



# Postal economics in developing countries

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## Towards new models for Africa and Latin America

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## Mission to Niger: a few snapshots





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22.12.2005



## Mission to Niger: a few snapshots





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PROGRAMME FERMETURE DEPECHE AVION				
JOUR	DESTINATION	N° VOL		HEURE
MARDI	OUAGA	AF	731	11H
	DAKAR	AF	731	17H
	PARIS CDG	AF	731	17H
	USA JFK	AF	731	17H
MERCREDI				
JEUDI	ABIDJAN	84	742	17H
VENDREDI	OUAGA	AF	731	11H
	DAKAR	AF	731	17H
	PARIS CDG	AF	731	17H
	USA JFK	AF	731	17H
LUNDI	ABIDJAN	Vu	8060	12H

22.12.2005



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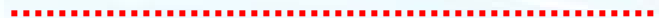




# Postal economics for developing countries(DCs): a lack of models



- Much strategic and economic work on postal reform in industrialized countries
- Little study of the reforms undertaken in less-developed countries
- Other network sectors (telecoms, energy, transport, etc.) studied in DCs
- World Bank GICT report and other isolated studies
- Trend to project the results of postal economics for industrialized countries onto developing countries
- **Our warning: this kind of extrapolation may not be appropriate**







# Industrialized countries: postal stylized facts

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- The postal model in industrialized countries:
    - *high letter-post volumes*
    - *B2C-driven traffic*
    - *high salaries and heavy automation*
    - *large economies of scale for home deliveries.*
    - only the sender of the mail generally pays (*Rowland Hill*)
    - *low share of international mail in the total volume of mail*
  - So far ... universal service preserved with partial liberalization ... and tomorrow?
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# DCs: postal stylized facts

- In contrast, in DCs, **and particularly in Africa**:
  - ***no*** high letter-post volumes
  - ***question***: is traffic driven by sufficient volumes of B2C mail?
  - ***no*** high salaries and ***no*** heavy automation
  - ***distribution may be organized differently than in industrialized countries***
  - ***the sender and addressee may both pay for postal services***
  - ***high share of international mail in the total volume of mail***
- Universal service **not always preserved** with liberalization (e.g. Latin America).
- **Error: applying the analytical framework and postal regulation model of the industrialized countries to countries with lower traffic, different composition of mail flows, and with a different distribution economy**





# Two questions on the future of the postal sector and USO in DCs

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1. What are the viable growth models for the postal sector in DCs which will result in a reliable, affordable postal service accessible to all?
2. Why promote the development of USO? What is the contribution of the postal sector to economic development (financial services, new information and communication technologies)?

*To respond to these questions, we must develop new postal development models that draw lessons from appropriate economic analysis.*

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# Better understanding the postal development in DCs

