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## Database on investment in infrastructure in Latin America and the Caribbean

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4th ITF TRANSPORT STATISTICS MEETING  
Paris, France, 14th-15th March 2017



# Content

- **I. INFRALATAM initiative**
  - II. Methodology
- III. Major challenges and next steps

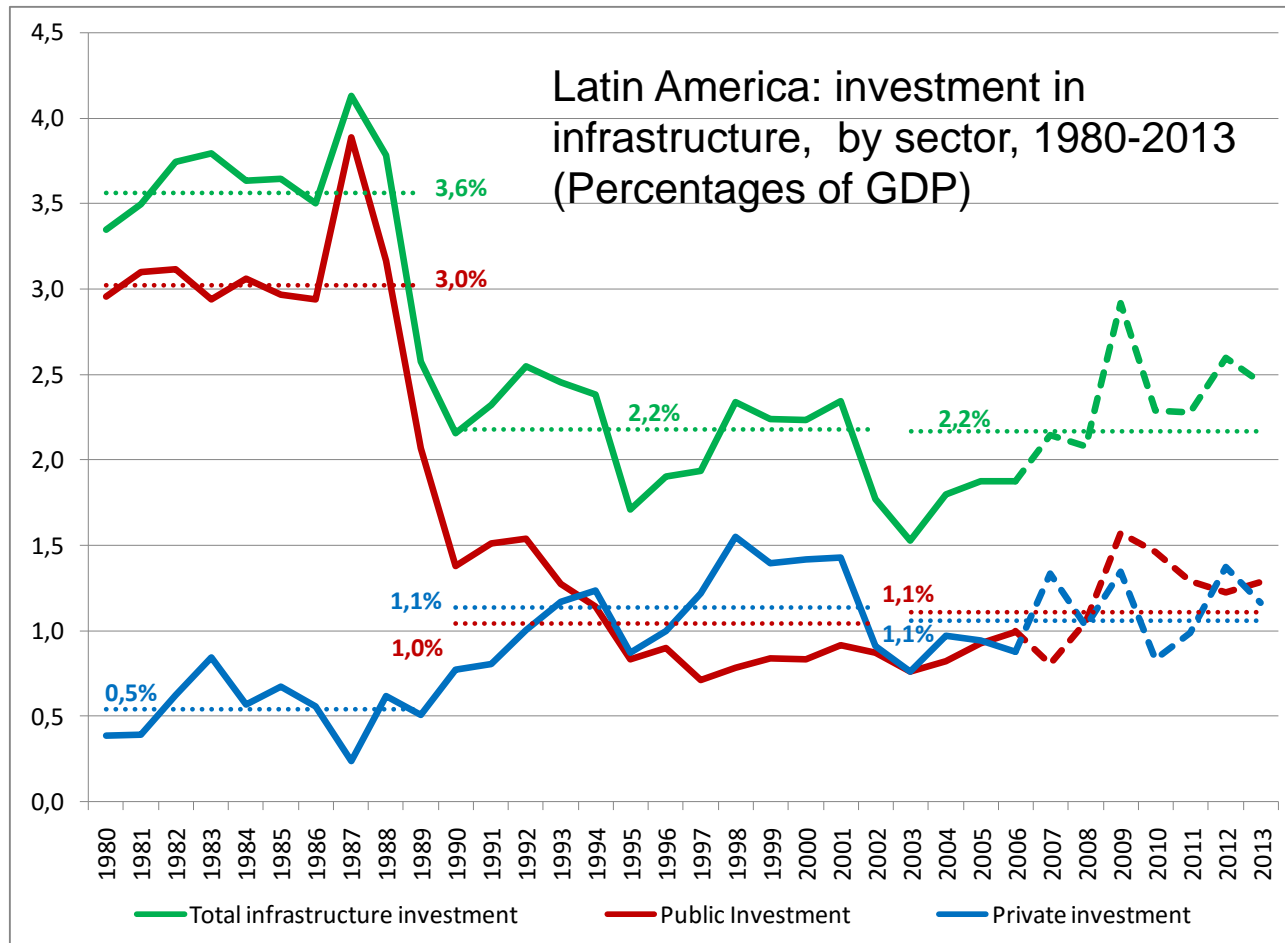


## Background

- Until recently a major obstacle to effective policymaking in Latin America and the Caribbean has been the lack of data on how much is invested in infrastructure, how much is invested by the public and private sectors, respectively, and how this expenditure is shared between the different tiers of government.
- In this connection, the paper by César Calderón and Luis Servén, Infrastructure in Latin America (World Bank policy research working paper No. 5317) (2010) has been of great use. It provided the first database on infrastructure investment in Latin America, covering six countries in the region from 1980 to 2006, and is currently the series whose data reaches the furthest back in time.



