the immediately preceding three (3) consecutive years to less than the requirements for its creation, as certified by DOF, in the case of income" (Article 6d)
Population (Article 6)	"shall be the total number of inhabitants within the territorial jurisdiction of the LGU." (Article 6b)	"shall comply with the same requirements for their creation. Such division or merger shall not reduce the income, population, or land area of the original LGU or LGUs to less than the prescribed minimum requirements and that their income classification shall not fall below their current income classification prior to the division or merger (DOF)" (Article 6b)	"when its population has been irreversibly reduced during the immediately preceding three (3) consecutive years to less than the requirements for its creation, as certified by NSO, in the case of population" (Article 6d)
Land Area (Article 6)	"must be contiguous, unless it comprises two (2) or more islands or is	"shall comply with the same requirements for their creation. Such	"when its population has been irreversibly reduced during the

[6] The annual average LGU income is defined in RA 9009 as the income accruing to the general fund, exclusive of special funds, transfers and non-recurring income. According to the BLGF, Total General Fund is the sum of (1) Total Income-Local Sources; and, (2) Total Income/Receipts from External Sources.

Verifiable indicators of viability and projected capacity to provide services	Creation or Conversion	Division or merger	Abolition
	separated by an LGU independent of the others; properly identified by metes and bounds with technical descriptions; and sufficient to provide for such basic services and facilities to meet the requirements of its populace."(Article 6b)	division or merger shall not reduce the income, population, or land area of the original LGU or LGUs to less than the prescribed minimum requirements and that their income classification shall not fall below their current income classification prior to the division or merger (DOF)" (Article 6b)	immediately preceding three (3) consecutive years to less than the requirements for its creation, as certified by LMB, in the case of land area." (Article 6d)

Source: Administrative Order No. 270

Common across the requirements for fiscal viability across the different levels of LGUs are the three criteria: (1) LGU annual average regular income, population and land area (Table 3). Therefore, an LGU is defined to be viable and deemed capable in delivering devolved basic services if it has sufficient income, population and land area.[7]

Table 3. Comparative table of requirements for creating an LGU

Requirement (include Sec./Art. Of IRR)	Provinces	Cities		Municipalities	Barangays
		ICCs	HUCs		
Income	"An average annual income of not less than Twenty Million Pesos (P20,000,000.00) for the immediately preceding two (2) consecutive years based on 1991 constant prices, as certified by DOF. The average annual income shall include the income accruing to the general fund, exclusive of special funds, special accounts, transfers, and nonrecurring	"An average annual income of not less than Twenty Million Pesos (P20,000,000.00), for the immediately preceding two (2) consecutive years based on 1991 constant prices, as certified by DOF. The average annual income shall include the income accruing to the general fund, exclusive of special funds, special accounts, transfers, and nonrecurring income" (Article 11a)	**Conversion of ICC to HUC** "Latest annual income of not less than Fifty Million Pesos (P50,000,000.00) based on 1991 constant prices, as certified by the city treasurer. The annual income shall include the income accruing to the general fund, exclusive of special funds, transfers, and non-recurring income" (Article 12a)	"An average annual income of not less than Two Million Five Hundred Thousand Pesos (P2,500,000.00), for the immediately preceding two (2) consecutive years based on 1991 constant prices, as certified by the provincial treasurer. The average annual income shall include the income accruing to the general fund, exclusive of special funds,	

[7] It is interesting to note that population and land areas are used to determine the amount of intergovernmental fiscal grants that LGUs receive, which becomes part of LGU income.

Requirement (include Sec./Art. Of IRR)	Provinces	Cities		Municipalities	Barangays
		ICCs	HUCs		
	income" (Article 9a)			special accounts, transfers, and nonrecurring income" (Article 13a)	
Population	"Population which shall not be less than two hundred fifty thousand (250,000) inhabitants, as certified by NSO" (Article 9a)	"Population which shall not be less than one hundred fifty thousand (150,000) inhabitants, as certified by the NSO" (Article 11a)	"Shall not be less than two hundred thousand (200,000) inhabitants, as certified by NSO." (Article 12a)	"Shall not be less than twenty-five thousand (25,000) inhabitants, as certified by NSO" (Article 13a)	"Shall not be less than two thousand (2,000) inhabitants, except in municipalities and cities within MMA and other metropolitan political subdivisions as may be created by law, or in highly-urbanized cities where such territory shall have a population of at least five thousand (5,000) inhabitants, as certified by NSO. The creation of a barangay shall not reduce the population of the original barangay or barangays to less than the prescribed minimum." (Article 14d)
Land area	OR "Land area which must be contiguous with an area of at least two thousand (2,000) square kilometers, as certified by LMB. The territory need not be contiguous if it comprises two (2) or more islands or is separated by a chartered city or cities which do not contribute to the income of the province. The land area requirement shall not apply	OR "Land area which must be contiguous with an area of at least one hundred (100) square kilometers, as certified by LMB. The territory need not be contiguous if it comprises two (2) or more islands or is separated by a chartered city or cities which do not contribute to the income of the province. The land area requirement shall not apply where the		"Must be contiguous with an area of at least fifty (50) square kilometers, as certified by LMB. The territory need not be contiguous if it comprises two (2) or more islands. The requirement on land area shall not apply where the proposed municipality is composed of one (1) or more islands. The territorial jurisdiction of a	"Must be contiguous, unless comprised by two (2) or more islands. The territorial jurisdiction of a barangay sought to be created shall be properly identified by metes and bounds or by more or less permanent natural boundaries." (Article 14d)

Requirement (include Sec./Art. Of IRR)	Provinces	Cities		Municipalities	Barangays
		ICCs	HUCs		
	where the proposed province is composed of one (1) or more islands. The territorial jurisdiction of a province sought to be created shall be properly identified by metes and bounds." (Article 9b)	proposed city is composed of one (1) or more islands. The territorial jurisdiction of a city sought to be created shall be properly identified by metes and bounds." (Article 11a)		municipality sought to be created shall be properly identified by metes and bounds. (Article 13a)	

Source: Administrative Order No. 270. LGC Implementing Rules and Guidelines

2.3. Have these criteria been sufficient/enough to ensure provide for all essential government facilities and services?

The Local Government Code of 1991 declaration of policy states, "...territorial and political subdivisions of the State shall enjoy genuine and meaningful local autonomy to enable them to attain their fullest development as self-reliant communities and make them effective partners in the attainment of national goals," (LGC 1991, Sec. 2). Furthermore, the specific indicators of viability and projected capacity to provide services stipulated in the LGC IRR/AO 270 are presumably sufficient to ensure that the LGU can, "provide for all essential government facilities and services and special functions commensurate to the size of its population."[8] Literature also suggests that a local government would be deemed as self-reliant or feasible if it can raise enough revenues to finance its expenditures (Boex, et al. 2004). However, in the Philippines, most local governments are far from becoming self-reliant (i.e. can finance expenditures through local source revenues only) since intergovernmental fiscal grants have been the primary source of LGU income, averaging about 66.5% of local government income in the past decade (Diokno-Sicat et al. 2020).

With the income available, LGUs are expected to provide the devolved basic services in Table 4. In practice, the specific devolved goods and services vary across levels of local governments (Annex A). Provinces are responsible for local infrastructure and services that have spillover effects across their municipalities and component cities such as roads, information systems, social welfare and health services and enforcement of pollution and forestry laws to name a few. Municipalities are responsible for local goods and services that more directly impact citizens of their jurisdictions such as for health facilities, water supply, sanitation and solid waste disposal, school buildings and other local infrastructure. This shows that municipalities have a larger responsibility in the actual delivery of devolved goods and services with provinces possibly doing the same but more responsible for general policy direction and enforcement.

However, in almost 30 years of decentralization, the prerequisite income necessary to create the LGU has not seemed to translate in the provision of "all essential government facilities commensurate to the population."[9] Local governments are at different levels of economic

[8] From Chapter II, Section 7, subsection (b) of the Republic Act No. 7160 (Local Government Code of 1991).
[9] From Chapter II, Section 7, subsection (a) of the Republic Act No. 7160 (Local Government Code of 1991).

growth and development because of the varied capacity of LGUs to deliver these services depending on a myriad of fiscal (insufficiency of funds) and governance (weak planning, investment programming and monitoring) factors.

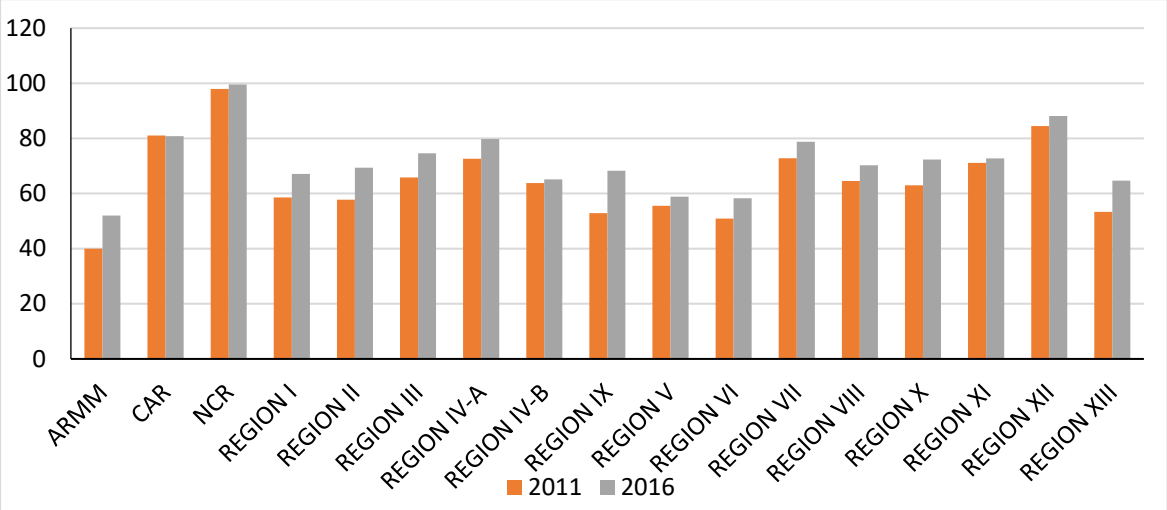
Table 4. LGC Sec. 17 Devolved Basic Services

ECONOMIC SERVICES
Agricultural extension and On-site research
Community based forestry projects
Tourism facilities and tourism promotion and development
Public works and infrastructure projects funded out of local funds
Telecommunication services for provinces and cities
SOCIAL SERVICES
School building program
Field health and hospital services and other tertiary health services
Social welfare services such as programs and projects on rebel returnees and evacuees; relief operations and population development services
Housing projects for provinces and cities such as low-cost housing and other mass dwellings
OTHER SERVICES
Investment support and Industrial research and development

Source: LGC of 1991

Evidence of varied fiscal gaps across regions in devolved infrastructure supports this claim (Velasco, et al. 2020, Diokno-Sicat, et al. 2020). In the case of local water services, there are still areas in the Philippines that do not have access to water and this varies across regions (Figure 1, Velasco et al. 2020). For devolved services such as municipal roads, primary evacuation centers and rural health units, Diokno-Sicat et al. (2020) estimated that, in 2017, municipalities needed a total of P166.9 Billion to close the gap (based on national targets and standards). For rural health units (RHU), there was a gap of 1,638 RHUs with estimated cost ranging from PhP 17.9 to 21.4 Billion in the surveyed municipalities[10]. These devolved infrastructure services have commonly been financed by national government support programs, outside of the LGU budget and IRA (Diokno-Sicat et al. 2020).

Figure 1. Percentage of households with water service, 2011-2016



Source: Author's calculations using data from Cities and Municipalities Competitiveness Index (various years)

[10] The national target for health facilities was to construct one (1) RHU for every 20,000 population. The standard cost of an RHU depends on specifications and whether located in a geographically isolated and disadvantaged area (GIDA) or not.

Local funding for infrastructure comes primarily from the local development fund (LDF) which has been insufficiently utilized in recent years (Commission on Audit 2017). Some reasons identified by COA were poor planning for and monitoring of local development projects. In line with the COA findings, Diokno-Sicat et al. (2020) found that, based on a survey of 1,373 municipalities, only about 36% had updated comprehensive development plans in 2018. In addition, only 31% of these municipalities had updated local development investment programs where development projects (funded by the LDF) are supposed to be selected from. Finally, the survey revealed that only half of municipalities claim to comply with the preparation of the required project briefs which implies that not all investment programs were studied well. These findings corroborate the claim that LGU income is not a sufficient condition to ensure the delivery of devolved functions.

It is because of varied performance of LGUs, as well as the need to enhance service delivery with the implementation of the Mandanas ruling in 2022, that revisiting the manner by which LGUs are established should be done. The anticipated increased IRA in 2022 creates an even larger disincentive for local governments to raise their own revenues. At the same time, the national government is considering discontinuing programs that assist LGUs in these devolved infrastructure areas. Given these possible policy directions, more attention should be paid to the establishment of local governments and their capacity to provide devolved basic services.

Defining viability on the ability to raise revenues would be an aspect to consider but may not perhaps be the only one in the case of the Philippines. On the other hand, estimating the expenditures needed to provide basic devolved services might be a better determinant of the viability of an LGU. This would require first estimating the minimum cost necessary to deliver devolved basic services (maybe focus on a sector like health which is completely devolved) by level of government which is currently being done by LGUs and NGAs in their preparation of the devolution transition plan in line with Executive Order No. 138.

The following section grounds the concept of fiscal viability in the broader issue of determining the optimal size of government and how this is operationalized in the assignment of revenue and expenditure responsibilities to different levels of government. It also presents how, one of the common issues in decentralized or Federal countries, over-fragmentation, i.e., too many levels or number of local governments, impact service delivery and reforms used to address these. Section 4 presents the scope, methodology and data used to examine the effectivity of current criteria used to deem an LGU to be fiscally viable. Section 5 presents the results and 6 general findings and recommendations.

3. Theoretical framework

The section discusses how the question of fiscal viability is part of the broader issue in decentralization which is the optimal size of government. International evidence has shown that this issue has manifested in the fragmentation, in some cases over-fragmentation (through multiple tiers or levels), of local governments in some countries which impacts the ability to deliver local goods and services. Solutions have been to encourage integration or amalgamation of local governments into larger units to be more efficient in-service delivery and also take advantage of economies of scale. Other solutions to fragmentation of LGUs is designing horizontal or vertical cooperation or create special districts or an additional layer of governance to provide for goods and services that cross boundaries.

3.1. Fragmentation and the optimal size of government

One of the seminal articles on the optimal size of government is that of Oates (1972) that proposes the decentralization theorem as follows, "if there are no cost advantages (economies of scale) with centralized provision, then a decentralized pattern of public outputs reflecting differences in tastes across jurisdicattions will be welfare-enhancing as compared to a centralized outcome characterized by a uniform level of output across all jurisdictions (Oates 2008, p. 314)." In other words, this suggests that the creation of a new level of government, one that is closer to the people would be theoretically justified if overall welfare is improved (weighing losses from economies of scale advantages of a higher level of government versus gains from bringing government closer to citizens preferences for transparency, accountability and efficiency in the use of public resources knowing citizen preferences better) by assigning the provision of public goods and services from the central (or other subnational) government to a new/lower level/jurisdiction.

Combining this with another economic theory justifying the assignment of functions or mandates to lower levels of government, Tiebout's "voting-with-the-feet," argues that voters will move to localities that offer the combination of goods and services and taxes they prefer (Stiglitz and Rosengard 2015). By assigning the responsibility for the provision of goods and services to the lowest level of government compatible with the size of the benefit area, otherwise known as the subsidiarity principle, the constituents of this local government are expected to receive the public goods and services they prefer and demand and pay for through local taxes (NZ Local Government Forum 2008; McCormick 2015). The subsidiarity principle is the first of four principles used in practice in determining functional assignments to different levels of government (Bahl and Bird 2018).

The second principle considered in the assignment of responsibilities (and consequently in determining the size of government) to different levels of government is the need to internalize externalities[11] or spillover effects of some public goods and services such as local roads, water service and hospitals for (vertical alignment). Examples of these would be public goods and services that cross geographical boundaries or may be accessed easily by non-residents of a local government. If, for example, non-residents of a local government can easily seek better health services at a public hospital in a neighboring municipality, then maybe a higher level of government should be responsible for its provision. In the case of pollution (a negative externality), if it can be mostly "contained" within the boundaries of a local jurisdiction, then it makes economic sense for the local government (rather than the central government) to address it.