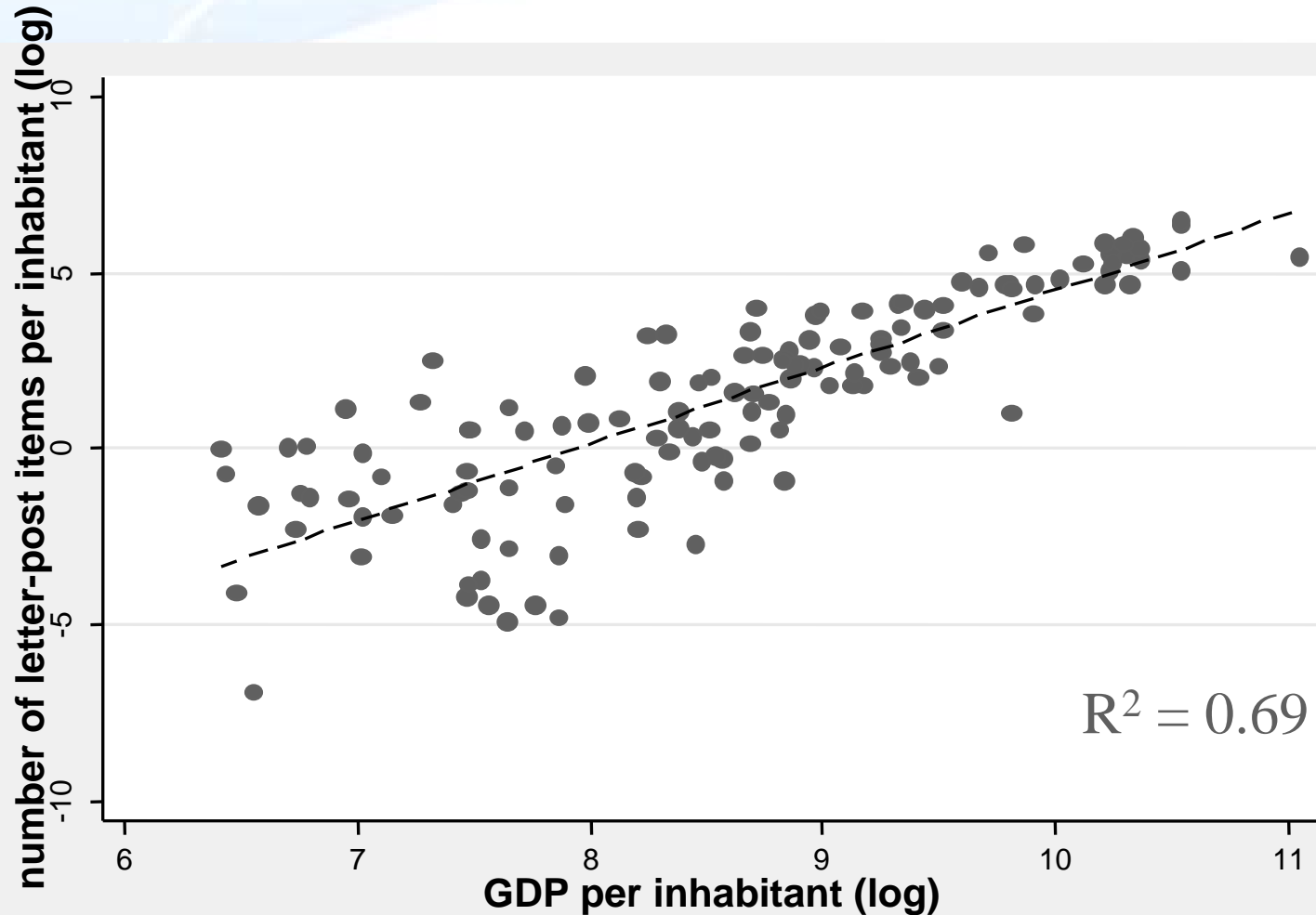
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- Varied, uneven levels of postal development in the developing and emerging countries.
  - In industrialized countries, there is a clear correlation between growth