Global Municipal Database Metadata, and Methods and Initial Results

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Abstract

This paper describes the properties of a new database for municipal finance by UN-Habitat. The database provides standard indicators on the budgets of municipal governments in cities worldwide. It is designed based on the core mandates of municipal governments at the local level and provides per capita expenditures, revenues and debt. The GMD is the first database to provide standardized local-level per-capita budget data spanning across countries and regions. Though the sample is still small, the database highlights the importance of focusing on financial data at municipal level, with the city as a subject. The database shares a common sample of cities with the Atlas of Urban Expansion, a database on the urban spatial layout of cities, allowing for examination of the important link between urban spatial layout with municipal finances.

What is the Global Municipal Database and why is it important?

The Global Municipal Database (GMD)[1] is a collection of indicators for a sample of municipal governments around the world, focusing on budget data and led by UN-Habitat and partners. The data was compiled with cooperation from city-based researchers the technical staff of municipalities from developed and developing countries. The data is based on core mandates, with a standard set of budget responsibilities identified and noted for each government in the database. The selection of cities and the original points of contact for city-based researchers comes from the Atlas of Urban Expansion project,[2] which contains data on the spatial layout of cities, but no data on municipal finance. The Atlas of Urban Expansion and was prepared by New York University with support from UN-Habitat and Lincoln Institute of Land Policy.

Globally, municipal governments are playing an increasing role in urban development and service provision, with a trend of increasingly decentralized governance in many regions.[3] However, municipal governments often do not have the capacity or resources to manage their physical, economic and population growth and successfully deliver on their expanding mandates.[4]

Understanding municipalities is a central objective of the *New Urban Agenda*, the document adopted by UN member states at the Habitat III conference[5] in Quito in November 2016, which set guidelines for cities to achieve sustainable urbanization. Municipal finance is one of the main elements of the *New Urban Agenda,* which recommends improving the link between urban planning and design, the urban

[1] GMD database located at globalmunicipaldata.org
[2] The Atlas of Urban Expansion can be found at www.atlasofurbanexpansion.org
[3] Ivanyna & Shaw (2012).
[4] UN-Habitat (2009).
[5] United Nations (2016).

legal framework, and public finance, as a way to design better policies and achieve sustainable urbanization.[6]

There are a number of efforts worldwide to look at national-level public finances.[7] There have also been efforts to compile data on local government spending by country, in terms of percentage of total government expenditure and sometimes the breakdown of local income and expenditures according to the standard classification of the functions of government (COFOG).[8] Such efforts include the World Bank's Fiscal Decentralization Indicators database,[9] which has data from 1972 to 2000 for 105 countries (most countries have data for only some years). The International Monetary Fund's (IMF) Government Finance Statistics Yearbook for 2007 reported the distribution of revenues and expenditures for six countries in Asia, Africa and Latin America in addition to countries in Europe where such data is more readily available.[10] United Cities and Local Governments' (UCLG) Second Global Report on Decentralization and Local Democracy[11] quantifies percentage of all government expenditures at the local level for 23 African countries, 13 Asian countries and 16 Latin American countries in addition to data from European countries. OECD and UCLG (2016) have done this even more comprehensively for 90 countries worldwide and include cross-country comparisons of expenditures and revenues by category.

However, all of these efforts aggregate and report local finance data at the country-level. The GMD is the first database of its kind, which reports city-specific data rather than country-level aggregations, and includes per capita finance data. The GMD includes standardized municipal budget indicators for 94 cities, the majority being in Asia, Africa and Latin America.

The GMD is intended to fill a knowledge gap about typical levels of spending and revenues within local governments around the world, including own-source revenues, capital investment expenditures, total spending per capita and debt. This information can be used by the municipal governments themselves to compare their budgets with their peers and track their progress.

The GMD can also be used by researchers, intergovernmental agencies and development agencies to identify trends in municipal finance and bring to light common issues and challenges as a way of guiding the international dialogue and development of technical support tools and publications.

Defining the municipality

A municipality is defined by the Merriam Webster dictionary as "a primarily urban political unit having corporate status and usually powers of self-government"[12], the term varies depending on the context and laws, but it is always a political jurisdiction with some level of self-government and autonomy on local administration. Limited autonomy and power over local rules is a key element, as municipalities came from the Latin word 'Municipalis' or 'Municipiun' meaning the communities that provided Rome

[6] Salat, Kamiya & Bourdic (2017).
[7] For example, the IMF's public finance datasets (imf.org/en/Data), OECD's database (data.oecd.org), the Public Expenditure and Financial Accountability Framework (pefa.org) and the *World Factbook* published by the U.S. Central Intelligence Agency (www.cia.gov/library/publications/the-world-factbook/).
[8] UN Statistics Division (2003)
[9] Available at www1.worldbank.org/publicsector/decentralization/fiscalindicators.htm
[10] International Monetary Fund (2007).
[11] Elgar [Ed.] (2011).
[12] Merriam Webster (2017). Accessed from https://www.merriam-webster.com/dictionary/municipality

with Troops in exchange for citizenship and a certain level of autonomy when incorporated into the Roman state. [13]