Another example are roads, that are generally purely public by nature, i.e. its' provision tends to be non-rival and non-excludable across communities (Stiglitz and Rosengard 2015). That is, use by one individual does not reduce availability to others and because individuals cannot be excluded from its use or the service could be enjoyed without paying for it, free riding will lead to undersupply, thus making it imperative for government to intervene (NZ Local Government Forum 2008).

Economies of scale in administrative and compliance costs is the third aspect important aspect of determining the assignment of responsibilities across levels of government. There is a trade-off between the optimal size of jurisdictions to deal with externalities and public goods (it is

[11] An externality is when the action of an economic agent unintentionally affects the welfare of another economic agent (Stiglitz and Rosengard 2015).

expected to vary) and economies of scale and scope that arise from the service provision (Oates 1972). The fourth aspect is redistributive and macroeconomic stability which would typically be reserved for the central government.

These four principles commonly guide the assignment of functions across levels of government.

Looking at local revenues, the general principles in tax assignment to local governments are: (1) mobility of factors of production; (2) redistributive and equity purposes; and, (3) administrative costs (Bahl and Bird 2018, Shah 2004). For factors of production, the local government should be responsible for taxation of immobile factors such as land, properties and local businesses. The central government should be responsible for taxation (and subsidies) that are meant to redistribute income to lower income households or citizens. Finally, similar to administrative cost considerations in expenditure assignments, taxes should be assigned to the jurisdiction with the best ability to monitor relevant assessments. This will minimize tax evasion and also take advantage of economies of scale in administration.

Assigning expenditure and taxation responsibilities will determine the number and levels of local governments to be created. The challenge is when the current number of local governments are unable to effectively deliver some assigned goods and services, how should this be corrected?

3.2 International Evidence and Reforms

Decentralized countries vary in their determination of the number of levels of government and reasons such as a historically overcentralized government have been attributed to countries with many levels of government or over-fragmentation. Why is over-fragmentation a concern? Because this might affect the efficiency in delivering public services by not taking advantage of economies of scale for goods that have spillover effects across local government boundaries.

Empirical evidence on fragmentation/size of local governments suggest that higher fragmentation is more costly due to poorer expenditure management, total public sector increases with fiscal decentralization since increased employment at the local level more than offset the declines at the central government level (Martinez-Vazquez and Yao 2009). The inefficiency in delivery of services with an over-fragmented government has led central governments, in recent years, to reconsider organization and structures of levels of government.

"The recent trend where the municipal sector in most developed and developing countries has increased its reliance on own-source funding and reduced its reliance on grants has been accompanied by a renewed interest in municipal structure and organization" (Kitchen et.al. 2019, p. 32). Such organizational reforms include municipal consolidations, amalgamations, and reliance on voluntary arrangements including intermunicipal agreements and/or service boards to improve the overall efficiency of the municipal sector.

Different factors influence municipal amalgamations, consolidations, and restructuring. In general, this is in response to the: a) rapid increase in urbanization, b) additional services passed down from senior levels of government, c) desire of higher levels of government to limit the number of municipalities; and d) need for access to a local tax base that covers a wide geographical area. Cost savings and improved efficiency are often the main motivations for senior levels of government to push for major municipal consolidations and amalgamations.

The senior levels of government offer financial rewards to drive the restructuring of municipalities and offer none should it not take place. For example, a senior level of government may withdraw grants from municipalities that do not restructure or merge such as in Ontario, Canada (Kitchen 2002), or it may offer grants or subsidies to municipalities who merge such as in France (Prud'home 2005).

For a single-tier system, each local government is responsible for all services and has a directly elected governing council. In a two-tier structure, specific services are assigned to different levels of local government though shared responsibilities may also be present. In the two-tier structure, the upper tier may be a county, region, district, or metropolitan level of government. These may also be special-purpose bodies, agencies, or commissions that have the responsibility to provide services which spillover boundaries. Joint-use or intermunicipal agreements may also be used for region- or area-wide services (Kitchen et al. 2019, Appendix Table 1).

Some countries, such as Poland, have multiple-tiered levels of government. The main responsibilities of municipalities in this type of government are spatial planning, infrastructure development (which includes local roads, lighting, bridges, and public transport), utilities, municipal housing, social services, pre- and primary education, environmental protection, basic health care, recreation, and culture. Higher level tiers such as counties and regions have different responsibilities depending on the extent of incidence across the population. Another country that is multi-tiered but still unitary is France. The assigned responsibilities are not as clearly defined and delineated as with Poland but generally assigned based also on region-wide or more communal incidence. (Kitchen et al. 2019).

What reforms have been used to address over-fragmentation? In some countries, municipal amalgamations, consolidations, and restructuring are practiced with a major promise of improving efficiency (Kitchen, et al. 2019). According to some experts this reform generally: (1) improves service delivery because of less bureaucracy; (2) spillovers would be internalized; (3) may lead to greater responsibility and be more streamlined decision-making; and, (4) increases the capacity of local governments to borrow and recover capital (Slack and Bird 2013; Slack 2018; Bahl and Linn 1992, as cited by Kitchen et al. 2019). Incentives have been used in Ontario, Canada, through grants given to smaller lower-tier municipalities willing to undergo restructuring (Kitchen 2002). Similar has been done in the case of France (Prud'home 2005).

In applying these concepts to the current criteria used in establishing, this paper will continue to examine if these.

This issue of over-fragmentation present in other countries, could also be the one of the reasons' behind the inability of some LGUs in the Philippines to deliver devolved basic services. This paper will examine how current criteria of fiscal viability impact local revenues and expenditures. Have these ensured self-reliant LGUs that are able to "provide for all essential government facilities and services and special functions commensurate to the size of its population?" (A.O. 270 1991).[12] Or have these criteria resulted in over-fragmented (excessive number of LGUs) because of how it is implemented (aka outdated LGU income requirements or absence of other important variables)? The hypothesis is that by adjusting the criteria for

[12] From Chapter II, Section 7, subsection (a) of the Republic Act No. 7160 (Local Government Code of 1991).

creation of LGUs like increasing LGU income, this might lead to better ability to deliver public services.

4. Methodology, data and scope

This study adopts a mixed methods approach and regression analysis using a combination of secondary and primary data. Fiscal trends and how current criteria used to establish fiscal viability of LGUs, particularly minimum requirements for LGU income, cover only a small portion of local government expenditures for different levels of LGUs will be shown. To determine the impact of current criteria and explore other determinants of local-source LGU income and expenditures, regression analysis will be applied to cross-section municipal data with 1,338 observations for the year 2017. The dataset is a combination of the results of the survey of development planning practices of these municipalities under the DILG-PIDS Baseline Study on Fiscal and Governance Gaps (2020), the Cities and Municipalities Competitiveness Index (CMCI) of 2017, PSA, BLGF and other government data sources. In addition, because local government viability defined based on the ability of a local government to provide essential devolved services, this study will also determine how the criteria used to establish the fiscal viability of LGUs affect expenditures.

To establish how current criteria impact local revenue raising performance and expenditure determination, regressions will be run using the ordinary least squares method and fiscal and socio-economic data from the DOF BLGF, PSA and DBM for the period 2009 to 2020. Data used are cross section data for the year 2017 (unless otherwise indicated) will be combined with data from 1,338 municipalities gathered from the Baseline Study on Fiscal and Governance Gaps and the City and Municipalities Competitiveness Index database.

The reduced-form equation to be estimated is based on Besley and Case (1995):

$$lnG_i = \beta_0 + \beta_1 population_i + \beta_2 land\ area_i + \beta_3 lnlguincome_i + \beta_4 z_i + u_{it} \quad (1)$$

G_i is either total local revenues or total current operating expenditure in PhP million terms for municipality *i* in 2017. The hypotheses are that population, land area and LGU income or its proxy municipal poverty incidence or LGU income class should (for the first three) be positively associated and (for the last two) negatively associated with local revenues and expenditures. The monetary values are normalized with natural logarithms.

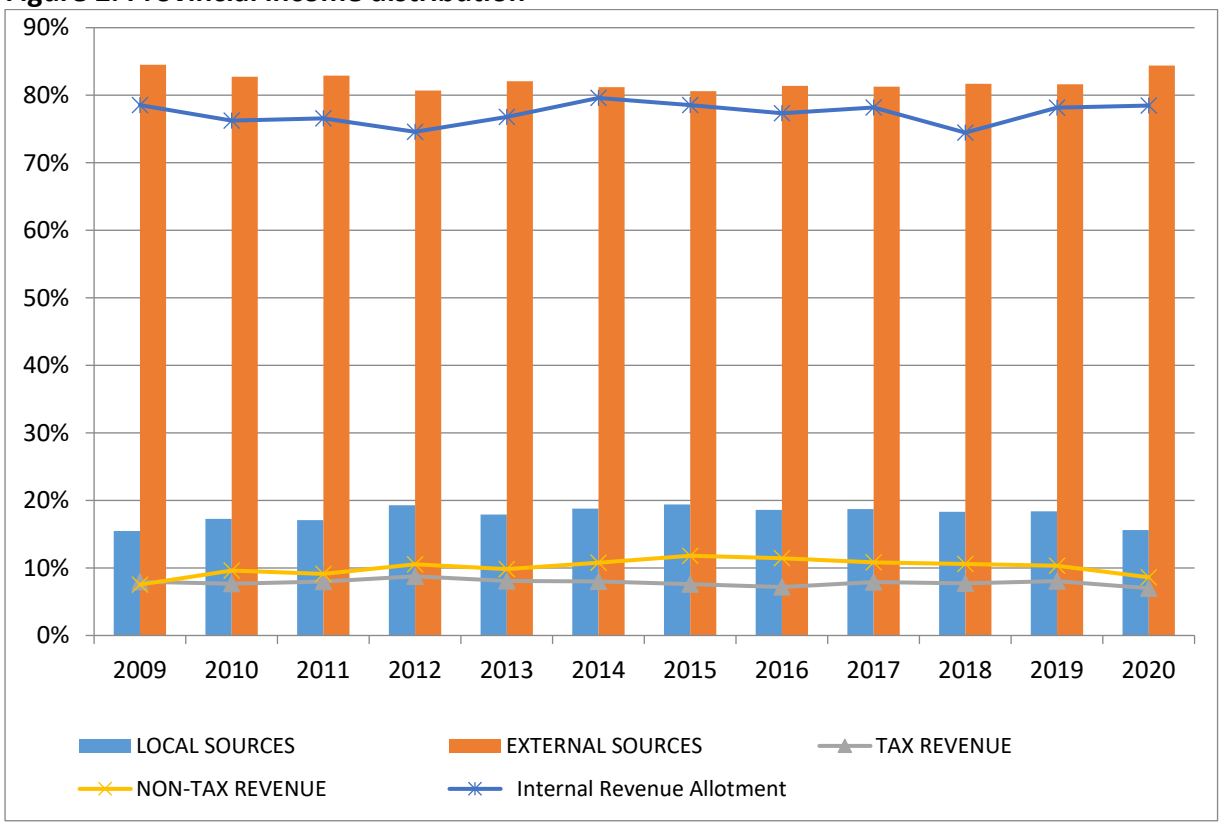
The vector z_i contains other governance and political economy variables such as the presence of updated development plans and investment programs and years of office in office of the incumbent mayor. The former two are expected to be positively related to the dependent variables while negative for the latter. The u_i is the idiosyncratic error.

5. Results and Discussion

5.1. Fiscal capacity to deliver devolved basic services across LGUs: Income and Expenditures

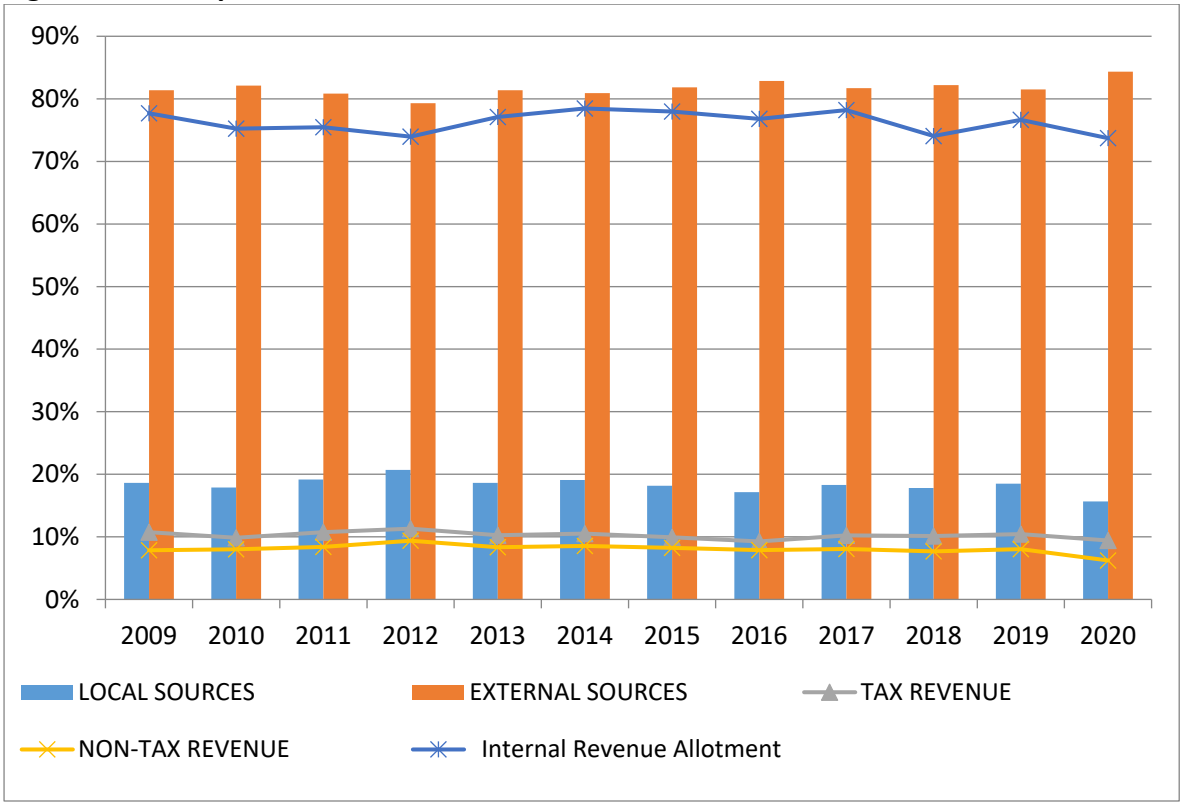
One of the criteria for a fiscally viable LGU is its regular income, indicating its capacity to deliver goods and services. Arguably, this capacity varies across different levels of government. Provinces and municipalities are heavily dependent on external sources of LGU income for their operations (Figure 2 and Figure 3). Cities, on the other hand, are able to locally raise a larger proportion of their income, primarily from tax revenues (Figure 4). In terms of local source revenues, cities and municipalities collect more of tax revenues compared to provinces which collect more local revenues from non-tax sources. Overall, LGU income comes primarily from IRA while local source income from tax revenues (Figure 5).