in GDP and per capita growth in letter-post traffic (see e.g. WIK).
  - However, in developing countries, growth in traffic is much less linked to economic growth.
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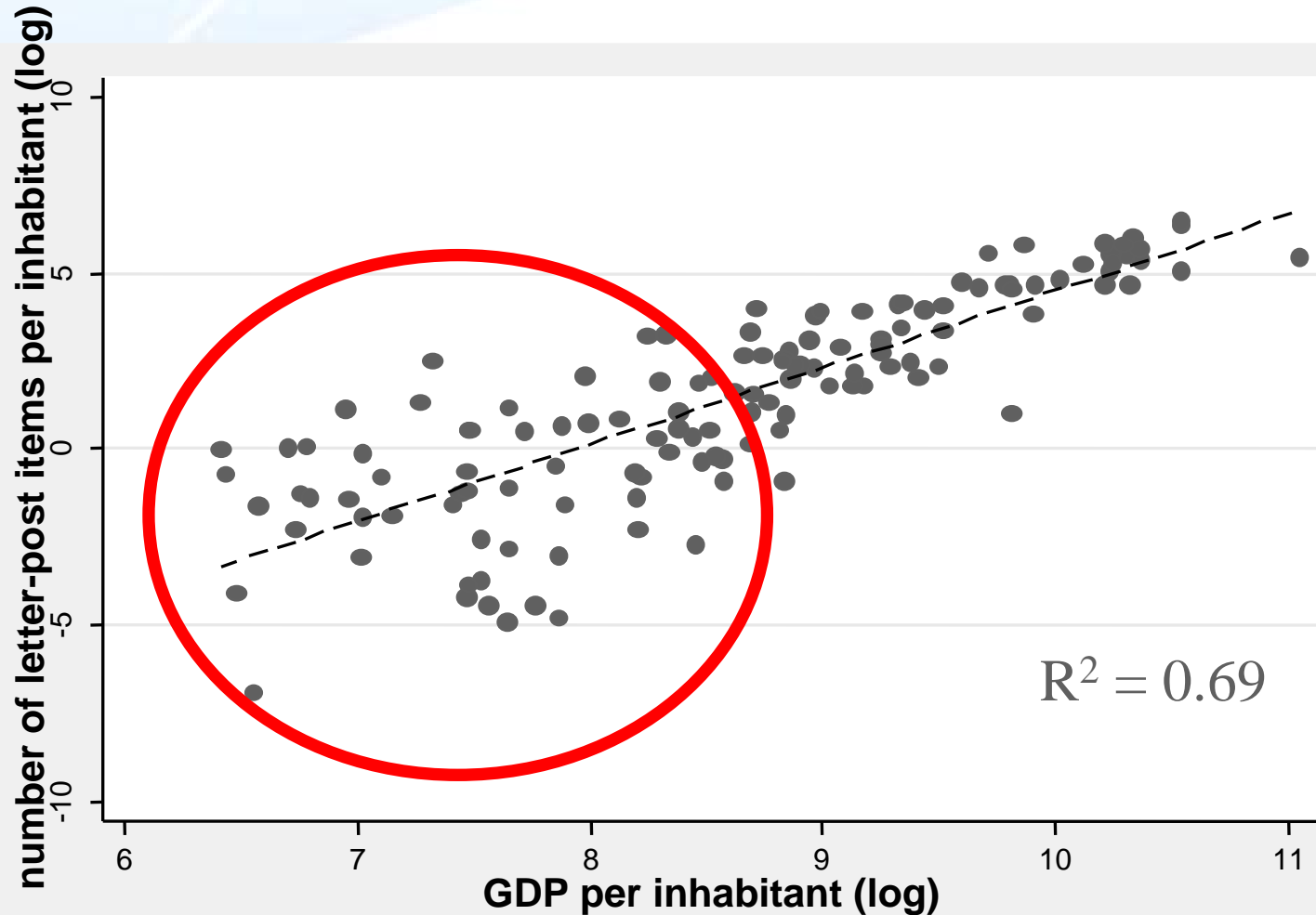