This line of research was taken by the Infrastructure Services Unit (ISU) of the Natural Resources and Infrastructure Division of ECLAC, as a permanent initiative to build a database on economic infrastructure investment.

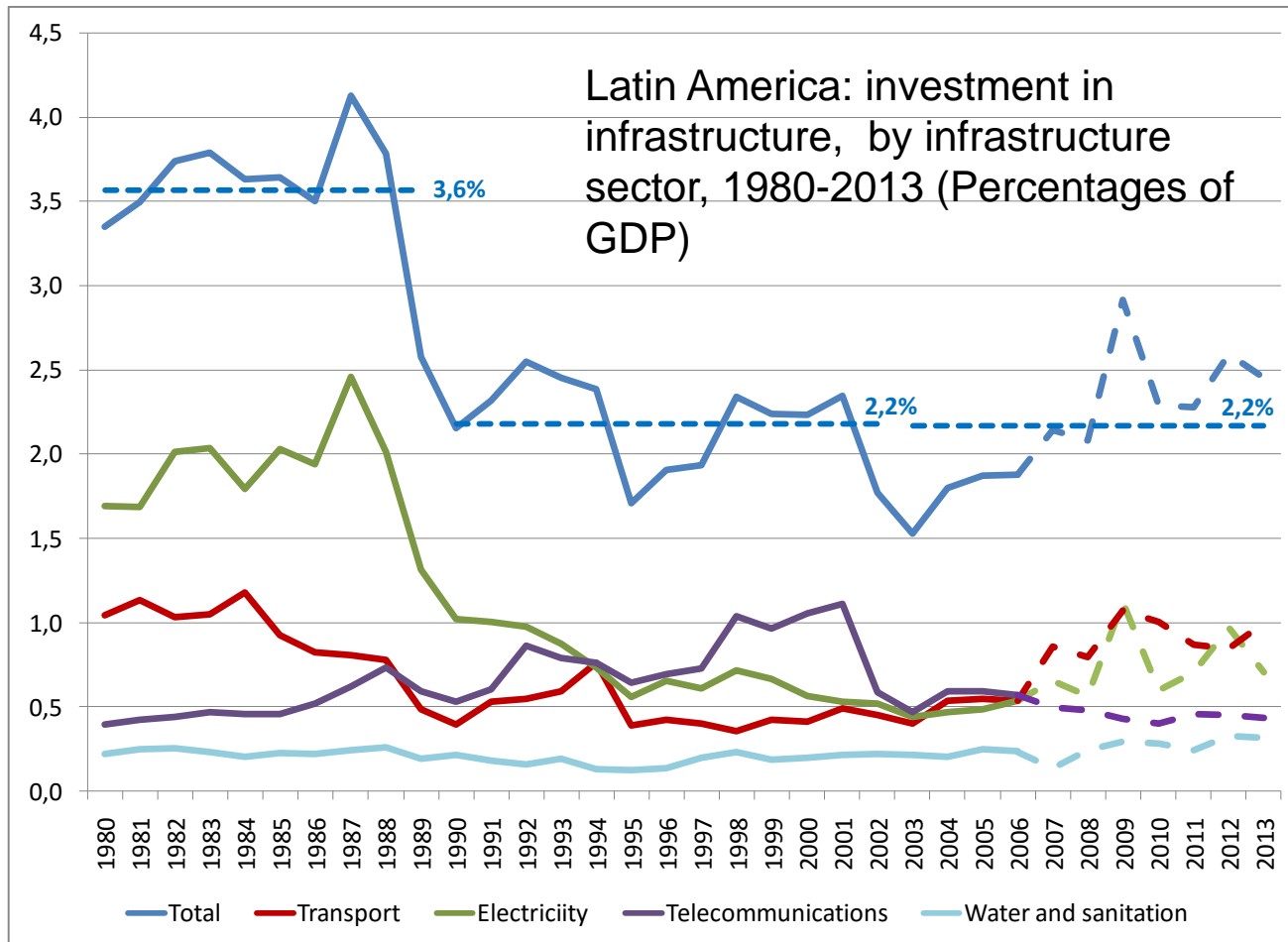


Source: Author, on the basis of the data from: a 1980-2006 period: Calderón, César and Luis Servén, (2010), "Infrastructure in Latin America", World Bank Policy Research Working Paper, No. 5317, Washington, D.C., World Bank. b 2007: ECLAC. 2008-2013 period: INFRALATAM.