Figure 2. Provincial income distribution



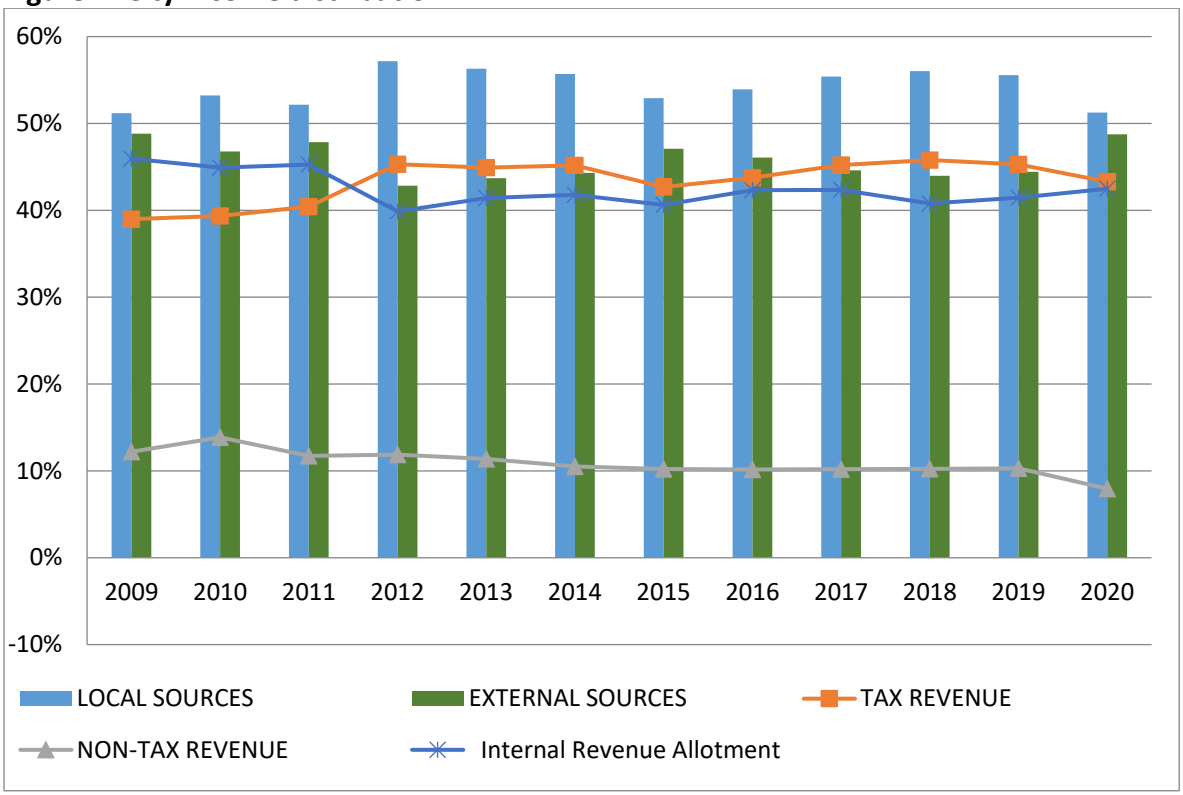
Source: Authors' calculations based on BLGF (various years)

Figure 3. Municipal income distribution



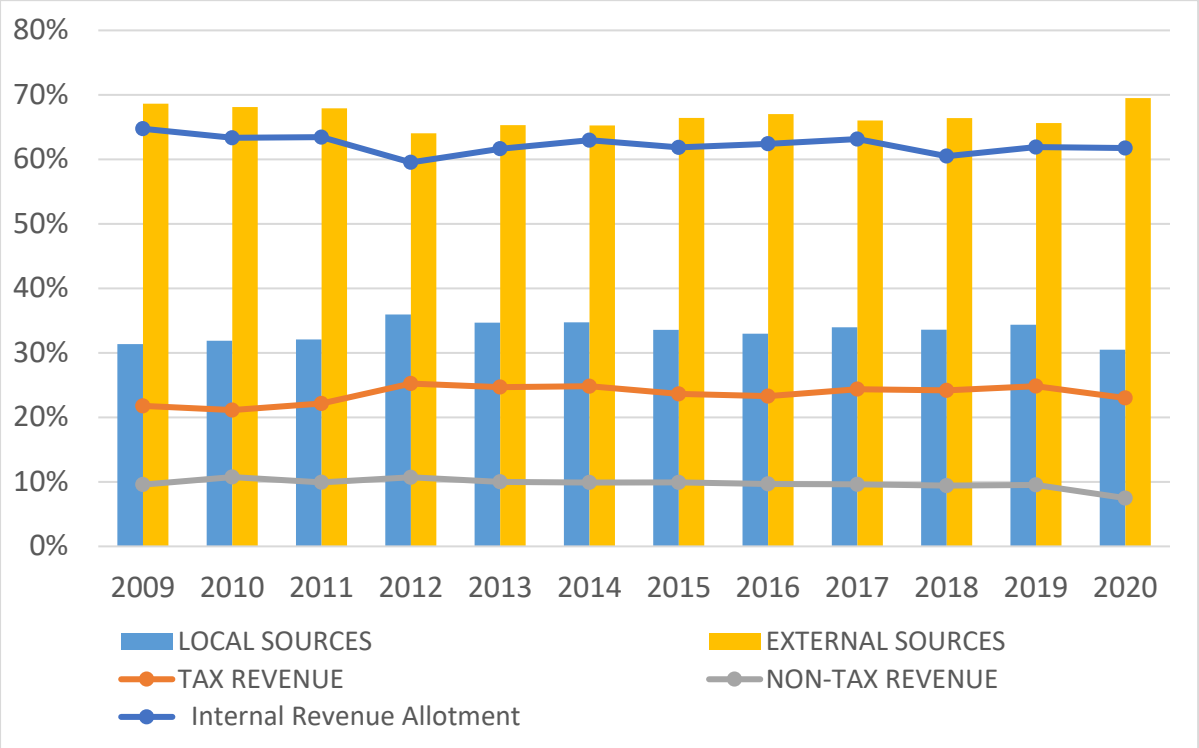
Source: Authors' calculations based on BLGF (various years)

Figure 4. City income distribution



Source: Authors' calculations based on BLGF (various years)

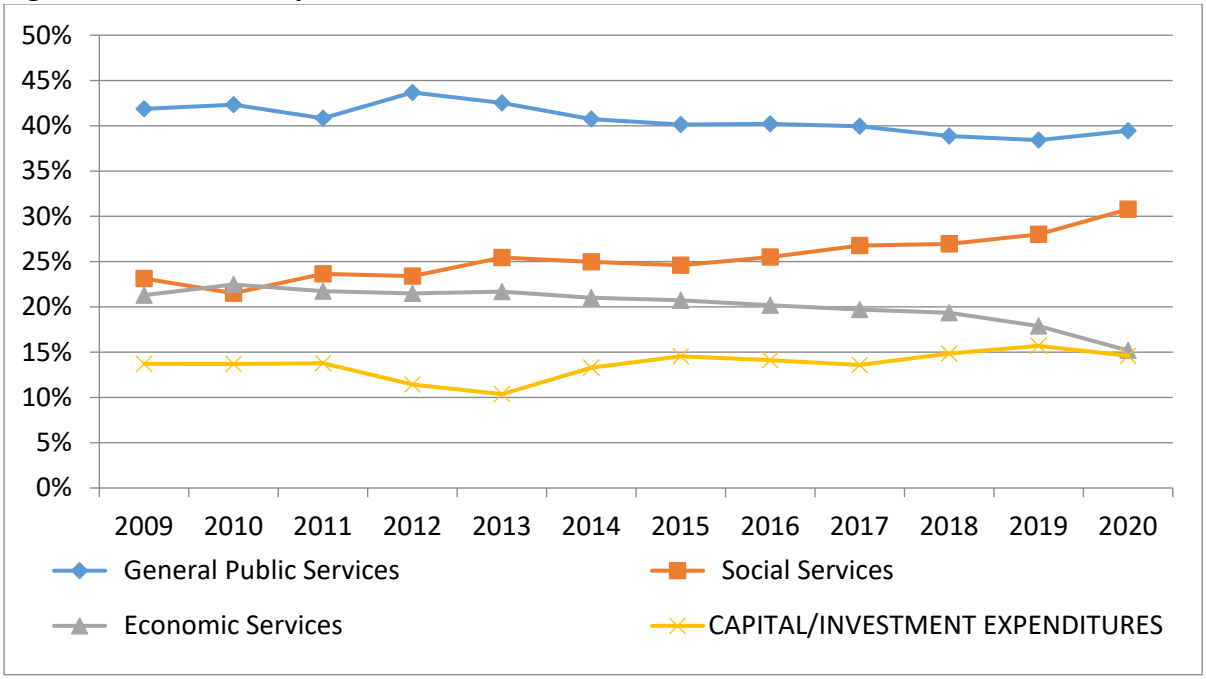
Figure 5. Summary of Provincial, City, and Municipal Income distribution



Source: Authors' calculations based on BLGF (various years)

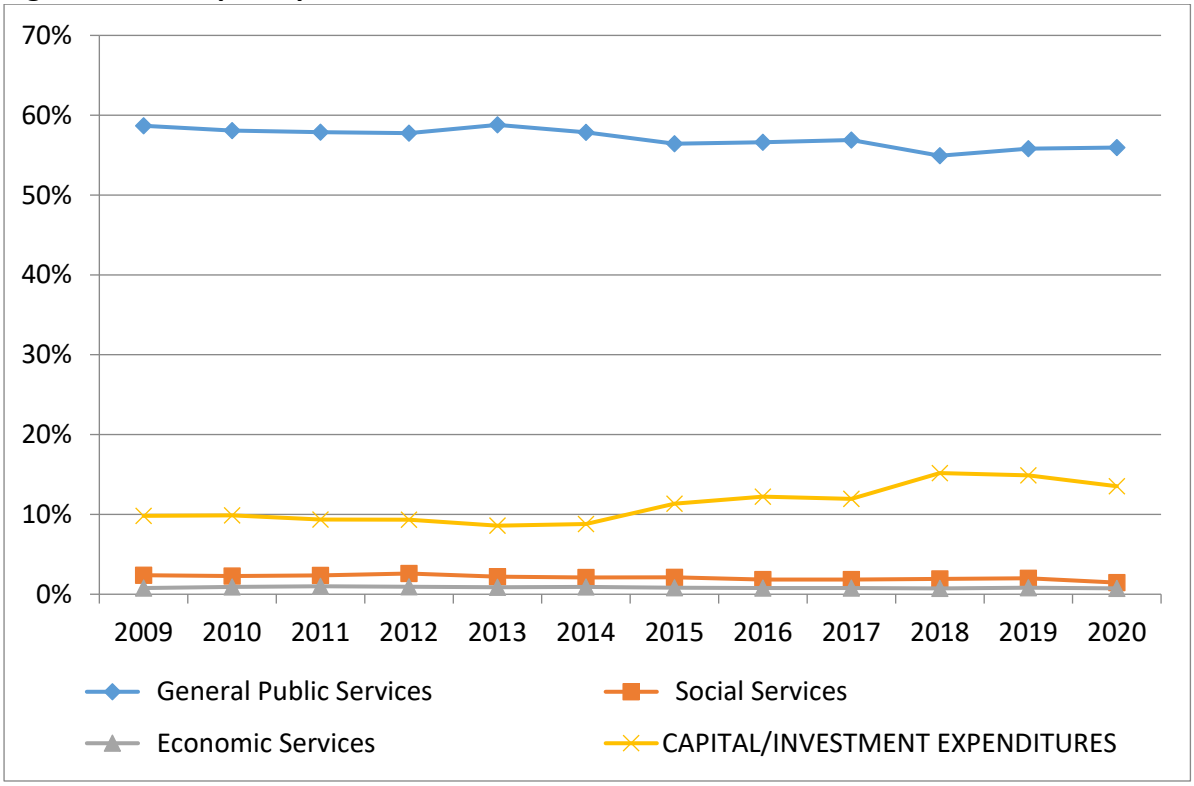
Looking at expenditure distribution, it can be seen that the cost of administration (general public services) gets the largest share of LGU budgets across the different levels (Figures 6 to 9). Social services get the second largest share of provincial budgets while, for municipalities and cities, it is capital outlays (Figures 6 to 8).

Figure 6. Provincial expenditure distribution



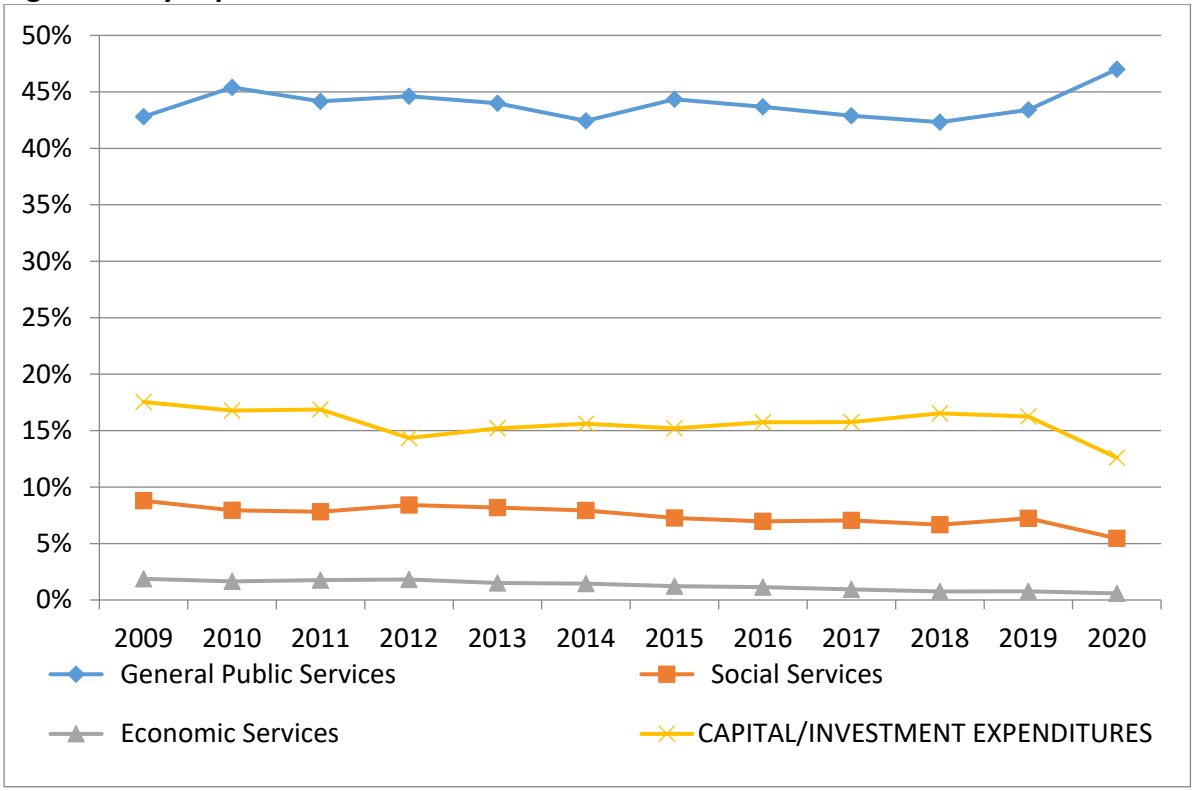
Source: Authors' calculations based on BLGF (various years)

Figure 7. Municipal expenditure distribution



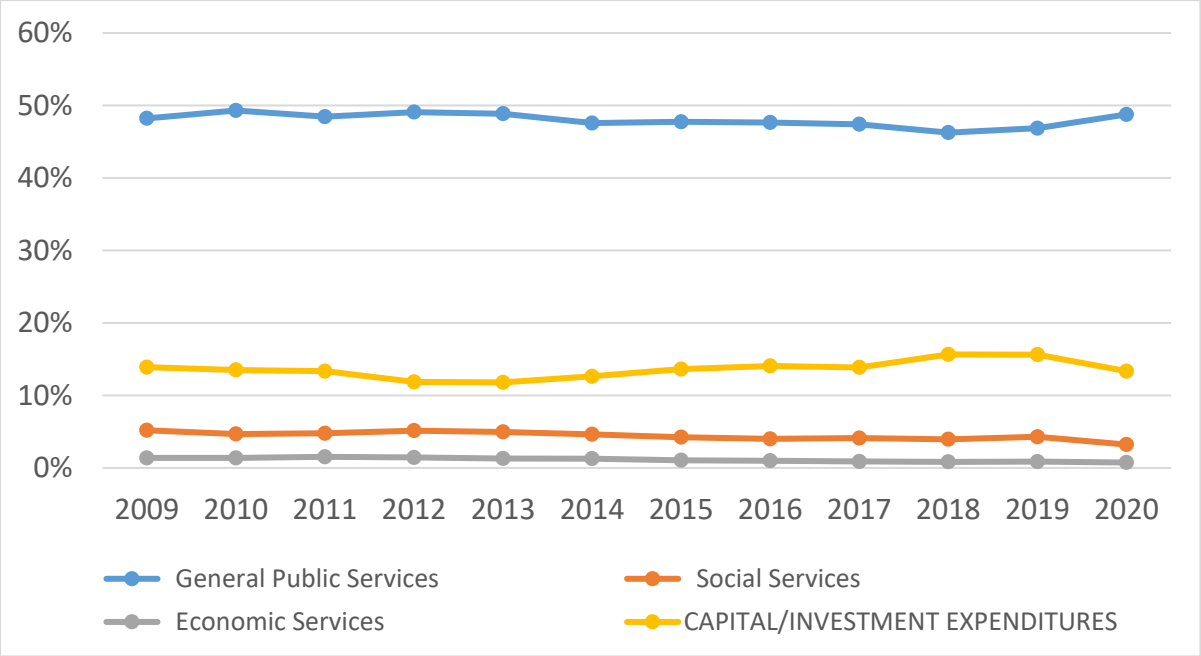
Source: Authors' calculations based on BLGF (various years)