# The traditional view: GDP and traffic are linked

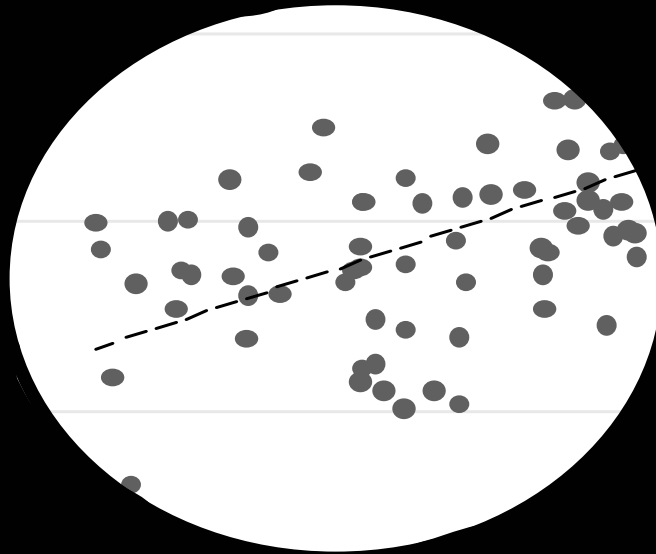


# Are they really linked for low-income countries?



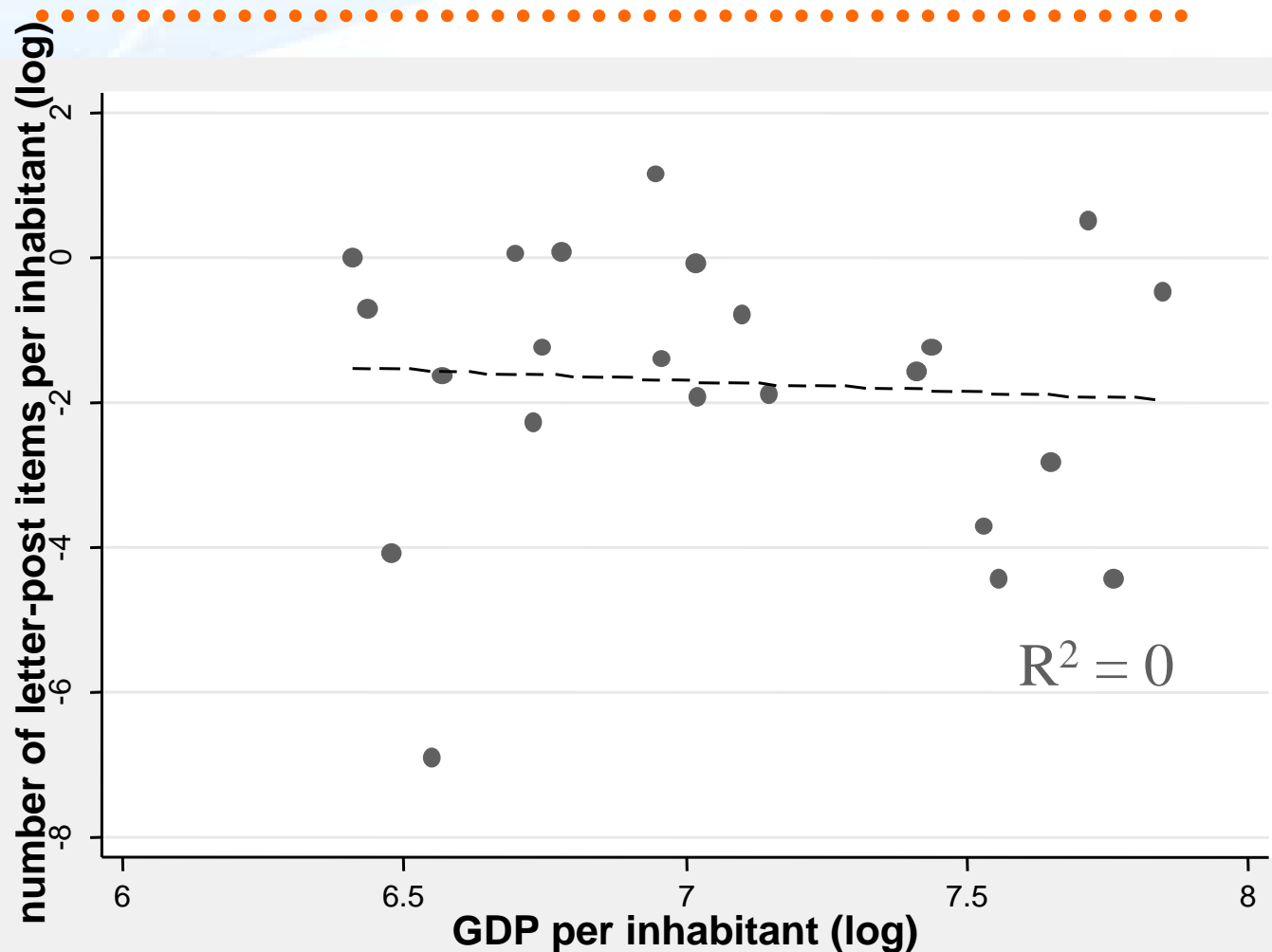