Note: The following countries are included: Argentina, Brazil, Chile, Colombia, Mexico and Peru.



# Data series can be disaggregated in transport, electricity, telecommunications and water and sanitation.



Source: Author, on the basis of the data from: a 1980-2006 period: Calderón, César and Luis Servén, (2010), "Infrastructure in Latin America", World Bank Policy Research Working Paper, No. 5317, Washington, D.C., World Bank. b 2007: ECLAC. 2008-2013 period: INFRALATAM.

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**INFRALATAM (<http://en.infralatam.info/home>): Its objective is to measure infrastructure investments in Latin American countries, disseminating results and promoting analyzing their impacts.**  
(Officially released on August 30, 2016)

en.infralatam.info/home

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UNITED NATIONS ECLAC

IDB Inter-American Development Bank

CDF DEVELOPMENT BANK OF LATIN AMERICA

SUSTAINABLE DEVELOPMENT GOALS

Search for Open Data

**INFRALATAM**

ECONOMIC INFRASTRUCTURE INVESTMENT DATA IN LATIN AMERICA AND THE CARIBBEAN

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**Data were compiled, registered, processed (by INFRALATAM <http://en.infralatam.info/home> ) and validated (by the countries).**

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en.infralatam.info/home

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### Data by sector

Access to disaggregated data by infrastructure sector

- Water, Irrigation and Flood Defenses
- Energy
- Transport
- Telecommunications

Initiative | Methodology | Contact us. Challenge the Data

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# The initiative has infrastructure investment data for 15 countries from 2008 to 2013



Buscar datos abiertos

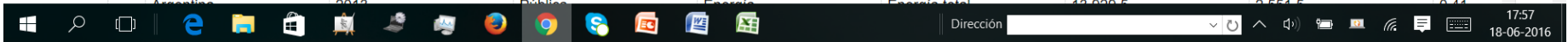


## Energía

Datos de inversión en millones moneda nacional (a precios corrientes), millones USD (a precios corrientes) y % del PIB

Pais	Año	Tipo	Sector	Subsector	Moneda local (millones)	USD (millones)	Porcent
Argentina	2008	Pública	Energía	Energía total	6,053.2	1,925.2	0.47
Argentina	2008	Privada	Energía	Energía total		717.8	0.18
Argentina	2008	Total	Energía	Energía total		2,643	0.65
Argentina	2009	Pública	Energía	Energía total	6,933.7	1,868.9	0.49
Argentina	2009	Privada	Energía	Energía total		344.3	0.09
Argentina	2009	Total	Energía	Energía total		2,213.1	0.58
Argentina	2010	Pública	Energía	Energía total	9,480.1	2,433.1	0.52
Argentina	2010	Privada	Energía	Energía total		322.9	0.07
Argentina	2010	Total	Energía	Energía total		2,756	0.59
Argentina	2011	Pública	Energía	Energía total	7,482.7	1,820.6	0.32
Argentina	2011	Privada	Energía	Energía total		564.6	0.10
Argentina	2011	Total	Energía	Energía total		2,385.2	0.42
Argentina	2012	Pública	Energía	Energía total	10,341.7	2,279.4	0.37
Argentina	2012	Privada	Energía	Energía total		593	0.10
Argentina	2012	Total	Energía	Energía total		2,872.4	0.47
Argentina	2013	Pública	Energía	Energía total	12,990.5	2,551.5	0.44

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(<http://en.infralatam.info/home>)





**This is a dynamic project which seeks to increase its country and time coverage, as well as to enhance the quality of the data reported.**

**NOTAS**

Las inversiones pública y privada se miden de forma distinta, por lo tanto su suma se presenta como aproximación (ver metodología para más detalle)

Argentina. No incluye las inversiones que los gobiernos subnacionales realizan con recursos propios

Brasil. Inversión subnacional: cubre 11 Estados (ver metodología para más detalle) y la prefeitura de São Paulo

Chile. La inversión subnacional está subestimada porque se registra sólo el rubro "Iniciativas de Inversión"