Figure 8. City expenditure distribution



Source: Authors' calculations based on BLGF (various years)

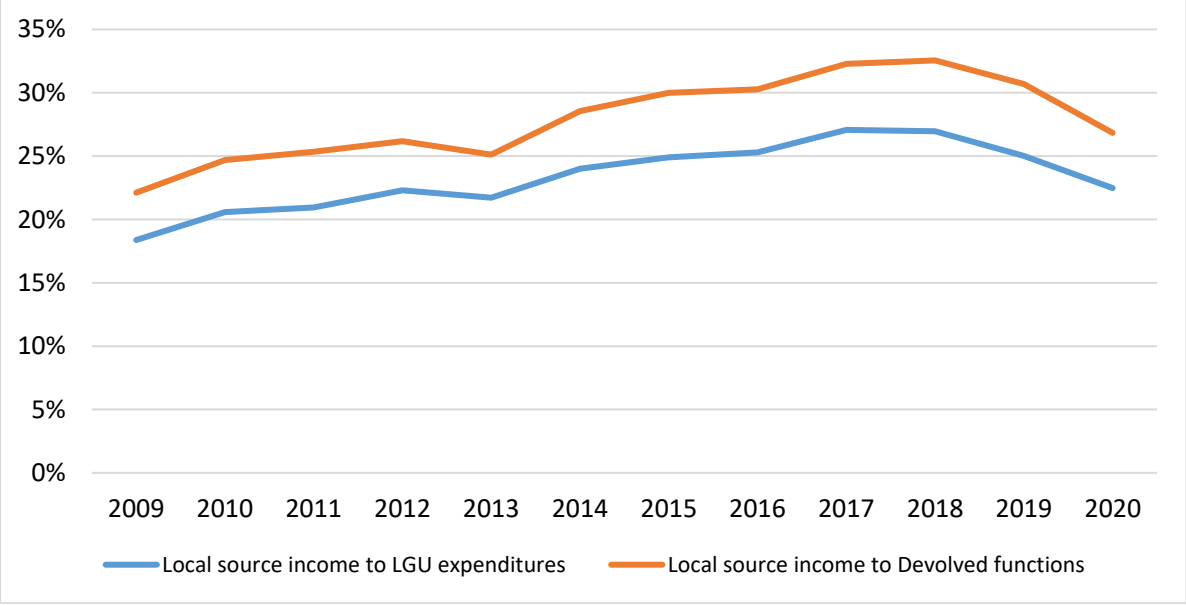
Figure 9. Summary of Provincial, City, and Municipal expenditure distribution



Source: Authors' calculations based on BLGF (various years)

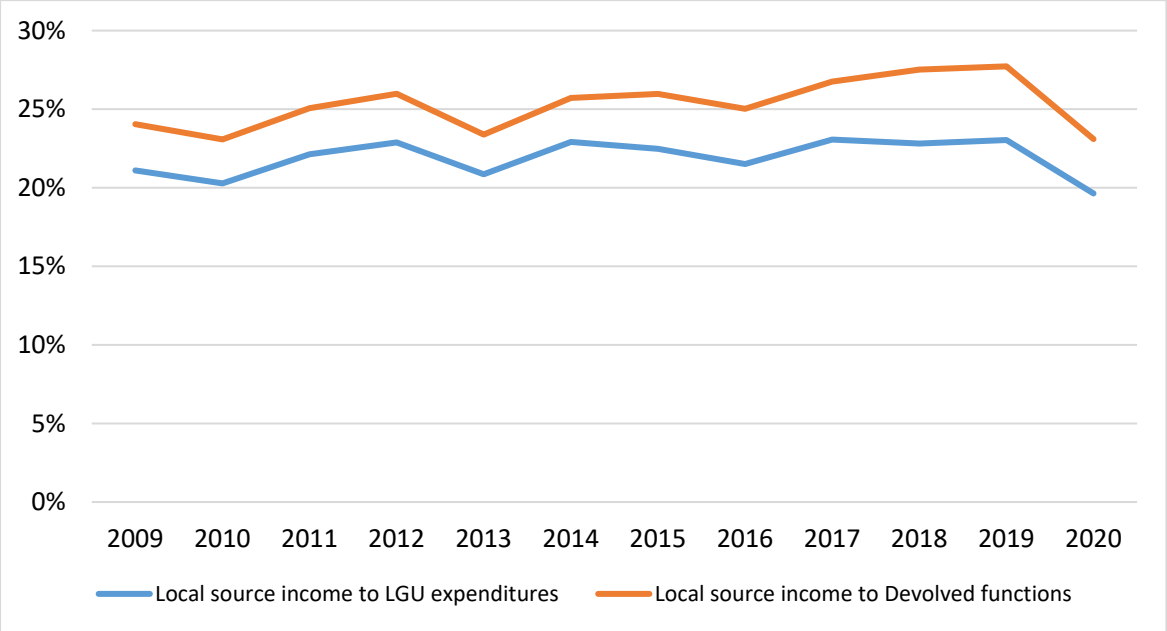
In considering the ability of an LGU to become self-reliant, it would be interesting to examine the current proportion of expenditures that LGUs can finance with locally sourced income. The next three figures show how the levels of government have different fiscal capacities to fund total LGU expenditures (which is the sum of current operating expenditures and capital outlays/investments) and devolved functions (which is total LGU expenditures less education spending and debt servicing). Provinces and municipalities finance an average of 25% to 28% of devolved functions, respectively (Figures 10 and 11). Cities, on the other hand, can finance an average of 92% of devolved functions on locally raised revenues alone (Figure 12). This shows how cities have a better chance in being self-reliant.

Figure 10. Local Source Income to Devolved Functions, Provinces (2009-2020)



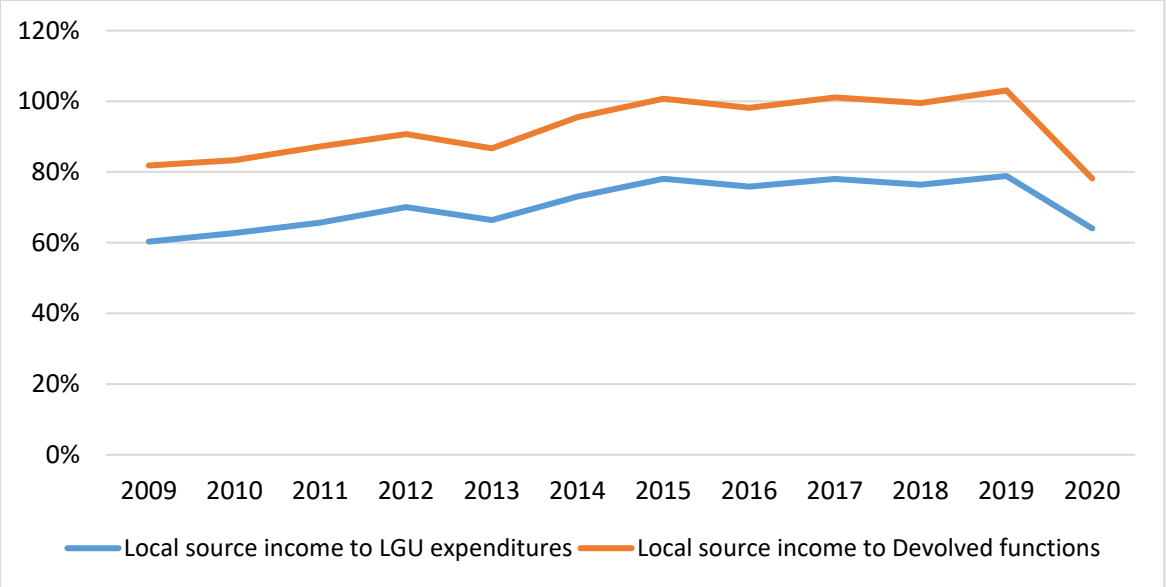
Source: Authors' calculations based on BLGF (various years)

Figure 11. Local Source Income to Devolved Functions, Municipalities (2009-2020)



Source: Authors' calculations based on BLGF (various years)

Figure 12. Local Source Income to Devolved Functions, Cities (2009-2020)



Source: Authors' calculations based on BLGF (various years)

The preceding discussion shows how the different LGU levels have varied capacities in financing devolved functions entirely from local sources. With the exception of cities (which finance an average of 92% of expenditures from local source income), provinces and municipalities need other sources of income, such as IRA, to finance spending.

This evidence could be interpreted in two ways. First, the current minimum LGU income requirement (which for provinces and municipalities has not been revised since 1991) is insufficient to satisfy the intentions of the LGC. Second, there may be a need to consider other criteria in creating an LGU. For the former, LGUs that want to become a province are required to show evidence of annual average regular income of PhP 20 Million pesos (in 1991 prices), this converts into PhP 10.32 Million (in 2000 prices) which is about 11% of average annual

provincial expenditures in the past decade. For municipalities, the requirement for its creation is at least PhP 2.5 Million (in 1991 prices) that is approximately PhP 1.29 Million (in 2000 prices) or 1% of average municipal expenditures in the past decade. The minimum LGU income requirement for a component city was revised in 2001 to be PhP 100 Million (from PhP 20 Million) which adjusts for inflation and better reflects the ability to provide devolved services being 84% of average city expenditures in the past decade.

5.2. Regression Analysis

Benchmark regressions were run using the method of ordinary least squares (OLS) to first establish the significance of the criteria used to determine fiscal viability of LGUs, namely, population, land area and income. Since the definition of viability is hinged on the ability of devolved local public goods and services, both locally raised revenues and expenditures will affect this. Because of this, there are two dependent variables: (1) total local revenues raised; and, (2) total current operating expenditures.

With respect to the independent variables: (1) population is assumed to increase both revenues and expenditures; (2) land area could affect revenues and expenditures either way (positively because of the larger tax base for real property taxes and more local infrastructure needed or negatively because larger land area could be associated with more rural poorer areas); and, (3) LGU income increase expenditures. For the latter, it could not be used as a regressor for total local revenues raised since it is a part of regular LGU income. Instead, the LGU income class of the municipality was used, though this could still have endogeneity issues.

Other variables that are expected to affect local revenues and expenditures examined were: (1) municipal poverty incidence as proxy for household income (FIES estimates are representative until the provincial and not municipal level); (2) a dummy variable indicating if the municipality received the Seal of Good Local Governance (SGLG) in 2017; (3) length of office of the incumbent mayor; (4) presence of updated development plans, investment programs and schedule of market values of real properties.

Table 5 displays the descriptive statistics of variables used in estimations[13]. LGU fiscal variables and municipal population are expressed in million PhP, age of the schedule of market values and mayor in office are expressed in years, updated SMV, Seal of Good Local Governance, CDP and LDIP are all dummy variables.

The regression results show that for local revenues, population, land area, municipal poverty incidence and receiving an SGLG are robust estimators. If population are associated with proportionate increases in local revenues while increases in LGU income classification and land area are associated with declines. Similarly, local revenues decrease by 1% with an increase in poverty incidence. Finally, if the municipality receives the SGLG, it is expected that local revenues are higher by 18%. That is, local revenues increase with population and receiving the SGLG but decrease with poverty incidence, LGU income classification, and land area.

[13] Variables were selected based on theory and empirical evidence. The estimated significant pairwise correlation of variables are in Appendix A.

Table 5. Descriptive Statistics

	Observations	Mean	Standard Deviation	Minimum	Maximum
Total local sources (2017)	1,338	27.79	56.07	0.08	910.18
Total current operating income (2017)	1,338	145.87	104.11	32.41	1192.98
General Public Services (2017)	1,338	64.05	40.71	16.28	475.55
Education, Culture & Sports/ Manpower Development (2017)	1,338	2.20	4.92	0.00	83.19
Health, Nutrition & Population Control (2017)	1,338	9.09	7.61	0.00	121.15
Labor and Employment (2017)	1,338	0.05	0.59	0.00	18.38
Housing and Community Development (2017)	1,338	1.24	6.23	0.00	111.24
Social Services and Social Welfare (2017)	1,338	7.01	7.50	0.00	89.06
Economic Services (2017)	1,338	15.23	14.80	0.00	192.15
Debt Service (FE) (Interest Expense & Other Charges) (2017)	1,338	0.91	1.94	0.00	35.22
Total current operating expenditures (2017)	1,338	99.79	66.13	21.40	723.54
Capital/Investment Expenditures (2017)	1,338	14.18	20.54	0.00	185.57
Population (2015 Population census)	1,338	0.04	0.03	0.00	0.37
Estimated age of property values (SMV) (2019)	1,338	7.52	4.96	0.00	27.00
Updated or outdated SMV (2019)	1,338	0.43	0.50	0.00	1.00
Number of years serving as mayor (2017)	1,338	6.97	4.59	1.00	32.00
Internal Revenue Allotment (2017)	1,338	112.84	58.91	22.85	558.23
Income classification	1,338	3.08	1.47	1.00	6.00
Municipal Poverty Incidence (2015)	1,338	27.90	14.83	0.70	78.50
SGLG Recipient (2017)	1,338	0.13	0.33	0.00	1.00
Comprehensive Development Plan validity (2017)	1,338	0.36	0.48	0.00	1.00
Local Development Investment Program validity (2017)	1,338	0.30	0.46	0.00	1.00
Total LGU Expenditures = COE + Capital outlay/investment	1,338	113.97	79.27	21.91	885.19

For expenditures, two different variables were used to represent the capacity of LGUs to finance spending, LGU income class and the LGU income[14]. Population and land area are robust estimators of total current operating expenditures and total LGU expenditures increasing with both variables though more rapidly for population (Tables 7 and 8). Both LGU income classification and LGU income, representing the capacity to finance LGU spending, are robust estimators of expenditures. LGU income classification is associated with lower expenditures while LGU income is associated with higher ones (Table 7 and 8). What is interesting is that the SGLG indicator is significant and positively related to total current operating expenditures. This means that if a municipality received the SGLG it is expected to spend more.

The other political economy variables such as the length of office of the incumbent mayor and the presence of updated development plans, investment programs and schedule of market values of real properties were all insignificant (even if they showed significant pairwise correlations, Annex A). These results seem to suggest that for the current data, these political economy variables are not found to significantly affect revenue collection and expenditures. Alternatively, revenues and expenditures did not seem to be affected by the presence of updated plans and investment programs[15].

[14] Total LGU income is defined as current operating income which is the sum of local source income and external sources such as the IRA.

[15] To examine the robustness of the results and address possible endogeneity and omitted variable problems, the authors tried the instrumental variable method. For local revenues, the length of time in office of the incumbent mayor was used as an instrumental variable for an updated schedule of market values. For expenditures the presence of an updated comprehensive development plan and local development investment program were used as instrumental variables for SGLG. Post-estimation checks for endogeneity for both local revenues and expenditures indicated that it null hypothesis that the updated schedule of market values and the SGLG were exogenous could not be rejected (Annex C).