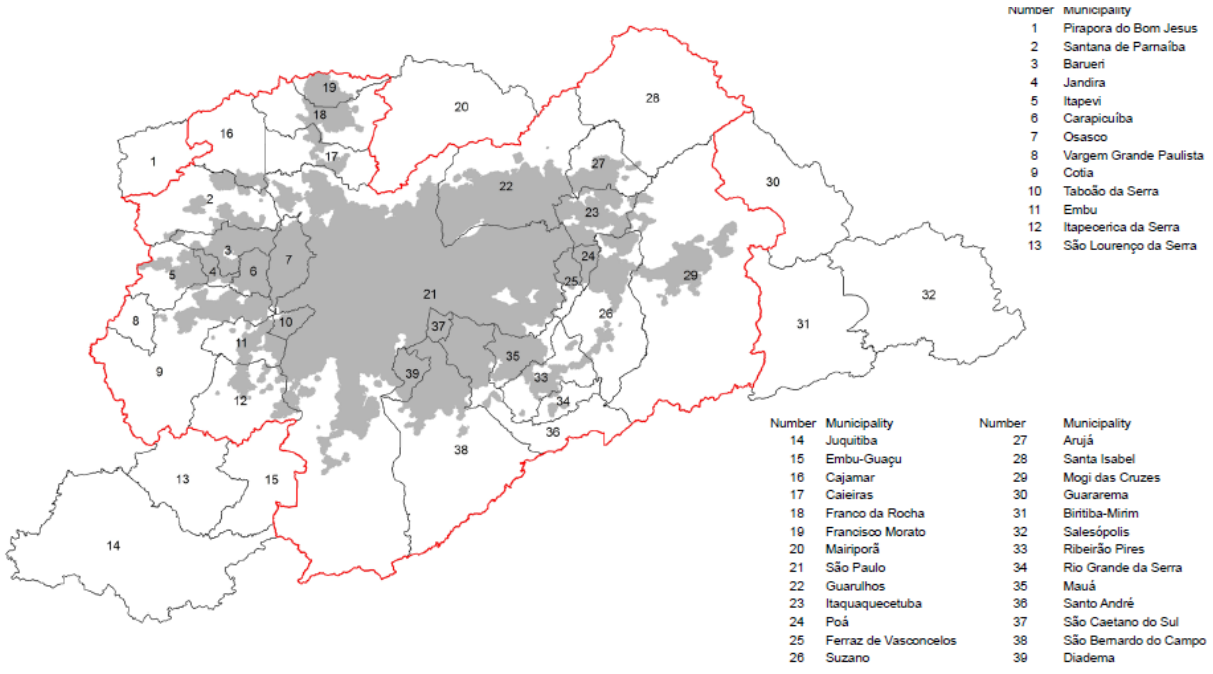
Today the term municipality applies to different kinds of settlements, which may include metropolises, cities, boroughs, towns, or villages. There is not one standard term, as in Australia, municipalities are called Local Government Areas (LAG)[14], whereas in the US, local governments include both counties and municipalities, which usually have overlapping jurisdiction[15], in Argentina the 'municipalidad' is the smallest administrative division of a city.[16]

Within the taxonomy of urban areas, municipalities are often within a larger zone or layer or government, for example a province, governorate or metropolitan area. The term "city" may be used to describe a municipality, whereas a metropolitan area refers to the urban agglomeration which may include a collection of municipalities.[17] The economic classification of a city or metro area, often aligning with the area of the urban labour market,[18] does not necessarily correspond to the political definition. For example, the U.S. Census Bureau reports on metropolitan areas defined in part by a large population nucleus and adjacent communities with "a high degree of social and economic integration with the core as measured by commuting ties" (Office of Management and Budget, 2010, p.37246). The metropolitan statistical area defined for Cleveland, Ohio, a mid-sized city in the U.S., contains 169 municipalities, each with its own local government. A mismatch between administrative municipalities and the spatial extent of the urban labor market is common, especially for large cities. São Paulo, Brazil, is another example, with 39 municipalities in the agglomeration (see Figure 1).

In recent years, driven by the fast-paced growth of cities, a new category is emerging: the megacity, with more than 10 million inhabitants. Cities such as Cairo, Lagos, Mexico City, Mumbai, New York, São Paulo and Tokyo feature within this classification. China could exceed this concept by an order of magnitude by connecting the labour markets within clusters of cities to form city clusters with populations over 100 million in the case of the Beijing-Tianjin-Hebei cluster, and over 60 million in four other clusters.[19] The Pearl River Delta is already considered by some to be the world's largest metro area, with "42 million inhabitants in 2010, more than some entire countries, including Argentina, Australia, Canada, and Malaysia," (World Bank, 2015, p. 22).