Colombia. Inversión de Empresas Públicas: se cuenta con información para 2011 y 2013. Para el resto de los años la inversión es estimada a partir de la participación de la inversión en infraestructura en la inversión total en 2013. Se aplica ese porcentaje a la inversión total de los otros años para calcular la inversión en infraestructura

Costa Rica. La inversión subnacional incluye sólo la inversión realizada con fondos transferidos por el gobierno nacional

Guatemala. No se incluyen inversiones subnacionales

### Energía

Datos de inversión en millones moneda nacional (a precios corrientes), millones USD (a precios corrientes) y % del PIB

Pais	Año	Tipo	Sector	Subsector	Mon
Argentina	2008	Pública	Energía	Energía total	6,0€
Argentina	2008	Privada	Energía	Energía total	
Argentina	2008	Total	Energía	Energía total	
Argentina	2009	Pública	Energía	Energía total	6,9€
Argentina	2009	Privada	Energía	Energía total	
Argentina	2009	Total	Energía	Energía total	
Argentina	2010	Pública	Energía	Energía total	9,4€
Argentina	2010	Privada	Energía	Energía total	
Argentina	2010	Total	Energía	Energía total	
Argentina	2011	Pública	Energía	Energía total	7,4€
Argentina	2011	Privada	Energía	Energía total	
Argentina	2011	Total	Energía	Energía total	
Argentina	2012	Pública	Energía	Energía total	10,3€
Argentina	2012	Privada	Energía	Energía total	
Argentina	2012	Total	Energía	Energía total	

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**Recolección y tratamiento de datos  
sobre inversiones en infraestructura  
a partir de las finanzas públicas  
en América Latina y el Caribe:**

**Glosario y Formulario**

Jeannette Lardé  
Salvador Marconi



Comisión Económica para América Latina y el Caribe (CEPAL)

For public sector infrastructure investment:

ECLAC has produced a document that are intended to serve as a guidance tool **for the appropriate compilation, recording, validation and processing of information** on the basis of **Government Finance**, following a mechanism that facilitates the standarization of the data, and their comparison over time and across countries.

The methodology is based on:

- IMF (2001), *Government Finance Statistics Manual 2001*, Washington, DC.
- European Commission/IMF/OECD/UN/WB (2008), *System of National Accounts 2008*, Brussels/Luxembourg, New York, Paris, Washington, D.C.
- United Nations (2009), *International Standard Industrial Classification of All Economic Activities (ISIC), Revision 4*. New York.
- EC, IMF, OECD, UN y WB (2008), *System of National Accounts 2008*.
- *OECD, ITF, Glosario de estadísticas de transporte*,
- Consultations with specialists.
- Others documents.



## Some fundamental concepts

- **Defining the concepts of investment**
- From a macroeconomic statistical system, we have the Decomposition of Aggregate Demand and Supply:
- (1) Total Aggregate Supply =  $X$  = Total Aggregate Demand
- (2)  $Y+T+M$  =  $X$  =  $C+I+G+E$
- 
- Donde Y es el Gross Domestic Product, T taxes paid to the government, M total imports, C consumer spending, I total investment , G government spending, E total exports .
- 
- $I$  = Private investment + Public investment



## METHODOLOGY

- In the System of National Accounts we have the concepts of “investment” as “gross capital formation” (GCF).
- Gross capital formation (GCF) consists of gross fixed capital formation (GFCF), changes in inventories and acquisitions (DI) less disposals of valuables (V). By omitting the valuables (V),<sup>3</sup> this relationship may be expressed as follows:
  - $GCF = GFCF + DI - V$
  - $GCF = (NFCF + CFC) + DI$
- **Changes in inventories (DI)** refer to construction or other work in progress as part of projects taking more than one year to be completed.
- Consumption of fixed capital (CFC) is the **depreciation** of fixed assets, as a consequence of:
  - Physical deterioration,
  - Normal obsolescence, or
  - Normal accidental damage.



- As **Gross Capital Formation (GCF)** we include projects whose lifespan exceeds a year and are subject to depreciation.
- We report the following type of projects:
  - New projects, improvement and expansion projects.
  - Replenishment Projects.