Table 6. Estimates: Total Local Revenue, population, land area, income classification, municipal poverty incidence, and SGLG

	Total Local Sources					
VARIABLES	-1	-2	-3	-4	-5	-6
Population	13.55***	13.06***	12.96***	12.83***	12.96***	12.84***
	(1.404)	(1.446)	(1.425)	(1.425)	(1.418)	(1.420)
Land Area	-0.00051***	-0.00025**	-0.00027**	-0.00027**	-0.00027**	-0.00027**
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Income Classification	-0.39***	-0.37***	-0.36***	-0.36***	-0.36***	-0.36***
	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)
Municipal poverty incidence		-0.014***	-0.013***	-0.013***	-0.013***	-0.013***
		(0.0019)	(0.0019)	(0.0019)	(0.0019)	(0.0019)
2017 Seal of Good Local Governance (SGLG)			0.181***	0.181***	0.181***	0.181***
			(0.049)	(0.049)	(0.049)	(0.049)
Updated SMV				0.049		0.047
				(0.048)		(0.048)
Number of serving years (Mayor)					-0.0057	-0.0055
					(0.005)	(0.005)
Constant	3.229***	3.525***	3.460***	3.451***	3.497***	3.488***
	(0.151)	(0.157)	(0.156)	(0.156)	(0.160)	(0.160)
Observations	1,338	1,338	1,338	1,338	1,338	1,338
R-squared	0.544	0.566	0.570	0.570	0.570	0.571

Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Table 7. Estimates: Total Current Operating Expenditures, population, land area, income classification, municipal poverty incidence, and SGLG

	Total Current Operating Expenditures					
VARIABLES	-1	-2	-3	-4	-5	-6
Population	5.596***	5.590***	5.555***	5.476***	5.554***	5.475***
	(0.327)	(0.328)	(0.328)	(0.329)	(0.329)	(0.330)
Land Area	0.000104***	0.000107***	0.000103***	9.84e-05***	0.000103***	9.84e-05***
	(0.00003)	(0.00003)	(0.00003)	(0.00003)	(0.00003)	(0.00003)
Income Classification	-0.220***	-0.219***	-0.218***	-0.218***	-0.218***	-0.218***
	(0.00742)	(0.00743)	(0.00744)	(0.00742)	(0.00746)	(0.00743)
Municipal poverty incidence		-0.000171	0.0000545	-0.000116	0.0000467	-0.000126
		(0.000423)	(0.000422)	(0.000423)	(0.000423)	(0.000424)
2017 Seal of Good Local Governance (SGLG)			0.0643***	0.0644***	0.0643***	0.0644***
			(0.0142)	(0.0142)	(0.0142)	(0.0141)
Updated SMV				0.0295**		0.0298**
				(0.0132)		(0.0132)
Number of serving years (Mayor)					0.000648	0.000759
					(0.00137)	(0.00136)
Constant	4.872***	4.876***	4.853***	4.848***	4.848***	4.842***
	(0.0367)	(0.0384)	(0.0393)	(0.0392)	(0.0407)	(0.0406)
Observations	1.338	1,338	1,338	1,338	1,338	1,338
R-squared	0.807	0.807	0.809	0.810	0.809	0.810

Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Table 8. Estimates: Total LGU Expenditures, population, land area, total current operating income, municipal poverty incidence, and SGLG

	Total Current Operating Expenditures					
VARIABLES	-1	-2	-3	-4	-5	-6
Population	2.095***	2.095***	2.080***	1.991***	2.078***	1.988***
	(0.498)	(0.499)	(0.494)	(0.487)	(0.494)	(0.488)
Land Area	7.24e-05***	7.22e-05***	6.87e-05***	6.39e-05**	6.87e-05***	6.39e-05**
	(2.61e-05)	(2.61e-05)	(2.61e-05)	(2.61e-05)	(2.61e-05)	(2.61e-05)
Current operating income	0.799***	0.799***	0.795***	0.795***	0.796***	0.795***
	(0.0324)	(0.0323)	(0.0321)	(0.0320)	(0.0321)	(0.0321)
Municipal poverty incidence		1.29E-05	0.000212	2.34E-05	0.000199	7.05E-06
		(0.000343)	(0.000346)	(0.000349)	(0.000346)	(0.000349)
2017 Seal of Good Local Governance (SGLG)			0.0572***	0.0573***	0.0572***	0.0573***
			(0.0116)	(0.0116)	(0.0116)	(0.0116)
Updated SMV				0.0329***		0.0333***
				-0.0109		-0.0109
Number of serving years (Mayor)					0.00108	0.0012
					(0.00113)	(0.00113)
Constant	0.499***	0.498***	0.495***	0.495***	0.488***	0.487***
	-0.133	-0.133	-0.131	-0.131	-0.13	-0.13
Observations	1,338	1,338	1,338	1,338	1,338	1,338
R-squared	0.86	0.86	0.862	0.863	0.862	0.863

Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

6. What are LGUs mandated to spend on?

Ideally, establishing the fiscal viability of LGUs requires showing that these can afford the minimum mandated devolved basic services which, in turn, requires knowing the cost of providing these goods and services. As of the writing of this paper, national and local governments were finalizing their devolution transition plans which includes the estimated costs of devolved functions, in accordance with the directive under E.O. No 138[16]. So as not to preempt government cost estimates of some of the functions (such as social welfare, agriculture and health services which are more complicated to estimate and depend primarily on local policy priorities), a feasible option to estimate the cost of devolved functions was to approximate the cost of the LGC-mandated human resource (HR) complement for municipalities.

The estimation of the LGU HR complement is relatively straightforward since the LGC prescribes the positions needed for an LGU, the DBM through their "*Manual on Position Classification and Compensation*" and the Salary Standardization Law of 2019[17] together

[16] Full devolution of certain functions of the Executive Branch to Local Governments, Creation of a Committee on Devolution, and for other purposes (June 1, 2021).

[17] Republic of the Philippines, Republic Act 11466, *Salary standardization Law of 2019*, (2020).

define the highest salary grade and compensation allowed for each position based on an LGU's income class.

The second estimated cost of devolved functions is for three categories of local infrastructure: municipal roads, rural health units and evacuation centers. Local infrastructure, though being a devolved function, has received regular budgetary support from national government programs since decentralization in 1991. A recent PIDS study estimated municipal fiscal gaps existing in 2017 for these infrastructure areas to total about PhP 169 billion (Diokno-Sicat, et al. 2020).

These two estimates of devolved functions will be compared to local revenues, income and LGU expenditures to establish that, at present, these are larger than: (1) the minimum income requirement to create a municipality which is about PhP 700,000 (in 2018 prices); (2) local source income; (3) LGU income; and, (4) total LGU expenditures.

6.1. LGU human resource complement

The LGC of 1991 defines the needed staffing pattern of LGUs by level of local government and by necessity of filling the position (Table 9). The positions are classified as elective, mandatory and optional positions and LGUs, though given the freedom to choose how to complete their staffing requirements are still bound by salary grades and maximum compensations according to DBM position classification and compensation manual and the Salary Standardization Law of 2019 (Table 10).

Table 9. Elective, mandatory and optional LGU staff for provinces, cities and municipalities

	Province	RA 7160	City	RA 7160	Municipality	RA 7160
Elective Officials	Officials of the Provincial Government	Sec. 463	Officials of the City Government	Sec. 454	Officials of the Municipal Government	Sec. 443
	Provincial Governor		City Mayor	Sec. 455	Municipal Mayor	Sec. 444
	Provincial Governor Private Secretary		City Mayor Private Secretary		Municipal Mayor Private Secretary	
	Provincial Governor Executive Assistant		City Mayor Executive Assistant		Municipal Mayor Executive Assistant	
	Provincial Vice Governor		Driver		Driver	
	Provincial Vice Governor Private Secretary		Vice Mayor	Sec. 456	Vice Mayor	Sec. 445
	Provincial Vice Governor Executive Assistant		City Vice Mayor Private Secretary		Municipal Vice Mayor Private Secretary	
			City Vice Mayor Executive Secretary		Municipal Vice Mayor Executive Secretary	
			Driver		Driver	
			Sangguniang Bayan	Sec. 457	Sangguniang Bayan	Sec. 226
			Secretary to Sangguniang Bayan	Sec. 454	Secretary to Sangguniang Bayan	Sec. 443
Mandatory Local Appointive Official Positions	Provincial Treasurer	Sec. 463	City Treasurer	Sec. 454	Municipal Treasurer	
	Provincial Assessor		City Assessor		Municipal Assessor	
	Provincial Accountant		City Accountant		Municipal Accountant	
	Provincial Engineer		City Budget Officer		Municipal Budget Officer	
	Provincial Budget Office		City Planning and Development Coordinator		Municipal Planning and Development Coordinator	Sec. 443
	Provincial Planning and Development Coordinator		City Engineer		Municipal Engineer/building official	
	Provincial Legal Officer		City Health Officer		Municipal Health Officer	
	Provincial Administrator		City Civil Registrar		Municipal Civil Registrar	
	Provincial Health Officer		City Administrator			
	Provincial Social Welfare and Development Officer		City Legal Officer			
	Provincial General Services Officer		City Veterinarian			

	Province	RA 7160	City	RA 7160	Municipality	RA 7160
Optional Local Appointive Official Positions	Provincial Agriculturist Provincial Veterinarian Provincial Population Officer Provincial Natural Resources and Environment Officer Provincial Cooperative Officer Provincial Architect Provincial Information Officer	Sec. 463	City Social Welfare and Development Officer City General Services Officer City Architect City Information Officer City Agriculturist City Population Officer City Environment and Natural Resources Officer City Cooperative Officer	Sec. 454	Municipal Legal Officer Municipal Agriculturist Municipal Environment and Natural Resources Officer Municipal Social Welfare and Development Officer Municipal Architect Municipal Information Officer	Sec. 443

Source: Republic of the Philippines, Republic Act 7160; Department of Budget and Management Manual on Position Classification and Compensation (Chapter 9)

Table 10. Municipal staffing pattern based on the LGC and DBM Position Classifications

Positions	Salary Grade	Monthly Salary
Elective Officials		
Mayor	28	142,683
Vice Mayor	26	111,742
Sangguniang Bayan (SB) Member I (8 members)	25	98,886
SB Staff	15	33,575
Municipal Mayor private secretary II	15	33,575
Municipal Mayor executive Assistant II	17	39,986
Driver II	4	14,400
Municipal vice Mayor private secretary I	11	23,877
Municipal Vice Mayor executive Assistant I	14	30,799
Driver I	3	13,572
Mandatory Local Appointive Official Positions		
1. Accountant		
Department Head	24	86,742
Assistant Department Head	22	68,415
Accountant III (next highest position to ADH)		
for 1st to 3rd LGU Income class	19	48,313
for 4th to 6th LGU Income class	16	36,628
2. Assessor		
Department Head	24	86,742
Assistant Department Head	22	68,415
Local Assessment Operations Officer III		
for 1st to 3rd LGU Income class	18	43,681
for 4th to 6th LGU Income class	15	33,575
3. Budget		
Department Head	24	86,742
Assistant Department Head	22	68,415
Budget Officer III		
for 1st to 3rd LGU Income class	18	43,681
for 4th to 6th LGU Income class	15	33,575
4. Civil Registrar		
Department Head	24	86,742

Positions	Salary Grade	Monthly Salary
Assistant Department Head	22	68,415
Registration Officer III		
for 1st to 3rd LGU Income class	18	43,681
for 4th to 6th LGU Income class	15	33,575
5. Engineer		
Department Head	24	86,742
Assistant Department Head	22	68,415
Engineer III		
for 1st to 3rd LGU Income class	19	48,313
for 4th to 6th LGU Income class	16	36,628
6. Health Officer	24	86,742
7. Planning and Development Coordinator		
Department Head	24	86,742
Assistant Department Head	22	68,415
Planning Officer III		
for 1st to 3rd LGU Income class	18	43,681
for 4th to 6th LGU Income class	15	33,575
8. Treasurer		
Department Head	24	86,742
Assistant Department Head	22	68,415
Local Treasury Operations Officer III		
for 1st to 3rd LGU Income class	18	43,681
for 4th to 6th LGU Income class	15	33,575
9. MDRRMO		
Department Head		
for 1st to 3rd LGU Income class	25	98,886
for 4th to 6th LGU Income class	24	86,742
Assistant Department Head		
for 1st to 3rd LGU Income class	23	70,907
for 4th to 6th LGU Income class	22	68,415
Local DRRM Officer		
for 1st to 3rd LGU Income class	18	43,681
for 4th to 6th LGU Income class	15	33,575
Optional Local Appointive Official Positions		
10. Administrator	24	86,742
11. Municipal Agricultural Officer	20	54,251
12. Architect V	24	86,742
13. Environment and Natural Resources Officer	24	86,742
14. Information Officer V	24	86,742
15. Attorney IV	23	70,907
16. Population Officer V	24	86,742
17. Social Welfare Officer V	24	86,742

Source: Congress of the Philippines, Republic Act 11466, Section 7; Department of Budget and Management (2009), Manual on Position Classification and Compensation, Chapter 9.

The maximum salary that can be paid to LGU staff depends on the LGU income class in accordance to the Salary Standardization Law of 2019 (Table 10, Annex B). The total cost of filling LGC-mandated positions were estimated for two models: Model 1 (with a total of PhP 50.87 Million per year) includes only elective and mandatory and support staff positions are filled; and, Model 2 (which totals PhP 76.14 Million) is Model 1 plus all optional positions are filled. For the elective positions, it was estimated that there are eight (8) elected Sanggunian Bayan members including two (2) SB members from the Sanggunian Kabataan and the president of the municipal chapter of the Liga ng mga Barangay (Sec. 446 LGC).

The total LGU HR complement cost was computed in two steps. First, total annual salaries were estimated using national government SSL compensation levels. Second, since the maximum amount an LGU can pay their employees depends on their income class, the total HR bill computed in the first step was adjusted by the SSL of 2019 'Percentage of Salary Schedule'.

For example, the HR bill of a 4th class municipality that will employ only elective and all mandatory departments (with four staff members per department, one department head, assistant department head and 2 staff members) is a maximum of PhP 34.1 Million (Table 11). For the same 4th class municipality to also fill all optional positions, it would need PhP 50.5 Million. In both cases, the minimum LGU income requirement of PhP 700,000 (in 2018 prices) for several barangays to become a municipality would be insufficient since even the estimates of the poorest income class HR requirement could not be covered since Model 1 estimate is PhP 28 Million (in 2018 prices) while Model 2 is equivalent to PhP38.3 Million (in 2018 prices).

Table 11. Summary table of LGU income requirements (by LGU income class) vs. HR cost (In Million)

	Model 1	Model 2
1st Class	44.4	67.1
2nd Class	42.0	63.4
3rd Class	39.5	59.7
4th Class	34.1	50.5
5th Class	31.8	47.1
6th Class	29.6	40.4

Source: Department of Budget and Management (2009), Manual on Position Classification and Compensation, Chapter 9.

Table 12 presents the estimated HR costs as a proportion of local source income, LGU income and LGU expenditures. This reads that the same 4th income class municipalities cost of filling all mandated positions is 284% of local source income, 36% of LGU income and 44.6% of LGU expenditures. If the same What this means is that the estimated HR cost cannot be financed from local source income but afforded otherwise.

Table 12. LGU HR requirement to total local source and LGU income and expenditures, by income class

LGU Income Class	Local source income	LGU income	LGU expenditures	Local LGU income	LGU income	LGU expenditures
	Model 1			**Model 2**		
1st Class	60.5	16.8	20.8	91.3	25.4	31.5
2nd Class	155.7	26.6	33.4	235.2	40.2	50.4
3rd Class	229.3	32.0	39.7	346.3	48.4	59.9
4th Class	284.3	36.7	44.6	420.5	54.3	65.9
5th Class	591.3	49.8	59.4	874.6	73.7	87.9
6th Class	1384.2	71.2	82.8	1889.8	97.2	113.1

Source: Author's computations based on DBM (Department of Budget and Management, Manual on Position Classification and Compensation, Chapter 9)

6.2. Devolved basic infrastructure

A PIDS (2020) study estimated fiscal gaps for the devolved basic services municipal roads, rural health units and evacuation centers. Below you will see the fiscal gaps by LGU income class (Diokno-Sicat, et al. 2020). For municipal roads, the cost to pave all unpaved roads in 2017 is PhP 133 B. In the case of evacuation centers, ensuring that all GIDA areas have at least one evacuation center, this costs from 2 to 12.2 billion pesos. Finally, to ensure that there are enough RHUs for 20,000 population, we need PhP 22 B assuming these are for GIDA areas (Table 13). Table 14 shows the average

Table 13. Estimated fiscal gaps for municipal roads, RHUs and evacuation centers, 2017

LGU Income class	Municipal Roads	RHUs	Evacuation Center
	(pave all unpaved roads existing in 2017, in PhP B)	number of RHUs (1 for every 20,000 persons in billion PHP)	number of evacuation centers in GIDA area (in billion PHP)
1st Class	56	13.4	2.8
2nd Class	21	3.4	1.7
3rd Class	23.6	3.4	1.9
4th Class	20.6	1.8	3.0
5th Class	10.8	0	2.6
6th Class	0.53	0	0.2
Total	**133**	**22**	**12.2**

Source: Diokno-Sicat, et.al (2020) Baseline Study on Fiscal and Governance Gaps

Fiscal gaps for infrastructure (defined as the sum average fiscal gap of roads, RHUs and evacuation centers) as a proportion of local source income and total LGU expenditures were computed to see the relative size of the fiscal gaps to local resources and spending. What the figures imply is that, on the average, the infrastructure gap (for municipal roads, RHUs and evacuation centers) for a 5th class municipality are 765,645% of total local revenue, 64,542% of total local income and 76,923% of total LGU expenditures. The proportion to the LGU income requirement of P700,000 (in 2018 prices) would be even larger, showing that the current income requirement is not enough to indicate viability of a potential municipality.