[13] Garsney (1987).
[14] Australian Bureau of Statistics, (2005)
[15] The White House, n.d.
[16] Cao (2008).
[17] Katz (2013)
[18] Angel et al. (2016A)
[19] Bertaud (2016)

Figure 1: The urban extent of São Paulo, Brazil (grey), showing the administrative boundaries of the 39 municipalities that constituted its metropolitan region. The urban extent of São Paulo defined using satellite imagery overlaps with 31 municipalities (bounded in a red line). The GMD provides data on São Paulo municipality (#21 below).[20]



For the purposes of the Global Municipal Database, which focusses on municipal finances, the operational definition of the municipality is the lowest level of local government with some degree of budget autonomy in terms of both revenues and expenditures. The public services that fall within the municipality's mandate differ city by city, and in accordance with the country's level of decentralization. Key components of the municipality's budgetary responsibilities are listed in the database, as well as the percentage of revenues that are raised by the municipality itself (own-source revenues) rather than transfers from a higher level of government. This data enables comparison of municipalities' mandates and levels of decentralization.

Data definitions and coverage

The GMD measures local budget data on a brief set of indicators common to all cities in the database. It does not include full budget detail for any of the cities listed, but instead includes budget figures on total spending, capital expenditures, own-source revenues and debt service payments. The database also includes total expenditures and capital expenditures within a set of major responsibilities of each municipality where available, as well as an indication whether such responsibilities fall within the mandate of the municipality.

[20] Figure from Angel, et al. (2016), p. 10.

The GMD's data coverage is intended to blend simplicity with the ability to compare between local governments. It achieves this in the following ways:

- The dataset provides a standard set of indicators defined the same way for each municipality.
- The dataset notes whether major expenditure types (for example, solid waste management, water, public safety, etc.) fall within the municipality's mandate and budget responsibilities. This allows the data user to account for potentially differing mandates when comparing total spending.
- The list of data is relatively brief, attempting to cover only the major categories of expenditures and revenues, in order to promote ease of data collection and reporting.
- The dataset includes population, and per-capita budget figures to give meaning to the budget data and facilitate comparisons between local governments.

Table 1 defines the data categories included in the GMD.

GMD Data Definitions

Table 1: GMD Data Definitions

Basic population and budget data	**Definition**
Population	The official estimate of the number of people within local government boundaries (same boundaries covered by budget).
Population growth rate	Official estimate of the annual growth rate of the local population.
Total budget	Total finalized budget figure for the local government.
Own-source revenue	Total revenue raised by the local government from taxes, fees, investments, etc. This excludes all transfers from other government entities.
Capital expenditures	Expenditures on purchases or creation of lasting assets, including land, infrastructure, buildings or equipment. This does not include normal government operations and does not include debt service.
Debt service payments	Total annual payments on principal and interest of any local government debts, including loans, bonds, central bank debt, etc.
Responsibilities covered by budget	**Definition**
Streets	This includes vehicular, pedestrian and bicycle infrastructure. Capital costs may include infrastructure planning and engineering, land acquisition, paving and associated lighting, drainage, street furniture and plantings, and major rehabilitation.
Public transit	This includes public busses or rail, or programmes to subsidize or support private transit systems including minibus taxis. Capital costs may include infrastructure planning and engineering, stations and stops, parking installation, vehicle purchases, fare collection systems and other assets as well as their replacement or major rehabilitation.
Building codes and enforcement	Building codes regulate structures in terms of building materials, engineering standards, aesthetic design, floor space and height, but not building use (i.e. residential vs. commercial vs. industrial). This budget category includes the costs of building code drafting, communication, inspection and enforcement programmes. Capital costs to such programmes may include vehicles, facilities, replacement or major rehabilitation of assets.

Sanitation	This includes infrastructure planning and engineering, sewer systems, wastewater treatment, septic tanks, public latrines and subsidies to private sanitation systems, asset replacement and major rehabilitation.
Solid waste management	This includes collection, disposal, communication about solid waste and enforcement. Capital costs may include infrastructure planning and engineering, trucks, dump sites, sorting centres or other recycling facilities, asset replacement and major rehabilitation.
Water	This includes treatment and distribution. Capital costs may include infrastructure planning and engineering, wells and pump equipment, reservoirs or holding facilities, treatment facilities, piping, trucks, kiosks or other buildings, asset replacement or major rehabilitation.
Energy	This includes generation, transmission and distribution. Capital costs may include infrastructure planning and engineering, facilities, transmission lines, equipment, asset replacement and major rehabilitation.
Communication	(telecom & internet) This includes transmission, networks and subsidies. Capital costs may include infrastructure planning and engineering, telecom and internet facilities, transmission lines or wireless network infrastructure, asset replacement and major rehabilitation.
Safety and security, police, criminal justice	This includes public safety department or programming, police, courts, enforcement and jails or prisons. Capital costs may include infrastructure, vehicles, facilities, asset replacement and major rehabilitation.
Education	This includes public education at all levels, training and vocational education, and subsidies to education. Capital costs may include facilities, vehicles and other assets, as well as their replacement or major rehabilitation.
Health	This includes hospitals and medical offices, maternal and child health centres, community health centres and health education and programming. Capital costs may include facilities, equipment, vehicles and other assets, as well as their replacement or major rehabilitation.
Public housing	This includes any programme that subsidizes housing for specific populations based on income, disability or disadvantage. Capital costs may include land acquisition, construction of housing and programme assets and facilities.
Other major expenditure	This includes any budgeted item that is more than 10% of the local government budget and is not listed above. This may include local economic development, cultural programming, youth programming, pensions, social welfare, transfers to other level of government, etc.