# Not really!





# Are they linked for low-income countries in sub-Saharan Africa? **No!**







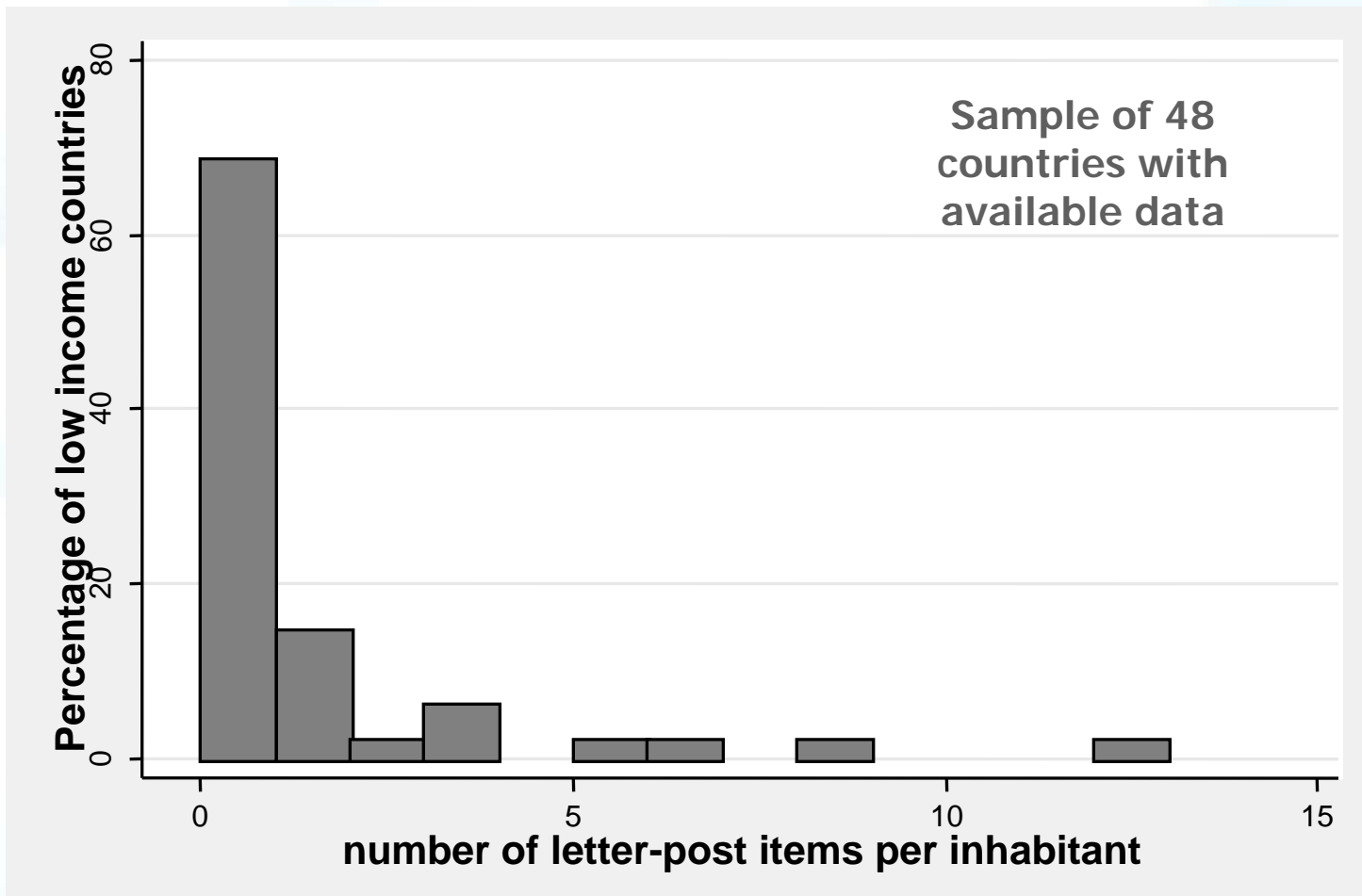
# Better understanding the postal development in DCs