Table 14. Average fiscal gap for municipal roads, RHUs and evacuation centers, In Billion PhP

LGU Income class	Road Gap		RHU Gap		Evacuation Gap	
	Mean	SD	Mean	SD	Mean	SD
1st Class	0.19	0.63	1.8	4.2	8.7	11.9
2nd Class	0.13	0.44	1.3	3.7	9.5	12.2
3rd Class	0.97	0.33	1.6	4.1	7.8	11.6
4th Class	0.59	0.18	1.4	3.9	8.6	11.9
5th Class	0.41	0.11	1.2	3.6	10.2	12.3
6th Class	0.29	0.55	3.4	5.9	11.8	12.8

Source: Diokno-Sicat, et.al (2020) Baseline Study on Fiscal and Governance Gaps

Table 15. Proportion of total fiscal gap to total local source income and expenditures, by income class.

LGU Income class	Local source income	LGU income	LGU expenditures
1st Class	254,187	70,556	87,601
2nd Class	479,244	81,836	102,764
3rd Class	564,057	78,763	97,595
4th Class	494,796	63,844	77,590
5th Class	765,645	64,542	76,923
6th Class	1,357,716	69,829	81,251

Source: Diokno-Sicat, et.al (2020) Baseline Study on Fiscal and Governance Gaps

7. General Findings and recommendations

This study presented how the Philippines defines fiscally viable LGUs through regular local income, population and land area. The latter two variables are the same factors used to determine the amount of intergovernmental fiscal transfers an LGU receives and, for population, was shown to be positively associated with both local source revenues and expenditures.

As for the minimum LGU income requirements, the study highlighted how the current mandated income levels for provinces and municipalities covered only about 11% and 1% of average local expenditures in the past decade. This is far from the LGC aspiration of self-reliant local governments that could provide the essential services commensurate to the population.

In the regression estimates, it was shown that population, land area, municipal poverty incidence and being awarded the SGLG are robust estimators of total local revenues. For total current operating and total LGU expenditures, population, land area, SGLG and total current operating income were all robust indicators.

As mentioned above, the governance (except for the SGLG) and political economy variables were all insignificant. It could be that for this particular data the other factors were estimated to have a larger impact.

As for the exercise in estimating the cost of devolved functions, the results showed that the current requirement to create a municipality is largely insufficient to cover the organizational costs of an LGU and estimated fiscal gaps in key infrastructure areas. For some levels of LGUs,

1st to 4th income class, they could afford to fill all elective and mandatory positions still within their respective LGC-mandated personal services cap.[18] To include filling even the optional positions, only 1st class municipalities could afford this. Financing the estimated 2017 infrastructure gaps for municipal roads, RHUs and evacuation centers is much less affordable for municipalities.

What does this all mean? There are two main points established. First, the evidence shows that the current criteria used to establish LGUs, population, land area and LGU income are significant factors in municipal revenue raising and spending. However, and second, there is a need to the current LGU income requirement is extremely insufficient to cover the estimated costs of HR and infrastructure gaps so it must therefore be increased.

In sum:

- There is strong evidence for the need to revise the minimum requirements of LGUs to minimize the issues of fragmentation or there being a large number of LGUs that struggle to deliver devolved basic services.
- Increasing the minimum LGU income requirements would make it more challenging to become an LGU therefore reducing fragmentation issues.
- Another option is redefining average income to be those locally raised to make it more stringent for LGUs to level up.

What can policymakers do to address these issues?

1. Amend Sections 442 (and 461) of the LGC to increase the minimum income requirement allowing the creation of municipalities (and provinces);

2. Given the existing number of municipalities, what could be done to ensure improved delivery of services are the following:
   2.1. Encourage amalgamation or cooperation across different LGUs for certain functions that have spillover effects. This could be incentivized such as in the case of other countries that have experienced over-fragmentation.
   2.2. If amalgamation/cooperation across LGUs is a challenge, the good or service that has cross-boundary effects could be assigned to a higher level of government. This could also be incentivized.

Examples of goods and services that could be provided in the two described modes could be water and sanitation systems and tertiary health care services.

3. As for the LGU income requirement for municipalities, policymakers could consider this study's estimates for the LGU human resource complement as a starting point for determining the LGU income level wherein a municipality could be deemed as fiscally viable. LGUs have a mandated personal service (PS) expenditure cap of 45% of the total budget for 1st to 3rd income class and 55% of the total budget for 4th to 6th income class. In principle, assuming that the municipality meets the cap, i.e. spends the maximum allowable amount on salaries/filling of positions, we can estimate the total LGU budget by dividing this by the maximum proportion of the budget allowed for human resources. This will give the total budget, assuming all positions mandated in the LGC are filled and could be

[18] The personal services cap for 1st to 3rd income class LGUs is 45% of the local annual budget and for 4th to 5th income class is 55% (LGC, Sec. 325)

interpreted also as the needed LGU income given these assumptions of budget balance (Table 16).

The estimates in Table 16 could be read as, a 1st income class municipality that fills only elective and mandatory positions (Model 1) and reaches its PS cap, should ideally have an annual budget of P98.8 M (in current prices) or P94 M (in 2018 prices). These estimates are closer to the LGU income requirements of a city of P100 Million than the current LGC-mandated income requirement of P1.5 M (in 2018 prices). The disparity is even larger if an LGU will fill all mandated positions (Model 2). A 6th income class municipality would need P40.4 M to fill all LGC-mandated positions which would require P73.4 M annual budget (in current prices).

The estimates of HR requirements could change depending on the desired organizational structure of each LGU or if LGUs agree to share/have higher levels of government hire particular positions for devolved functions that have spillover effects. This study, at least, proposes an option of how to do so.

Table 16. Estimated overall annual LGU budget (income requirements) based on human resource requirements.

	Model 1 (elective & mandatory positions only)					
	1st class	**2nd class**	**3rd class**	**4th class**	**5th class**	**6th class**
Annual HR requirement (In Million, current prices)	44.45	41.98	39.51	34.11	31.84	29.56
PS Cap*	0.45			0.55		
Estimated budget (In Million, current prices)	98.77	93.28	87.80	62.02	57.89	53.75
Estimate budget (In Million, 2018 prices)	93.67	88.46	83.26	58.82	54.90	50.97
	Model 2 (elective + mandatory + optional positions)					
	1st class	**2nd class**	**3rd class**	**4th class**	**5th class**	**6th class**
Annual HR requirement (In Million)	67.13	63.40	59.67	50.45	47.09	40.36
PS Cap*	0.45			0.55		
In Million	149.17	140.89	132.60	91.73	85.62	73.38
In 2018 prices	141.46	133.61	125.75	86.99	81.19	69.59
Memo item:						
IPIN (2018 =100)	*105.45*	*105.45*	*105.45*	*105.45*	*105.45*	*105.45*

Some future work could look at provinces and cities in the same light as in this study. This could also branch out to revisiting the current distribution of the intergovernmental fiscal transfer, NTA, and/or the need to change current LGU income classification. For the former, an asymmetric approach to distributing NTA across or within levels of local governments could be examined depending on fiscal capacities to finance devolved functions.

8. References

Administrative Order 270. 1992. Prescribing the Implementing Rules and Regulations of the Local Government Code of 1991. Manila, Philippines: Office of the President. https://www.officialgazette.gov.ph/1992/02/21/administrative-order-no-270-s-1992/ (accessed August 23, 2021)

Bahl, R., and R.M. Bird. 2018. *Fiscal Decentralization and Local Finance in Developing Countries: Development from Below.* Massachusetts: Edward Elgar Publishing, Inc.

Besley, T. & Case, A. Does electoral accountability affect economic policy choices? Evidences from gubernatorial term limits.The Quarterly Journal of Economics, 110 (3), 769- 798

Boex, Jameson, Jorge Martinez-Vazquez, and & Andrey Timofeev. 2004. *Subnational Government Structure and Intergovernmental Fiscal Relations*. International Studies Program, Andrew Young School of Policy Studies, Georgia State University, International Studies Program Working Paper Series, at AYSPS, GSU.

Commission on Audit. 2017. "2016 Annual Finanacial Report." *Local Government Volume II.* Quezon: COA.

Department of Finance–Bureau of Local Government Finance (DOF-BLGF). Various years. Electronic statement of receipts and expenditures (e-SRE). Manila, Philippines: DOF-BLGF. https://blgf.gov.ph/lgu-fiscal-data/ (accessed on July 3, 2021).

Diokno-Sicat, Charlotte Justine, Catharine E. Adaro, Ricxie B. Maddawin, Angel Faye Castillo, and Maria Alma P. G. Mariano. 2020. *Baseline Study on Policy and Governance Gaps for the Local Government Support Fund Assistance to Municipalities (LGSF-AM) Program.* Discussion Paper Series No. 2020-03, Quezon City: Philippine Institute for Development Studies.

Diokno-Sicat, Charlotte Justine, Angel Faye G. Castillo, and Ricxie B. Maddawin. 2020. *Philippine Local Government Public Expenditure Review: A Survey of National Government Local Government Support Programs.* Discussion Paper No. 2020-48, Quezon City: Philippine Institute for Development Studies.

Diokno-Sicat, Charlotte Justine D., and Ricxie B. Maddawin. 2018. "A Survey of LIterature on Philippine Decentralization." *PIDS Discussion Paper No. 2018-23.* Quezon City: Philippine Institute for Development Studies, December 26.

Diokno-Sicat, Charlotte Justine D., and Ricxie B. Maddawin. 2018. "A Survey of LIterature on Philippine Decentralization." *PIDS Discussion Paper No. 2018-23.* Quezon City: Philippine Institute for Development Studies, December 26.

Hagist, Christian, and Johannes Vatter. 2009. "Measuring Fiscal Sustainability on the Municipal Level: A German Case Study." *Research Center for Generational Contracts Paper* (35).

Kitchen, Harry. 2002. Municipal Revenue and Expenditure Issues in Canada. Toronto: Canadian Tax Foundation.

Kitchen, Harry, Melville McMillan and Anwar Shah. "Structural Design" In Local Public Finance and Economics: An International Perspective. Washington, DC: Palgrave Macmillan, Cham, pages 127-156, 2019. https://doi.org/10.1007/978-3-030-21986-4 (accessed August 21, 2021)

Morgan, Peter J., and Long Q. Trinh. 2016. Frameworks for Central–Local Government Relations and Fiscal Sustainability. ADBI Working Paper Series No. 605, Asian Development Bank Institute

Oates, Wallace E. 2008. On the Evolution of Fiscal Federalism: Theory and Institutions. National Tax Journal, 61(2): 313-334. https://www.jstor.org/stable/41790447 (accessed September 1, 2021)

Prud'home, Remy. 2005. Local Government Organization and Finance in France. A Chapter in Local Government Organization and Finance: Comparative International Practices, ed. Anwar Shah. Washington, DC: World Bank Institute.

Republic Act 7160. 1991. Local Government Code of the Philippines. Manila, Philippines: Congress of the Philippines. https://www.dilg.gov.ph/PDF_File/reports_resources/ dilg-reports-resources-2016120_5e0bb28e41.pdf (accessed August 4, 2021)

Shah, Anwar. 2004. *Fiscal Decentralization in Developing and Transition Economies: Progress, Problems and the Promise.* Policy Research Working Paper, Washington, D.C.: World Bank.

Sjoquist, David L. 1996. Local Government Fiscal Liability. Fiscal Research Program Report No. 96.2, Fiscal Research Program, Andrew Young School of Policy Studies, Georgia State University.

Stiglitz, Joseph, and Jay Rosengard. 2015. *Economics of the Public Sector (Fourth Edition).* New York: W.W.Norton & Company, Inc.

Velasco, Lawrence, Charlotte Justine Diokno-Sicat, Angel Faye Castillo, and Ricxie B. Maddawin. 2020. *The Philippine Local Government Water System.* Discussion Paper, Quezon City: Philippine Institute for Development Studies.

Appendix Table 1. Single-tier and two-tier types of Local Government Structure

Country	Type of Local Government Structure	Single-tier structure	Two-tier structure	
			Lower tier	Upper tier
Canada	Combination of Single-tier and two-tier	Certain number of municipality is responsible for all local services	**Municipality** - responsible for local roads and streets, fire protection, street lighting, sidewalks, local land use planning, local libraries, parks, and recreation.	**County, region or district** - responsible for water and sewer, solid waste disposal and sometimes collection, arterial roads, public transit, police , social services and social housing where these are partially (shared with the province) a local responsibility, public health and land ambulance where these are partially a local responsibility, regional land use planning, and economic development.
Japan	Two-tier		**Municipality (cities, towns, villages)** - responsible for public safety (firefighting, crime prevention, disaster prevention), health (establishing and operating hospitals), and environmental conservation (pollution control and garbage disposal). They are also responsible for local development (planning, roads, and agricultural development), establishing and maintaining various municipal facilities (public halls, nurseries, elementary and junior high schools, libraries, and welfare facilities), and providing welfare services.	**Prefecture** - oversees services that encompass a wide area including development plans, forest conservation, and flood control. They also serve as a conduit for communicating and coordinating policies between the central government and municipalities, and for advising and guiding municipalities on matters of organization and management including the formulation of amalgamation plans for municipalities. Also responsible for establishing and operating senior high schools and universities.
England	Combination of Single-tier and two-tier	Certain number of municipality is responsible for all local services	**District** - responsible for housing, leisure and recreation, environmental health, waste collection, planning applications, and local tax collection.	**County** - responsible for the majority of public services including education, secondary and tertiary roads, social services, libraries,

Country	Type of Local Government Structure	Single-tier structure	Two-tier structure	
			Lower tier	Upper tier
				waste disposal, fire, police, and strategic planning.
United Kingdom (Scotland, Wales, and Northern Ireland	Single-tier	All municipalities are responsible for all local services		
South Africa	Combination of Single-tier and two-tier		**Municipality (Metropolitan governments)** - responsible for electricity, parks, sports and recreation, local roads, street lighting, traffic control, and bylaw monitoring and enforcement.	**Districts** - responsible for environmental health, arterial roads, and water supply and sanitation. They were also created to provide those services that benefit from economies of scale; to provide coordinated planning across a large geographical area; and to handle those services that are primarily income redistributional in nature.
Chile	Combination of Single-tier and two-tier	Certain number of municipality is responsible for all local services	**Municipality** - Own-level responsibility includes municipal zoning plans, local development, regulation of local transport hygiene services, urbanism, and construction norms. Shared service responsibilities include public health, primary and secondary education, culture, training and economic development, tourism, traffic regulations, social housing, sanitary infrastructure, and citizen safety.	**Regions** - responsible for regional development, social and cultural development, the promotion of productive activities, municipal advice, rural roads, land management, and so on.
Germany	Combination of Single-tier and two-tier	Certain number of municipality is responsible for all local services	**Municipality** - mandatory municipality functions include local roads, town planning, housing, sewerage, waterways, education (primary schools),	**Districts** - mandatory district functions include secondary roads, public transport, spatial planning, fire protection, nature and landscape, hospitals,

Country	Type of Local Government Structure	Single-tier structure	Two-tier structure	
			Lower tier	Upper tier
			recreational areas, and social and youth welfare. Optional functions include cultural activities, economic development, tourism, local public transport, sports and leisure, and so on.	education (secondary schools), and so on. Optional functions include cultural activities, economic development, tourism, local public transport, sports and leisure, and so on.
Denmark	Combination of Single-tier and two-tier	Certain number of municipality is responsible for all local services	**Municipality** - responsible for social welfare, education including pre-school, primary, lower secondary and specialized education, health care (preventive medicine, dental care, home care, etc.), social welfare (child, elderly), support services (unemployment insurance, early retirement benefits, cash benefits, and sickness benefits), sports and culture, spatial planning, nature and local environment, job centers, integration of immigrants, local roads, and so on.	**Regions** - responsible for health care (hospitals, health insurance, and outpatient medicine), regional development, regional transport, and regional environment.
United States			Municipalities (City, towns, villages) and townships - responsible for a broad range of services including transportation (roads and public transit), public health services (often, especially counties, including hospitals), social welfare (often administration and sometimes, significant financing), police and fire protection, recreation and culture, and land use planning and local business regulation.	Metro, County - responsible for area-wide services that benefit from economies of scale, are income redistributional in nature, and would generate spillovers if provided by each of the lower tiers.