GMD Data Notes:

- All financial data is reported in US$, with local currency converted using the official IMF exchange rate corresponding to the year of the data.
- Data has been rounded to the nearest dollar.
- Where reported year of population differed from the budget year, population was calculated for the budget year using the reported population growth rate.
- These figures reflect the implemented budget rather than planned budget wherever possible.
- Where the database indicates that there is municipal budget responsibility for a given expenditure category, it is possible that the municipality has partial or shared responsibility the expenditure category.

- Where an urban metro area is governed by several municipalities, the GMD reports budgetary data on the one municipal government entity for the area with the largest population.

GMD Data Limitations

One major limitation is that the data does not account for cases where budget responsibilities overlap with other levels of government. For example, a city may be responsible for some streets, while a county, regional government, state government or other overlapping jurisdiction may be responsible for other streets within the municipal boundaries. Cases where a municipality has all or part of the responsibility for a given expenditure category are both coded with a "yes" under that category. Finding out what percentage of expenditures fall to the municipal government within each expenditure category was beyond the scope of this project and would be difficult due to the wide variety of governance structures globally.[21]

Another limitation is potential differences in budget category definitions between local governments. To the extent possible, reporting followed the standardized data definitions in Table 1; however, it was not always possible to see exactly what items fell within a publicly reported budget line to ensure it matched the GMD data definition. This was particularly the case when separating capital expenditures from operating expenditures.

Lastly, it was not always possible to find figures on the total and capital expenditures within the listed budget expenditures categories, so some of this data is missing.

City selection

The Global Municipal Database contains data on 94 cities around the world at the time of its launch, with planned expansion to more cities. The initial selection of GMD cities was taken from cities selected in the Atlas of Urban Expansion,[22] which focusses on a representative sample of 200 global cities. Researchers associated with the Atlas of Urban Expansion who were familiar with each of the 200 cities were contacted to participate in data gathering for the Global Municipal Database. Of those, 28% did not respond or had outdated contact information, 12% declined to participate, 13% were unable to obtain adequate data and 47% successfully provided data, resulting in the 94 cities in the GMD.

The original selection of cities by the Atlas of Urban Expansion team was based on a stratified sample of cities taken from a universe of the 4,231 global cities that had populations of 100,000 or more in 2010. The sample was stratified so that representative numbers of cities were drawn from eight global regions, approximately equal numbers of cities fell into four size categories split to contain similar total urban populations, and cities in countries with many cities were more heavily represented in the sample than countries with only a few cities.[23]

[21] A database that fully accommodates for overlapping budget entities is the Fiscally Standardized Cities Database created by the Lincoln Institute of Land Policy (available at datatoolkits.lincolninst.edu/subcenters/fiscally-standardized-cities). However, this database only includes cities in the United States.

[22] Angel, Lamson-Hall, Madrid, Blei & Parent (2016A).

[23] The detailed city sampling methodology can be found in Chapter 2 of Angel, Lamson-Hall, Madrid, Blei & Parent. (2016B). *Atlas of Urban Expansion: Volume 2: Blocks and Roads*. NYU, UN-Habitat & Lincoln Institute of Land Policy.

The data-gathering process

City-based researchers gathered data from public records where possible, and in many cases obtained municipal budget data directly from municipal government staff. City-based researchers were responsible for reporting data according to GMD indicators and data definitions. All data was originally reported in local currency and converted in USD using the IMF official exchange rate for the data year. Initial submissions were reviewed by UN-Habitat's Urban Economy & Finance Branch and any questions or clarifications were resolved directly with the city-based researchers.

In some cases, budget data was not available broken out by major expenditure categories. Other issues that arose included incongruence between budget categories and GMD categories, data from different years reported for the same city, or data reported for a government entity different than the municipality (for example, the Greater London Authority in the U.K. or for Nakuru County government in Kenya). In all cases any remaining irregularities in the data are listed in the "Notes" section of the data for each city. The majority of cities did not have any irregularities to note.

A list of the researchers for each city is in Appendix A.

Results summary

An initial list of the cities covered by the Global Municipal Database can be found in Appendix A. The map below shows their locations. Average population and growth rates by country classification can be found in Appendix B.