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- Varied, uneven levels of postal development in the DCs -> clustering the analysis according to the level of economic development (clusters of countries)
    - In the industrialized countries, there is a clear correlation between growth in GDP and per capita growth in letter-post traffic (see WIK).
    - However, in the developing countries, economic growth is much less linked to growth in traffic.
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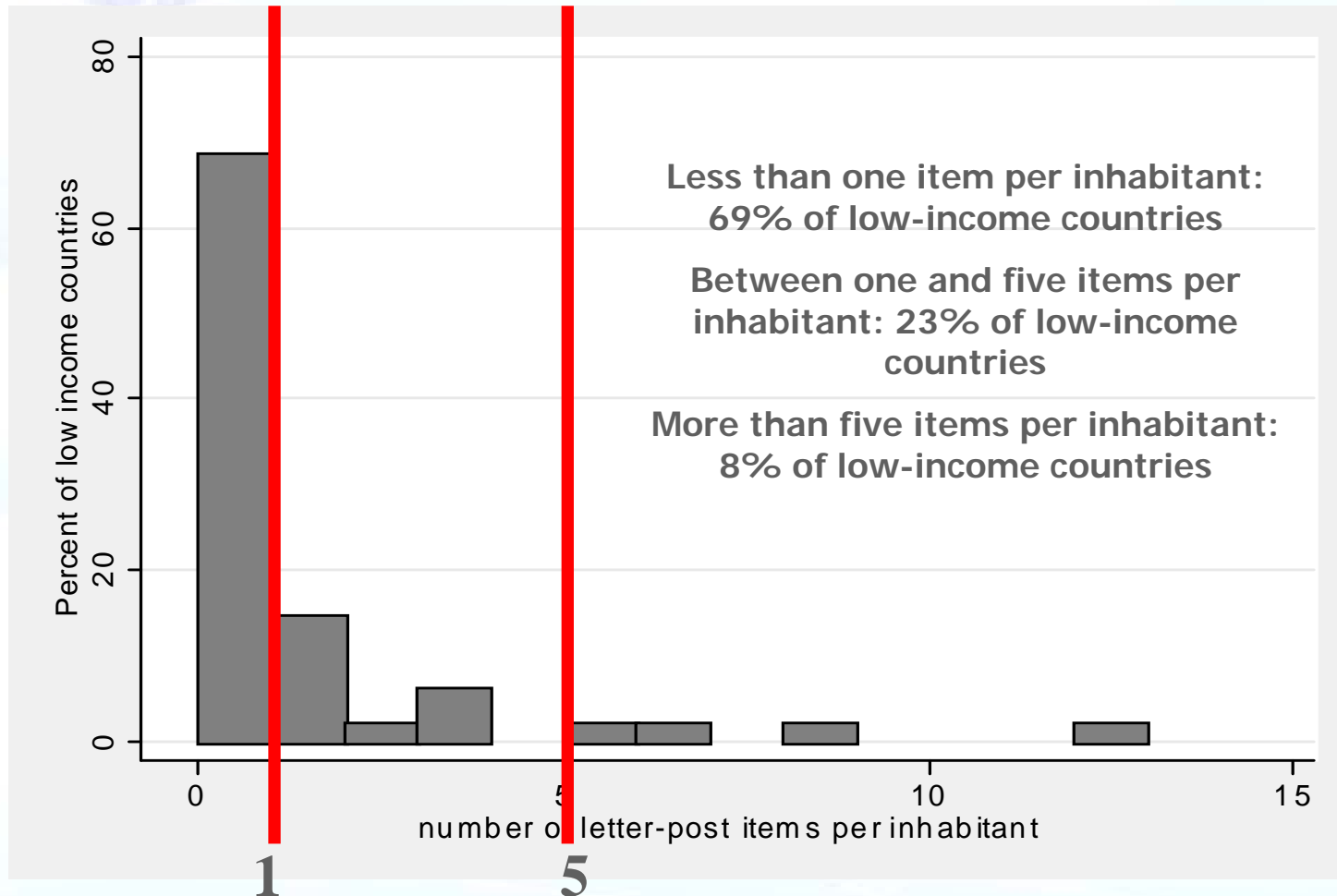
For per capita income of up to 812 USD in our sample of low-income countries, the number of domestic letter-post items per inhabitant ranged from 0.01 to 12.2 in 2003