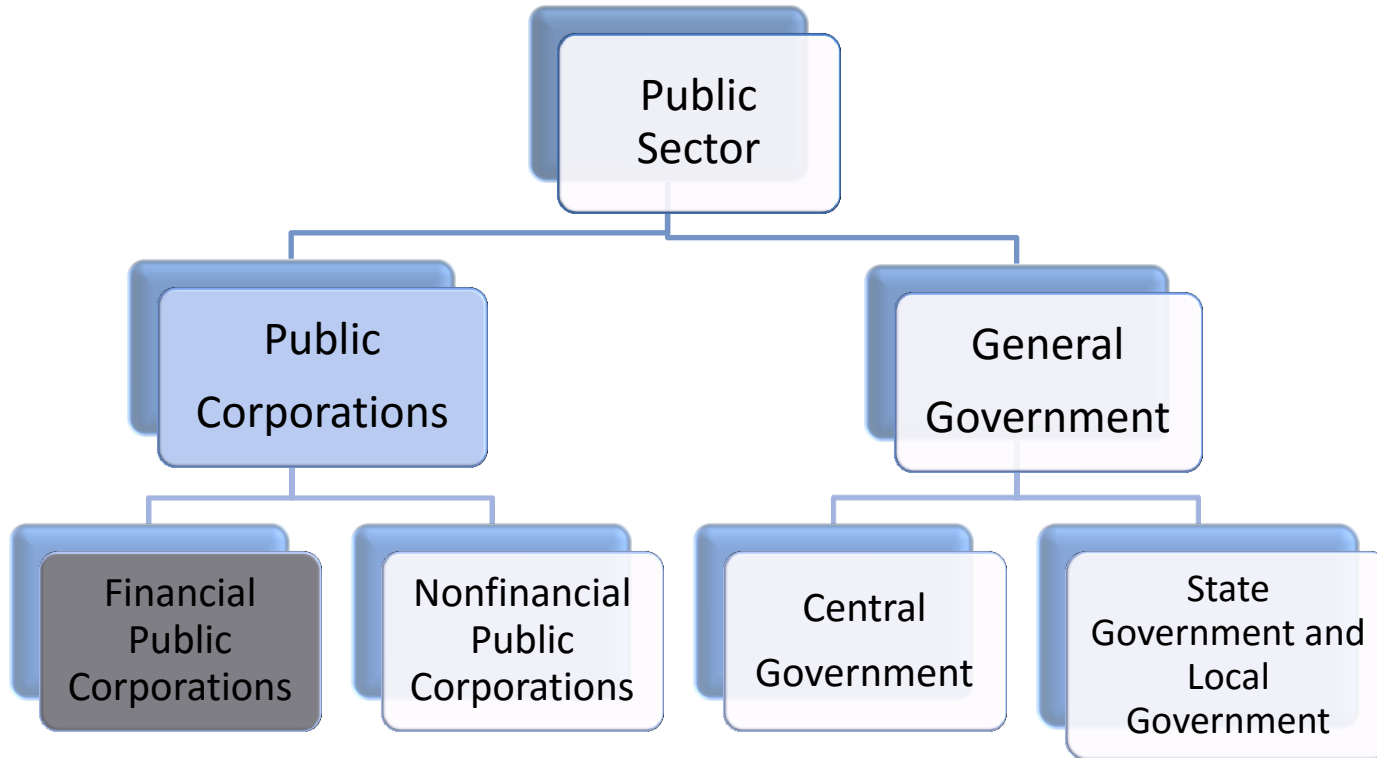


## **“Maintenance and repair of fixed assets” vrs. “major improvements” to fixed assets**

- Maintenance and repair of fixed assets are not include in the database.
- The distinction between “Maintenance and repair of fixed assets” vrs. “major improvements” is not always obvious. Maintenance and repairs are distinguished by two features:
  - (a) they are activities that owners or users of fixed assets are obliged to undertake periodically in order to be able to utilize such assets over their expected service lives and
  - (b) they do not change the fixed asset or its performance or productivity, but simply maintain it in good working order or restore it to its previous condition in the event of a breakdown.



# The public sector and its subsectors



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## ***Time of recording: accrual basis***

- The **accrual basis** provides the best estimation of the macroeconomic impact of government fiscal policy.
- With the use of **accrual basis** the effects of economic events are recorded in the period in which they occur, irrespective of whether cash was received or paid, or was due to be received or paid.



## Using the [form](#)

- Instructions
- General data.
- Institutional coverage (may vary over time). This includes the three levels of government.
- Special Funds (if there is another different source). The most commonly used sources of information are:
  - Central Government: National Budget execution / Special Accounts
  - Subnational governments: transfers from the national budget execution, provincial, regional or local budgets execution, special funds, etc.