Map: Cities in the Global Municipal Database and Their Per Capita Budgets

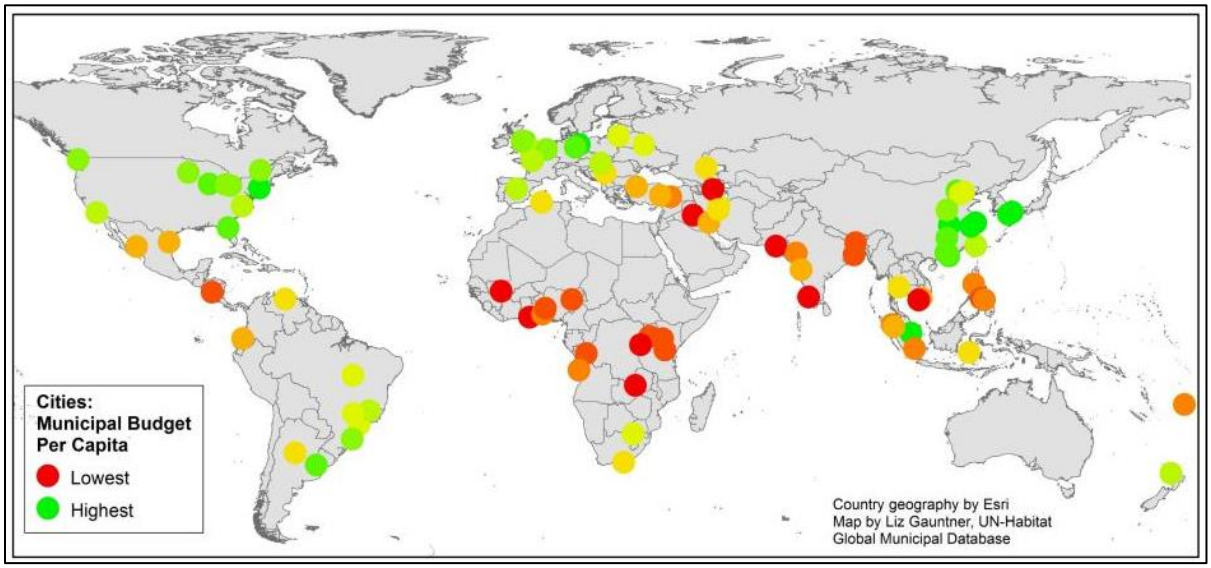
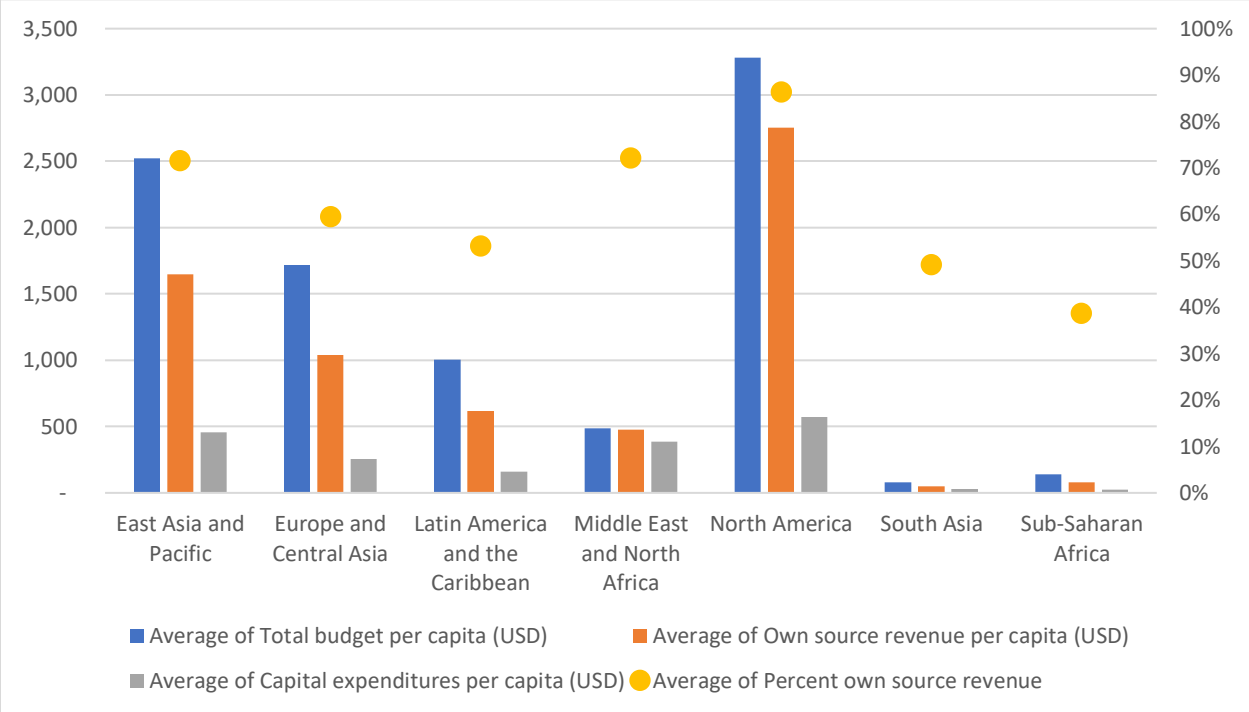