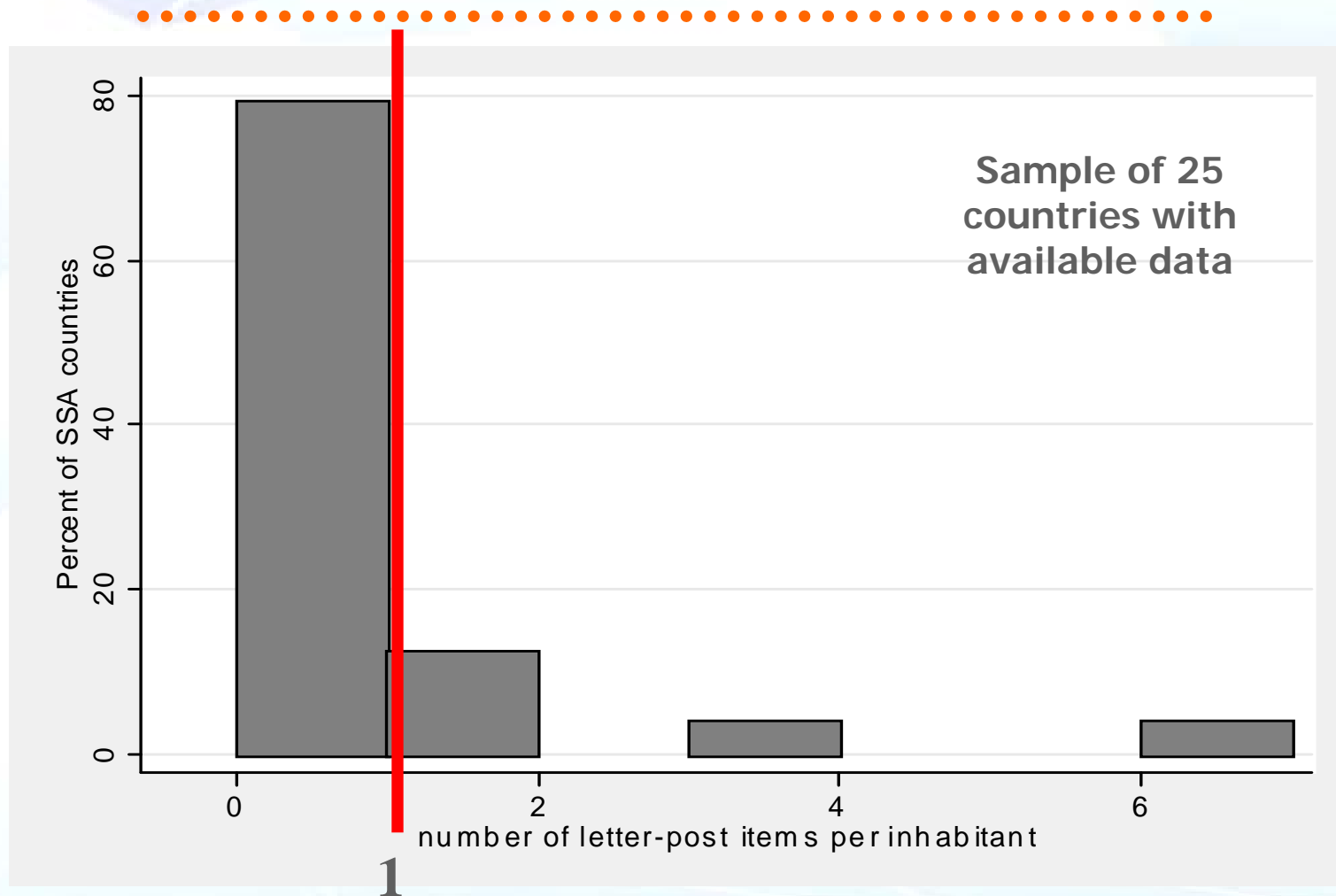


## The development of domestic letter post varies greatly, with some low-income countries recording very low traffic levels while others achieve higher levels (2003)





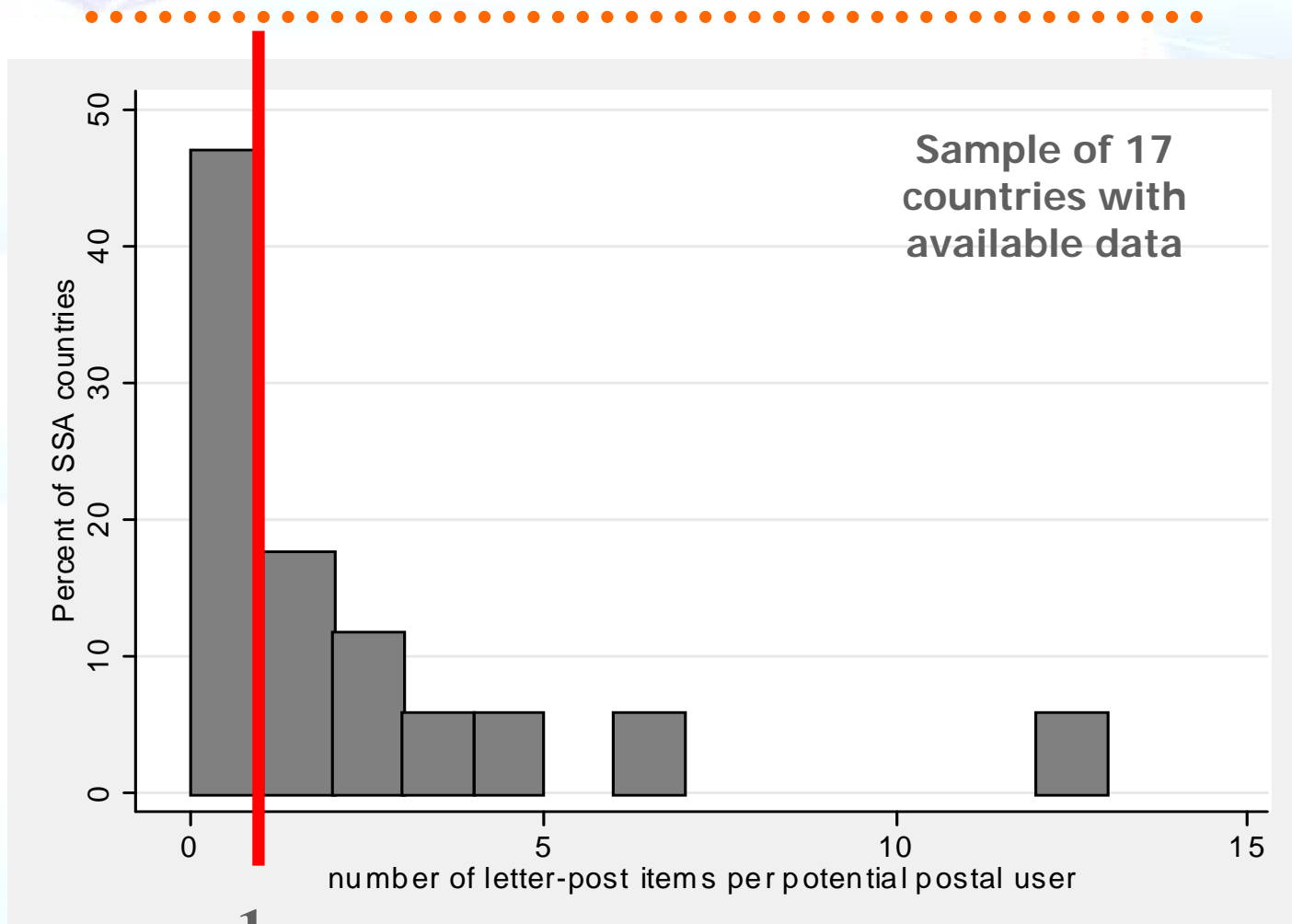
For our sample of low-income countries in sub-Saharan Africa, almost 80 % of public operators had domestic letter-post traffic below one letter per inhabitant per year (2003)