Source: Kitchen et al. (2019)

Appendix Table 2. Pairwise correlations

	Total Local Sources	Total Current Operating Income	General Public Services	Social Services	Education, Culture & Sports/ Manpower Development	Health, Nutrition & Population Control	Labor And Employment	Housing And Community Development	Social Services and Social Welfare	Economic Services	Debt Service (Fe) (Interest Expense & Other Charges)	Total Current Operating Expenditures	Capital/ Investment Expenditures
Total Local Sources	1												
Total Current Operating Income	0.8189*	1											
	0												
General Public Services	0.6408*	0.8373*	1										
	0	0											
Social Services	0.6429*	0.7286*	0.6119*	1									
	0	0	0										
Education, Culture & Sports/ Manpower Development	0.7033*	0.6732*	0.5495*	0.7608*	1								
	0	0	0	0									
Health, Nutrition & Population Control	0.6556*	0.7872*	0.7056*	0.8240*	0.6619*	1							
	0	0	0	0	0								
Labor And Employment	0.0776*	0.0776*	0.0407	0.1340*	0.1429*	0.0617	1						
	0.004	0.004	0.1317	0	0	0.0222							

	Total Local Sources	Total Current Operating Income	General Public Services	Social Services	Education, Culture & Sports/ Manpower Development	Health, Nutrition & Population Control	Labor And Employment	Housing And Community Development	Social Services and Social Welfare	Economic Services	Debt Service (Fe) (Interest Expense & Other Charges)	Total Current Operating Expenditures	Capital/ Investment Expenditures
Housing And Community Development	0.3026*	0.3209*	0.2057*	0.6310*	0.3579*	0.3715*	0.0837*	1					
	0	0	0	0	0	0	0.0019						
Social Services and Social Welfare	0.3495*	0.4415*	0.3871*	0.7762*	0.4154*	0.4573*	0.0601	0.2707*	1				
	0	0	0	0	0	0	0.026	0					
Economic Services	0.4157*	0.6200*	0.5286*	0.5169*	0.3925*	0.5877*	0.0235	0.1384*	0.3972*	1			
	0	0	0	0	0	0	0.3846	0	0				
Debt Service (Fe) (Interest Expense & Other Charges)	0.2825*	0.3454*	0.2849*	0.2367*	0.2451*	0.2434*	-0.0085	0.0802*	0.1580*	0.2570*	1		
	0	0	0	0	0	0	0.7542	0.0029	0	0			
Total Current Operating Expenditures	0.6975*	0.8925*	0.9335*	0.8138*	0.6725*	0.8316*	0.0724*	0.3590*	0.5761*	0.7177*	0.3360*	1	
	0	0	0	0	0	0	0.0073	0	0	0	0		
Capital/ Investment Expenditures	0.5101*	0.6068*	0.4996*	0.4646*	0.4617*	0.5339*	0.0801*	0.1573*	0.2678*	0.3622*	0.3018*	0.5431*	1
	0	0	0	0	0	0	0.003	0	0	0	0	0	
Population	0.5986*	0.8091*	0.7413*	0.7256*	0.6281*	0.7544*	0.0495	0.3474*	0.4701*	0.6441*	0.2699*	0.8358*	0.5030*
	0	0	0	0	0	0	0.067	0	0	0	0	0	0
Estimated Age of	-0.0438	-0.0805*	-0.1118*	-0.0503	-0.0488	-0.0425	0.0023	0.0003	-0.0557	-0.0388	-0.0707*	-0.0954*	-0.0205

	Total Local Sources	Total Current Operating Income	General Public Services	Social Services	Education, Culture & Sports/ Manpower Development	Health, Nutrition & Population Control	Labor And Employment	Housing And Community Development	Social Services and Social Welfare	Economic Services	Debt Service (Fe) (Interest Expense & Other Charges)	Total Current Operating Expenditures	Capital/ Investment Expenditures
Property Values													
	0.1046	0.0028	0	0.0624	0.0706	0.1157	0.9336	0.9903	0.0391	0.1511	0.0088	0.0004	0.4482
Estimated Age of Property Values (Updated / Outdated)	0.0881*	0.1456*	0.1519*	0.1502*	0.1269*	0.1386*	0.0336	0.0424	0.1344*	0.1159*	0.0535	0.1684*	0.0181
	0.0011	0	0	0	0	0	0.2132	0.1169	0	0	0.0475	0	0.5028
Provincial Poverty Incidence (2018)	-0.2306*	-0.1742*	-0.1460*	-0.1858*	-0.2117*	-0.1652*	-0.0018	-0.1567*	-0.0721*	-0.069	0.0188	-0.1634*	-0.1738*
	0	0	0	0	0	0	0.9475	0	0.0076	0.0106	0.4868	0	0
Average Annual Family Income per region	0.2427*	0.2040*	0.1465*	0.1934*	0.2257*	0.1898*	0.0255	0.1385*	0.0708*	0.0832*	0.0258	0.1703*	0.1412*
	0	0	0	0	0	0	0.3455	0	0.0087	0.002	0.339	0	0
Number of years serving as mayor	0.0013	0.0135	0.0249	-0.0023	-0.0004	-0.0141	-0.0082	-0.0237	0.0241	-0.0061	0.0128	0.0137	0.0105
	0.9627	0.6172	0.3559	0.9334	0.9874	0.6027	0.761	0.3798	0.3729	0.8225	0.6365	0.6113	0.6981
Internal Revenue Allotment	0.4632*	0.8279*	0.7566*	0.6362*	0.5013*	0.7196*	0.0606	0.2544*	0.4232*	0.6583*	0.8209*	0.3001*	0.4941*
	0	0	0	0	0	0	0.0249	0	0	0	0	0	0
Income Classification	-0.4193*	-0.6846*	-0.6801*	-0.5275*	-0.3797*	-0.5929*	-0.0629	-0.1756*	-0.4000*	-0.5726*	-0.2907*	-0.7207*	-0.4112*

	Total Local Sources	Total Current Operating Income	General Public Services	Social Services	Education, Culture & Sports/ Manpower Development	Health, Nutrition & Population Control	Labor And Employment	Housing And Community Development	Social Services and Social Welfare	Economic Services	Debt Service (Fe) (Interest Expense & Other Charges)	Total Current Operating Expenditures	Capital/ Investment Expenditures
	0	0	0	0	0	0	0.0198	0	0	0	0	0	0
Municipal Poverty Incidence (%) 2015	-0.2192*	-0.1635*	-0.1446*	-0.1733*	-0.1863*	-0.1525*	-0.0261	-0.1485*	-0.0715*	-0.0636	-0.0118	-0.1583*	-0.1617*
	0	0	0	0	0	0	0.3345	0	0.0081	0.0186	0.6628	0	0
Seal of Good Local Governance	0.0645*	0.0715*	0.0980*	0.0620*	0.0408	0.0635*	0.0256	-0.0081	0.0730*	0.0753*	0.0274	0.0974*	0.0751*
	0.02	0.01	0.00	0.02	0.13	0.02	0.34	0.76	0.01	0.01	0.31	0.00	0.01
Total land area	-0.0586	0.0617	0.0981*	0.0011	-0.0623	0.0373	-0.022	-0.0576	0.0525	0.0922*	0.036	0.0831*	0.0041
	0.0299	0.0223	0.0003	0.9679	0.0211	0.1673	0.4147	0.0329	0.0519	0.0006	0.1827	0.0021	0.8808
2009 General Fund	0.4987*	0.4017*	0.3131*	0.3459*	0.4454*	0.3442*	0.0173	0.1654*	0.1590*	0.2118*	0.1758*	0.3539*	0.2589*
	0	0	0	0	0	0	0.5219	0	0	0	0	0	0
2009 Special Education Fund	0.4441*	0.3580*	0.2798*	0.3066*	0.3957*	0.3063*	0.0178	0.1465*	0.1394*	0.1882*	0.1509*	0.3151*	0.2276*
	0	0	0	0	0	0	0.5098	0	0	0	0	0	0
2010 General Fund	0.7937*	0.6631*	0.5286*	0.5569*	0.7078*	0.5616*	0.0568	0.2339*	0.2752*	0.3245*	0.2305*	0.5797*	0.4616*
	0	0	0	0	0	0	0.0354	0	0	0	0	0	0
2010 Special Education Fund	0.7908*	0.6598*	0.5256*	0.5548*	0.7044*	0.5596*	0.0578	0.2335*	0.2738*	0.3227*	0.2182*	0.5763*	0.4553*
	0	0	0	0	0	0	0.0324	0	0	0	0	0	0

	Total Local Sources	Total Current Operating Income	General Public Services	Social Services	Education, Culture & Sports/ Manpower Development	Health, Nutrition & Population Control	Labor And Employment	Housing And Community Development	Social Services and Social Welfare	Economic Services	Debt Service (Fe) (Interest Expense & Other Charges)	Total Current Operating Expenditures	Capital/ Investment Expenditures
2011 General Fund	0.7824*	0.6016*	0.4262*	0.4348*	0.5375*	0.4400*	0.058	0.1915*	0.2146*	0.2491*	0.2043*	0.4606*	0.3941*
	0	0	0	0	0	0	0.0318	0	0	0	0	0	0
2011 Special Education Fund	0.7612*	0.5875*	0.4214*	0.4245*	0.5268*	0.4303*	0.0569	0.1811*	0.2116*	0.2452*	0.1588*	0.4522*	0.3808*
	0	0	0	0	0	0	0.035	0	0	0	0	0	0
2012 General Fund	0.7739*	0.6067*	0.4434*	0.4635*	0.5835*	0.4716*	0.0562	0.2021*	0.2229*	0.2683*	0.3128*	0.4877*	0.4405*
	0	0	0	0	0	0	0.0373	0	0	0	0	0	0
2012 Special Education Fund	0.7664*	0.6089*	0.4542*	0.4716*	0.5883*	0.4851*	0.0609	0.1995*	0.2293*	0.2770*	0.2114*	0.4959*	0.4351*
	0	0	0	0	0	0	0.024	0	0	0	0	0	0
2013 General Fund	0.2260*	0.2312*	0.1849*	0.1431*	0.1552*	0.1951*	0	0.0328	0.0621	0.1089*	0.2085*	0.1891*	0.2458*
	0	0	0	0	0	0	0.9988	0.2253	0.0215	0.0001	0	0	0
2013 Special Education Fund	0.2455*	0.2449*	0.2015*	0.1330*	0.1653*	0.1503*	0.0007	0.0389	0.0664	0.1039*	0.1807*	0.1941*	0.2338*
	0	0	0	0	0	0	0.9788	0.1502	0.0139	0.0001	0	0	0
2014 General Fund	0.3942*	0.3099*	0.2123*	0.1371*	0.1716*	0.1533*	0.0127	0.0544	0.0589	0.0734*	0.1052*	0.1931*	0.2232*
	0	0	0	0	0	0	0.6377	0.0439	0.0292	0.0066	0.0001	0	0

	Total Local Sources	Total Current Operating Income	General Public Services	Social Services	Education, Culture & Sports/ Manpower Development	Health, Nutrition & Population Control	Labor And Employment	Housing And Community Development	Social Services and Social Welfare	Economic Services	Debt Service (Fe) (Interest Expense & Other Charges)	Total Current Operating Expenditures	Capital/ Investment Expenditures
2014 Special Education Fund	0.3963*	0.3088*	0.2082*	0.1340*	0.1710*	0.1469*	0.0128	0.054	0.0577	0.0694	0.1039*	0.1887*	0.2223*
	0	0	0	0	0	0	0.6358	0.0457	0.0326	0.0101	0.0001	0	0
2015 General Fund	0.3143*	0.2731*	0.2070*	0.1579*	0.1868*	0.1666*	0.0123	0.0772*	0.0718*	0.0911*	0.1183*	0.2007*	0.2176*
	0	0	0	0	0	0	0.6502	0.0042	0.0078	0.0007	0	0	0
2015 Special Education Fund	0.3191*	0.2770*	0.2101*	0.1586*	0.1902*	0.1656*	0.0126	0.0769*	0.0727*	0.0945*	0.1221*	0.2037*	0.2181*
	0	0	0	0	0	0	0.6414	0.0044	0.0071	0.0005	0	0	0
2016 General Fund	0.3585*	0.3164*	0.2364*	0.1891*	0.2161*	0.2031*	0.0177	0.0898*	0.0890*	0.1157*	0.1395*	0.2347*	0.2549*
	0	0	0	0	0	0	0.5113	0.0009	0.001	0	0	0	0
2016 Special Education Fund	0.3600*	0.3169*	0.2381*	0.1866*	0.2166*	0.2002*	0.0176	0.0858*	0.0880*	0.1174*	0.1396*	0.2354*	0.2535*
	0	0	0	0	0	0	0.5151	0.0015	0.0011	0	0	0	0

Note: Small correlation 0.1 < | r | < .3; medium/moderate correlation 0.3 < | r | < .5; large/strong correlation | r | > .5 (Cohen 1988)

Appendix Table 2. Pairwise correlations (Continuation)

	Population	Estimated Age of Property Values	Estimated Age of Property Values (Updated / Outdated)	Provincial Poverty Incidence (%) 2018	Average Annual Family Income per region (in Thousand)	Number of years serving as mayor	Internal Revenue Allotment	Income Classification	Municipal Poverty Incidence (%) 2015	Seal of Good Local Governance	Total land area
Population	1										
Estimated Age of Property Values	-0.0870*	1									
	0.0013										
Estimated Age of Property Values (Updated / Outdated)	0.1818*	-0.5960*	1								
	0	0									
Provincial Poverty Incidence (2018)	-0.1966*	-0.1091*	0.0423	1							
	0	0.0001	0.117								
Average Annual Family Income per region	0.2039*	0.2130*	-0.0842*	-0.6625*	1						
	0	0	0.0018	0							
Number of years serving as mayor	0.0049	-0.0198	-0.0246	0.0407	-0.0239	1					
	0.8548	0.4632	0.363	0.132	0.3755						
Internal Revenue Allotment	0.8363*	-0.1108*	0.2064*	-0.0552	0.0902*	0.0291	1				

	Population	Estimated Age of Property Values	Estimated Age of Property Values (Updated / Outdated)	Provincial Poverty Incidence (%) 2018	Average Annual Family Income per region (in Thousand)	Number of years serving as mayor	Internal Revenue Allotment	Income Classification	Municipal Poverty Incidence (%) 2015	Seal of Good Local Governance	Total land area
	0	0	0	0.0409	0.0008	0.281					
Income Classification	-0.6958*	0.0745*	-0.1466*	0.1449*	-0.1126*	-0.0035	-0.7803*	1			
	0	0.0057	0	0	0	0.8961	0				
Municipal Poverty Incidence (%) 2015	-0.1673*	-0.1621*	0.1603*	0.7715*	-0.5972*	0.0362	-0.0472	0.1511*	1		
	0	0	0	0	0	0.1806	0.0806	0			
Seal of Good Local Governance	0.0638*	0.0316	-0.0031	-0.2689*	0.1743*	-0.0062	0.0695*	-0.1539*	-0.2311*	1	
	0.02	0.24	0.91	0.00	0.00	0.82	0.01	0	0		
Total land area	0.0081	-0.0944*	0.1096*	0.1656*	-0.1202*	0.0118	0.1775*	-0.1344*	0.2428*	0.0595	1
	0.7643	0.0005	0	0	0	0.6622	0	0	0	0.0275	
2009 General Fund	0.2938*	-0.031	0.0586	-0.1476*	0.1658*	-0.0076	0.2260*	-0.2556*	-0.1472*	0.0039	-0.0415
	0	0.2505	0.03	0	0	0.7787	0	0	0	0.8859	0.1245
2009 Special Education Fund	0.2575*	-0.0326	0.0548	-0.1340*	0.1457*	-0.0033	0.2016*	-0.2350*	-0.1349*	0.0063	-0.0332
	0	0.2277	0.0422	0	0	0.9033	0	0	0	0.8142	0.2197
2010 General Fund	0.5129*	-0.0568	0.0987*	-0.2169*	0.2485*	-0.0095	0.3965*	-0.3515*	-0.1974*	0.0243	-0.0578
	0	0.0354	0.0003	0	0	0.7262	0	0	0	0.3676	0.0324
2010 Special Education Fund	0.5093*	-0.055	0.0966*	-0.2175*	0.2454*	-0.0071	0.3940*	-0.3491*	-0.1963*	0.024	-0.0574
	0	0.0415	0.0003	0	0	0.7936	0	0	0	0.3735	0.0334