Table 2: Per Capita Budgets and Decentralization of Expenditures and Revenues by Region

Region	Number of local governments in sample	Average budget per capita (US$)	Average capital expenditures per capita (US$)	Average level of decentralization (% of major expenditure categories in mandate)	Average percent own-source revenues
East Asia and Pacific	28	$2,521	$457	80%	72%
Europe and Central Asia	18	$1,718	$254	70%	60%
Latin America and the Caribbean	12	$1,003	$159	65%	53%
Middle East and North Africa	5	$489	$385	43%	72%
North America	10	$3,382	$572	74%	86%
South Asia	6	$80	$30	67%	49%
Sub-Saharan Africa	15	$138	$26	75%	39%
All	**94**	**$1,610**	**$406**	**72%**	**62%**

Figure 1: Municipal Budget Averages by Region



Municipal budgets differed by region and country income level. Total per capita budgets decreased predictably with country income level. Municipalities in North America had the highest average per capita budgets (US$ 3,382), followed by East Asia and the Pacific (US$ 3,512), and then Europe and Central Asia (US$ 1,718). South Asia had the lowest average per capita budget (US$ 80).

Capital expenditures per capita went from high to low in accordance with country income level. Regionally, municipalities in North America had the highest per capita capital expenditures (US$ 572),

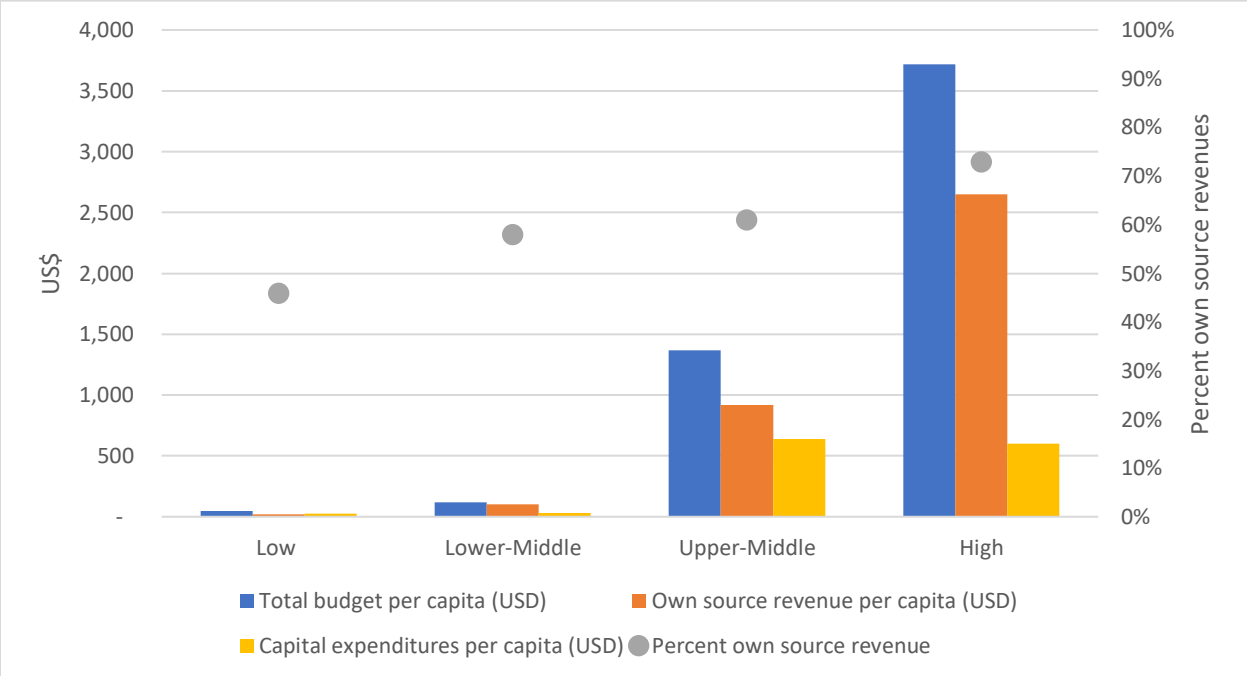
followed by East Asia and the Pacific (US$ 457). Municipalities in Sub-Saharan Africa has the lowest per capita capital expenditures (US$ 26).