## Infrastructure sectors can be classified by government functions.

### D. Classification of Outlays by Functions of Government

<b>7</b>	<b>Total outlays</b>	70433	Nuclear fuels
<b>701</b>	<b>General public services</b>	70434	Other fuels
7011	Executive and legislative organs, financial and fiscal affairs, external affairs	<b>70435</b>	<b>Electricity</b>
		<b>70436</b>	<b>Nonelectric energy</b>
70111	Executive and legislative organs	7044	Mining, manufacturing, and construction
70112	Financial and fiscal affairs	70441	Mining of mineral resources other than mineral fuels
70113	External affairs		
7012	Foreign economic aid	70442	Manufacturing
70121	Economic aid to developing countries and countries in transition	70443	Construction
		7045	Transport
70122	Economic aid routed through international agencies	<b>70451</b>	<b>Road transport</b>
		<b>70452</b>	<b>Water transport</b>
7013	General services	<b>70453</b>	<b>Railway transport</b>
70131	General personnel services	<b>70454</b>	<b>Air transport</b>
70132	Overall planning and statistical services	70455	Pipeline and other transport
70133	Other general services	<b>7046</b>	<b>Communication</b>
7014	Basic research	7047	Other industries
7015	R&D <sup>1</sup> General public services	70471	Distributive trades, storage, and warehousing
7016	General public services n.e.c. <sup>2</sup>	70472	Hotels and restaurants
7017	Public debt transactions	70473	Tourism
7018	Transfers of a general character between different levels of government	70474	Multipurpose development projects
		7048	R&D Economic affairs
<b>702</b>	<b>Defense</b>	70481	R&D General economic, commercial, and labor affairs
7021	Military defense		
7022	Civil defense	70482	R&D Agriculture, forestry, fishing, and hunting
7023	Foreign military aid	70483	R&D Fuel and energy
7024	R&D Defense	70484	R&D Mining, manufacturing, and construction
7025	Defense n.e.c.	70485	R&D Transport
<b>703</b>	<b>Public order and safety</b>	70486	R&D Communication
7031	Police services	70487	R&D Other industries
7032	Fire protection services	7049	Economic affairs n.e.c.
7033	Law courts	<b>705</b>	<b>Environmental protection</b>
7034	Prisons	7051	Waste management
7035	R&D Public order and safety	<b>7052</b>	<b>Waste water management</b>
7036	Public order and safety n.e.c.	7053	Pollution abatement
<b>704</b>	<b>Economic affairs</b>	7054	Protection of biodiversity and landscape
7041	General economic, commercial, and labor affairs	7055	R&D Environmental protection
70411	General economic and commercial affairs	7056	Environmental protection n.e.c.
70412	General labor affairs	<b>706</b>	<b>Housing and community amenities</b>
7042	Agriculture, forestry, fishing, and hunting	7061	Housing development
<b>70421</b>	<b>Agriculture</b>	7062	Community development
70422	Forestry	<b>7063</b>	<b>Water supply</b>
70423	Fishing and hunting	7064	Street lighting
7043	Fuel and energy	7065	R&D Housing and community amenities
70431	Coal and other solid mineral fuels	7066	Housing and community amenities n.e.c.
70432	Petroleum and natural gas		

Source: *Government Finance Statistics Manual 2001*.



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## Major challenges and next steps

- 1. Increase data disaggregation (for example, inland navigation and maritime transport are reported as a total (not disaggregated)).
- 2. Standardization of data (in order to obtain comparability with macroeconomic accounts and international comparisons).
- 3. Improve the registration of State Government and Local Government data.
- 4. Recording and processing private investment in infrastructure (we are using the World Bank database for PPI projects).
- 5. Recording and processing maintenance and repair of fixed assets.
- 6. Other challenges (currently in progress):
  - Measurement of infrastructure gap
  - Measurement of capital stocks
  - Expand country coverage:
    - At the moment, we have 15 countries: Argentina, Bolivia (Estado Plurinacional de), Brasil, Chile, Colombia, Costa Rica, El Salvador, Guatemala, Honduras, México, Nicaragua, Panamá, Paraguay, Perú and Uruguay.
    - We are expanding the coverage to seven more countries: Belice, Cuba, Guyana, Jamaica, República Dominicana, Suriname, Trinidad y tobago.
    - And updating data until 2015 or 2016.



# Thanks a lot.



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