	Population	Estimated Age of Property Values	Estimated Age of Property Values (Updated / Outdated)	Provincial Poverty Incidence (%) 2018	Average Annual Family Income per region (in Thousand)	Number of years serving as mayor	Internal Revenue Allotment	Income Classification	Municipal Poverty Incidence (%) 2015	Seal of Good Local Governance	Total land area
2011 General Fund	0.3998*	-0.0428	0.0753*	-0.1814*	0.2178*	0.0159	0.3074*	-0.2964*	-0.1748*	0.0232	-0.0551
	0	0.1126	0.0052	0	0	0.5556	0	0	0	0.3911	0.0414
2011 Special Education Fund	0.3923*	-0.0447	0.0781*	-0.1790*	0.2104*	0.0122	0.3033*	-0.2910*	-0.1686*	0.0201	-0.0534
	0	0.098	0.0038	0	0	0.6513	0	0	0	0.4577	0.048
2012 General Fund	0.4120*	-0.0346	0.0578	-0.1952*	0.2287*	0.0117	0.3203*	-0.2966*	-0.1834*	0.0169	-0.0588
	0	0.1999	0.0323	0	0	0.6651	0	0	0	0.5321	0.0295
2012 Special Education Fund	0.4256*	-0.0364	0.0623	-0.1958*	0.2254*	0.0125	0.3303*	-0.3019*	-0.1822*	0.0157	-0.0597
	0	0.1775	0.0209	0	0	0.6426	0	0	0	0.561	0.027
2013 General Fund	0.2512*	-0.0216	0.0346	-0.1845*	0.2348*	-0.0381	0.1599*	-0.1262*	-0.1903*	0.06	-0.0719*
	0	0.4245	0.2001	0	0	0.1581	0	0	0	0.0263	0.0077
2013 Special Education Fund	0.2621*	-0.0297	0.049	-0.2008*	0.2435*	-0.03	0.1671*	-0.1290*	-0.2008*	0.0652	-0.0722*
	0	0.2713	0.0697	0	0	0.2673	0	0	0	0.0158	0.0075
2014 General Fund	0.2249*	-0.0404	0.0569	-0.1911*	0.2223*	-0.0225	0.1369*	-0.1284*	-0.1876*	0.0611	-0.0669
	0	0.1347	0.0351	0	0	0.4048	0	0	0	0.0235	0.0132
2014 Special Education Fund	0.2193*	-0.04	0.0572	-0.1892*	0.2200*	-0.0214	0.1330*	-0.1257*	-0.1863*	0.0602	-0.0666
	0	0.1389	0.0341	0	0	0.4272	0	0	0	0.0258	0.0136
2015 General Fund	0.2479*	-0.0356	0.0528	-0.2078*	0.2372*	-0.0324	0.1510*	-0.1305*	-0.2072*	0.0644	-0.0795*
	0	0.1868	0.0505	0	0	0.2296	0	0	0	0.0169	0.0032

	Population	Estimated Age of Property Values	Estimated Age of Property Values (Updated / Outdated)	Provincial Poverty Incidence (%) 2018	Average Annual Family Income per region (in Thousand)	Number of years serving as mayor	Internal Revenue Allotment	Income Classification	Municipal Poverty Incidence (%) 2015	Seal of Good Local Governance	Total land area
2015 Special Education Fund	0.2492*	-0.0354	0.0534	-0.2055*	0.2363*	-0.0321	0.1528*	-0.1327*	-0.2053*	0.0645	-0.0786*
	0	0.1898	0.048	0	0	0.2351	0	0	0	0.0168	0.0036
2016 General Fund	0.2553*	-0.0423	0.0648	-0.2072*	0.2381*	-0.0423	0.1809*	-0.1543*	-0.2053*	0.0592	-0.0718*
	0	0.1168	0.0164	0	0	0.1173	0	0	0	0.0282	0.0078
2016 Special Education Fund	0.2546*	-0.0425	0.0654	-0.2055*	0.2342*	-0.0436	0.1804*	-0.1551*	-0.2035*	0.0598	-0.0715*
	0	0.1153	0.0154	0	0	0.1066	0	0	0	0.0268	0.0081

Appendix Table 2. Pairwise correlations (Continuation)

	2009 General Fund	2009 Special Education Fund	2010 General Fund	2010 Special Education Fund	2011 General Fund	2011 Special Education Fund	2012 General Fund	2012 Special Education Fund	2013 General Fund	2013 Special Education Fund	2014 General Fund	2014 Special Education Fund	2015 General Fund	2015 Special Education Fund	2016 General Fund	2016 Special Education Fund
2009 General Fund	1															
2009 Special Education Fund	0.9902*	1														
	0															
2010 General Fund	0.7649*	0.7166*	1													
	0	0														

	2009 General Fund	2009 Special Education Fund	2010 General Fund	2010 Special Education Fund	2011 General Fund	2011 Special Education Fund	2012 General Fund	2012 Special Education Fund	2013 General Fund	2013 Special Education Fund	2014 General Fund	2014 Special Education Fund	2015 General Fund	2015 Special Education Fund	2016 General Fund	2016 Special Education Fund
2010 Special Education Fund	0.7685*	0.7209*	0.9972*	1												
	0	0	0													
2011 General Fund	0.6578*	0.6183*	0.8368*	0.8385*	1											
	0	0	0	0												
2011 Special Education Fund	0.6666*	0.6296*	0.8366*	0.8424*	0.9915*	1										
	0	0	0	0	0											
2012 General Fund	0.5448*	0.4847*	0.7961*	0.7916*	0.8550*	0.8269*	1									
	0	0	0	0	0	0										
2012 Special Education Fund	0.5513*	0.4931*	0.8092*	0.8122*	0.8733*	0.8692*	0.9690*	1								
	0	0	0	0	0	0	0									
2013 General Fund	0.1377*	0.1198*	0.2222*	0.2207*	0.2080*	0.2057*	0.1935*	0.2012*	1							
	0	0	0	0	0	0	0	0								
2013 Special Education Fund	0.1396*	0.1214*	0.2205*	0.2188*	0.2286*	0.2261*	0.2075*	0.2161*	0.9250*	1						
	0	0	0	0	0	0	0	0	0							

	2009 General Fund	2009 Special Education Fund	2010 General Fund	2010 Special Education Fund	2011 General Fund	2011 Special Education Fund	2012 General Fund	2012 Special Education Fund	2013 General Fund	2013 Special Education Fund	2014 General Fund	2014 Special Education Fund	2015 General Fund	2015 Special Education Fund	2016 General Fund	2016 Special Education Fund
2014 General Fund	0.2136*	0.1898*	0.3457*	0.3466*	0.4583*	0.4569*	0.3736*	0.3966*	0.7915*	0.8497*	1					
	0	0	0	0	0	0	0	0	0	0						
2014 Special Education Fund	0.2139*	0.1902*	0.3463*	0.3473*	0.4628*	0.4617*	0.3773*	0.4007*	0.7764*	0.8474*	0.9977*	1				
	0	0	0	0	0	0	0	0	0	0	0					
2015 General Fund	0.1706*	0.1504*	0.2818*	0.2810*	0.3298*	0.3277*	0.2782*	0.2943*	0.8252*	0.8890*	0.9185*	0.9159*	1			
	0	0	0	0	0	0	0	0	0	0	0	0				
2015 Special Education Fund	0.1724*	0.1521*	0.2839*	0.2835*	0.3343*	0.3326*	0.2828*	0.2993*	0.8241*	0.8954*	0.9264*	0.9258*	0.9977*	1		
	0	0	0	0	0	0	0	0	0	0	0	0	0			
2016 General Fund	0.1950*	0.1714*	0.3252*	0.3244*	0.3725*	0.3703*	0.3152*	0.3334*	0.8455*	0.8801*	0.9302*	0.9268*	0.9361*	0.9433*	1	
	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
2016 Special Education Fund	0.1970*	0.1725*	0.3253*	0.3247*	0.3725*	0.3707*	0.3169*	0.3355*	0.8396*	0.8802*	0.9307*	0.9282*	0.9349*	0.9435*	0.9983*	1
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Annex A. Expenditure assignment based on the Local Government Code of 1991

Department/ Agency/GOCC	Functions/ Services	Provinces	Municipalities	Cities[1]	Barangays
❖ **Department of Agriculture and Department of Agrarian Reform**	Agriculture Extension and On-site Research Services Distribution of Production Inputs under Banner Programs, including Fisheries Market Development and Assistance Infrastructure Facilities Development	Agricultural extension and on-site research services and facilities which include the prevention and control of plant and animal pests and diseases; dairy farms, livestock markets, animal breeding stations, and artificial insemination centers; and assistance in the organization of farmers and fishermen's cooperatives and other collective organizations, as well as the transfer of appropriate technology	• Agriculture extension on-site research services and facilities related to agriculture and fishery activities related to dispersal of livestock, poultry, fingerlings and seedlings; operation of demonstration farms; improvement of local distribution channels, inter-barangay irrigation systems; and enforcement of fishery laws • Fish ports		Agricultural support services which include planting materials distribution system and operation of farm produce collection and buying stations
❖ **Department of Education**	Local Infrastructure Services	-	School buildings and other facilities for public elementary and secondary schools		-
		-	Information services which include maintenance of public library		Information and reading center
❖ **Department of**	Natural Resource	Enforcement of forestry laws limited	Implementation of community-		-

[1] All the services and facilities of the municipality and province, and in addition thereto, adequate communication and transportation facilities and support for education, police and fire services and facilities

Department/ Agency/GOCC	Functions/ Services	Provinces	Municipalities	Cities[1]	Barangays
Environment and Natural Resources	Management Services	to community-based forestry projects, pollution control law, small scale mining law, and other laws on environment protection; and mini-hydroelectric projects for local purposes	based forestry projects which include integrated social forestry programs and similar projects which include integrated social forestry programs and similar projects; management and control of communal forests with an area not exceeding fifty (50) square kilometers; establishment of tree parks, greenbelts and similar forest development projects		
	Environmental Services	Enforcement of pollution control law	Solid waste disposal system or environmental management system		Services and facilities related to beautification and solid waste collection
❖ **Department of Finance**	Other Services: Revenue Mobilization Services	Upgrading and modernization of tax information and collection services through the use of computer hardware and software and other means	Information services which include tax and marketing information systems		
❖ **Department of Health, Department of Science and Technology-Food and Nutrition Research Institute, and** **National Economic and Development**	Health Services	Health services which include hospitals and other tertiary health services	• Health services which include the implementation of programs and projects on: o Primary health care, o Maternal and child care, and o Communicable and non-communicable disease control services • Access to secondary and tertiary health services • Purchase of medicines,		Health services which include the maintenance of barangay health centers

Department/ Agency/GOCC	Functions/ Services	Provinces	Municipalities	Cities[1]	Barangays
Authority- Commission on Population and Development			medical supplies, and equipment needed to carry out the services herein enumerated • Rehabilitation programs for victims of drug abuse • Nutrition services and family planning services • Clinics, health centers, and other health facilities necessary to carry out health services		
❖ **Department of Information and Communications Technology- National Telecommunications Commission**		Inter-municipal telecommunications services	-		-
❖ **Department of the Interior and Local Government**	Other Services: Local Government Development and Supervision; Maintenance of Peace and Order	Provincial buildings, freedom parks and other public assembly areas and similar facilities	Municipal buildings, cultural centers, public parks, including freedom parks, playgrounds, and sports facilities and equipment, and other similar facilities		-
		Provincial jails	Sites for police and fire stations and substations and municipal jail		-
		-	Public markets, slaughterhouses, and other municipal enterprises		Satellite or public market, where viable
		-	Public cemetery		-

Department/ Agency/GOCC	Functions/ Services	Provinces	Municipalities	Cities[1]	Barangays
❖ **Department of Justice**		-	-		Maintenance of *Katarungang Pambarangay*
❖ **Department of Labor and Employment**	Other Services: Employment Facilitation	-	Information services which include job placement information systems		-
❖ **Department of Public Works and Highways**	Local Infrastructure Services	Provincial roads and bridges, inter-municipal waterworks, drainage and sewerage, flood control, reclamation projects	• Municipal roads and bridges, small water impounding projects and other similar projects, rainwater collectors and water supply systems, seawalls, dikes, drainage and sewerage, flood control • Facilities related to general hygiene and sanitation		• Maintenance of barangay roads and bridges and water supply systems • Infrastructure facilities such as multi-purpose hall, multi-purpose pavement, plaza, sports center, and other similar facilities • Services and facilities related to general hygiene and sanitation
❖ **Department of Social Welfare and Development, Office of Presidential Adviser on the Peace Process, and National Youth Commission**	Social Welfare Services	Social welfare services including programs for rebel returnees, relief operations and population development services	• Social welfare services including child and youth programs, family and community programs, welfare programs for women, elderly and persons with disabilities, community-based rehabilitation programs for vagrants, beggars, street children, juvenile delinquents • Livelihood and other pro-poor projects		Social welfare services such as maintenance of day-care centers

Department/ Agency/GOCC	Functions/ Services	Provinces	Municipalities	Cities[1]	Barangays
❖ **Department of Trade and Industry**		Investment support services, including access to credit financing	Information services on investments information systems		-
❖ **Department of Trade and Industry and Department of Science and Technology**	Other Services	Industrial research and development services, as well as the transfer of appropriate technology	-		-
❖ **Department of Transportation**	Transportation Services	-	Infrastructure facilities such as traffic signals and road signs, and similar facilities		-
❖ **Department of Tourism**	Tourism Services	Tourism development and promotion programs	Tourism facilities and other tourist attractions, including the acquisition of equipment, regulation and supervision of business concessions, and security services for such facilities		-
❖ **National Housing Authority and Social Housing Finance Corporation**	Housing Services	Programs and projects for low-cost housing and other mass dwelling	-		-
❖ **National Irrigation Administration**	Local Infrastructure Services	Irrigation systems	Communal irrigation		-

Annex B. Percentage of the Salary Schedule

	For Provinces/Cities	For Municipalities
Special Cities	100%	
1st Class	100%	90%
2nd Class	95%	85%
3rd Class	90%	80%
4th Class	85%	75%
5th Class	80%	70%
6th Class	75%	65%

Source: Congress of the Philippines, Republic Act 1466

Annex C. Post-estimation checks for endogeneity

Regression table 1: Estimates: Total Local Revenue

```
    Variable |       VIF       1/VIF
-------------+----------------------
       class |      2.02    0.495578
         pop |      2.01    0.497840
  munipi2015 |      1.17    0.857755
        land |      1.12    0.893703
   smvupdate |      1.08    0.927181
    SGLG2017 |      1.03    0.975084
       mayor |      1.00    0.997307
-------------+----------------------
    Mean VIF |      1.35

. estat ovtest

Ramsey RESET test using powers of the fitted values of lntlocrev
       Ho:  model has no omitted variables
                 F(3, 1327) =     27.12
                   Prob > F =      0.0000
```

Regression table 2: Estimates: Total Current Operating Expenditures

Variable	VIF	1/VIF
class	2.02	0.495578
pop	2.01	0.497840
munipi2015	1.17	0.857755
land	1.12	0.893703
smvupdate	1.08	0.927181
SGLG2017	1.03	0.975084
mayor	1.00	0.997307
Mean VIF	1.35	

```
. estat ovtest

Ramsey RESET test using powers of the fitted values of lntcuropexp
       Ho:  model has no omitted variables
                 F(3, 1327) =      8.45
                   Prob > F =      0.0000
```

Regression table 3: Estimates: Total LGU Expenditures

Variable	VIF	1/VIF
class	2.02	0.495578
pop	2.01	0.497840
munipi2015	1.17	0.857755
land	1.12	0.893703
smvupdate	1.08	0.927181
SGLG2017	1.03	0.975084
mayor	1.00	0.997307
Mean VIF	1.35	

```
. estat ovtest

Ramsey RESET test using powers of the fitted values of lntotlguexp
       Ho:  model has no omitted variables
                 F(3, 1327) =      8.36
                   Prob > F =      0.0000
```