There were no major differences in decentralization of expenditures, measured by the degree of budget responsibility within predetermined categories, by income level; however, municipalities in high-income countries had a higher percentage of own-source revenues than those in other countries. There were major differences in decentralization of expenditures between regions with municipal governments in East Asia and the Pacific having the most responsibilities (80% of major categories examined), followed by Sub-Saharan Africa (75%). By far the lowest level of decentralization of expenditures was in the Middle East and North Africa (43%). The average share of own-source revenues was the highest in North America (86%) and lowest in Sub-Saharan Africa (39%).

Table 3: Per Capita Budgets and Decentralization of Expenditures and Revenues by Country Income Level

Country income level	Number of local governments in sample	Average budget per capita (US$)	Average capital expenditures per capita (US$)	Average level of decentralization (% of major expenditure categories in mandate)	Average percent own-source revenues
High	25	3,720	602	68%	73%
Upper-middle	39	1,413	256	74%	59%
Lower-middle	25	121	29	74%	58%
Low	5	45	23	63%	46%
All	**94**	**1,610**	**406**	**72%**	**62%**

Figure 2: Municipal Budget Averages by Country Income Level



Recommendations for future research

The Global Municipal Database fills a major data gap in municipal budget information that is comparable across cities and regions. However, the database can be improved and expanded. More cities can be added, particularly those in the Atlas of Urban Expansion but not yet in the GMD.

Data on the initial set of cities is for a single year. This data should be updated periodically to track how budgets are changing and to lend more power to research attempting to examine the impact of variables of interest, such as economic growth and urban sprawl, on municipal finance.

There are many potential applications for this data, including use by municipalities to monitor their progress in comparison to peers. The data can also be used for research, with one interesting research direction in linking the GMD's data on local finance with the Atlas of Urban Expansion's geographic and spatial data. This type of analysis is made possible by the shared sample of cities in the two databases. Importantly, the GMD also can be used to shed light on policy issues and trends examined by academic researchers and international development entities. Strengthening municipal finance is a component of the *New Urban Agenda*, and the design and monitoring of its implementation can draw upon the GMD to fill data gaps.

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Appendix A: List of Cities and City-Based Researchers

City	Country	Researcher(s)	Year
Algiers	Algeria	Mohamed Srir	2014
Luanda	Angola	Allan Cain	2014
Buenos Aires	Argentina	Luis Baer	2017
Cordoba	Argentina	Mario Andrés Piumetto	2014
Baku	Azerbaijan	Anar Valiyev	2014
Saidpur	Bangladesh	Mohammad Nure Alam	2016-17
Gomel	Belarus	Tatiana Shatiuk	2013
Belo Horizonte	Brazil	Renan Almeida	2013
Florianopolis	Brazil	Rejane Andrade	2014
Palmas	Brazil	João A. Bazolli	2016
Sao Paulo	Brazil	Frederico Ramos	2016
Ribeira Preito / Ribeirao Preto	Brazil	Everaldo Melazzo	2014
Montréal	Canada	Raphaël Fischler	2013
Victoria	Canada	Todd Litman	2017
Hangzhou	China	Leqin Wen	2013
Shanghai	China	Hu Yingjie	2015
Shenzhen	China	De Tong	2013
Zhengzhou	China	Qian Jingjing	2015
Beijing	China	Zhiji Huang	2015
Guangzhou	China	Zhiji Huang	2015
Tianjin [Tientsin]	China	Zhiji Huang	2015
Tangshan	China	Li Sun and Shenmin Liu	2015
Wuhan	China	Li Sun and Shenmin Liu	2015
Zhijin	China	Li Sun and Shenmin Liu	2015
Kinshasa	DRC	Prof. Lelo	2015
Quito	Ecuador	Paola Andrea Bajzelj Cirbián	2015
Suva	Fiji	Everaldo Melazzo	2014
Le Mans	France	Denis Frelat and Pierre Lambert	2014
Berlin	Germany	Lena Simet	2015
Halle	Germany	Lena Simet	2013
Accra	Ghana	Ahadzie Divine Kwaku	2014
Accra	Ghana	Ahadzie Divine Kwaku	2014
Hong Kong	Hong Kong	Parul Rewal	2013
Budapest	Hungary	Afoldi Gyorgy	2012
Kolkata	India	Sayandeep Basak	2015
Ahmedabad	India	Vanishree Herlekar	2013
Pune	India	Vanishree Herlekar	2011
Kozhikode	India	Karthika Sathyanathan	2017
Cirebon	Indonesia	Chrisna Permana	2015
Medan	Indonesia	Chrisna Permana	2015

Palembang	Indonesia	Chrisna Permana	2015
Parepare	Indonesia	Chrisna Permana	2015
Pematang Siantar	Indonesia	Chrisna Permana	2015
Ahvaz	Iran	Ali Farnam	2016
Qom	Iran	Mohammad Amin Saeidi	2010
Tehran	Iran	Mohammed Amin Saeidi	2011
Baghdad	Iraq	Maha Jameel AlMalaika	2015
Fukuoka	Japan	Chrisna Permana	2015
Yamaguchi	Japan	Junhwan Song	2014
Nakuru	Kenya	Mwenje Emmanuel	2014
Antwerp	Kingdom of Belgium	Tom Coppens	2015
Kaunas	Lithuania	Dalia Ciupalaite	2014
Bamako	Mali	Mamadou Keita	2016
Culiacan	Mexico	Alberto Orozco	2014
Reynosa	Mexico	Alberto Orozco	2014
Auckland	New Zealand	Craig Fredrickson	2013
León	Nicaragua	Aura Cecilia Salinas Centeno	2010
Ibadan	Nigeria	Johnson Bade Falade	2013
Lagos	Nigeria	Taibat Lawanson	2013
Oyo	Nigeria	Johnson Bade Falade	2014
Gombe	Nigeria	Adamu Ahmed	2013
Karachi	Pakistan	Farida Ghaffar	2017
Dezerzhinsk	Russia	Alexander Ivanov	2010
Astrakhan	Russia	Olga Egorova	2014
Kigali	Rwanda	Justine KAYIRABA	2014
Belgrade	Serbia	Zaklina Gligorijevic	2015
Singapore	Singapore	Rahul Mittal	2013
Johannesburg	South Africa	Lené Le Roux and Blanca Calvo	2013
Port Elizabeth	South Africa	Lené Le Roux and Blanca Calvo	2013
Madrid	Spain	Rafael Córdoba Hernández	2010
Taipei	Taiwan	Chia-Ming Tsai	2014
Arusha	Tanzania	Aloysius Clemence Mosha	2012
Bangkok	Thailland	Sopon Pornchokchai	2017
Bacolod	The Philippines	Madeleine Cinco	2015
Cebu	The Philippines	Madeleine Cinco	2014
Manila	The Philippines	Madeleine Cinco	2014
Istanbul	Turkey	Ali Tuna Kuyucu	2013
Kayseri	Turkey	Ali Tuna Kuyucu	2013
Malatya	Turkey	Ali Tuna Kuyucu	2014
Kampala	Uganda	Peter Kasaija	2014
Chicago	United States	Michael Iversen	2014
Gainesville	United States	Kate Norris	2013
Los Angeles	United States	C.J. Gabbe	2013-2014

Minneapolis	United States	Mike Greco	2014
New York	United States	Lena Simet	2012
Raleigh	United States	Nikhil Kaza	2013
Toledo	United States	Michael Iversen	2014
London	United_Kingdom	Reyhane Sadat	2013
Caracas	Venezuela	Roger Eduardo Martinez Rivas	2011
Ho Chi Minh	Vietnam	Pham Tran Hai	2015
Vinh Long	Vietnam	Pham Tran Hai	2014
Ndola	Zambia	Joseph Zulu	2014

Appendix B: Figures on Municipal Population and Growth Rate

Figure B.1: Average Municipal Populations and Growth Rates by Country Income Category

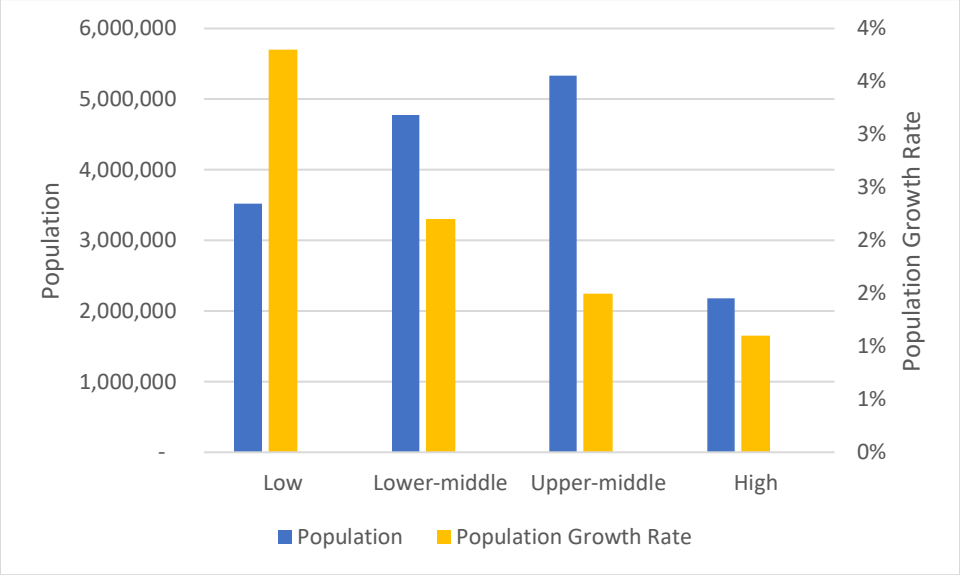

Figure B.2: Average Municipal Populations and Growth Rates by Country Income Category