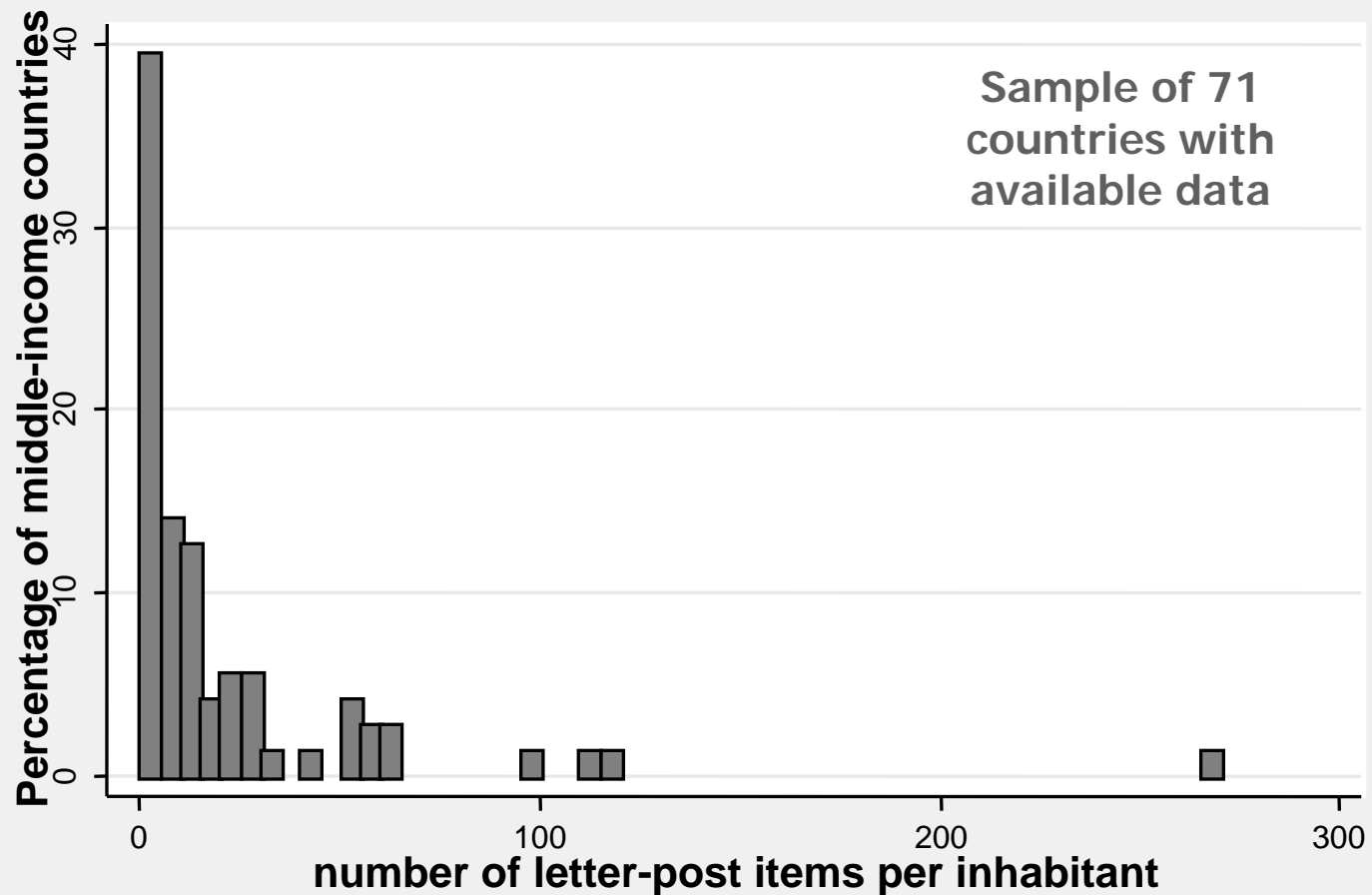


For our sample of low-income countries in sub-Saharan Africa, less than 50 % of public operators had domestic letter-post traffic below one letter per potential postal user per year (2003)





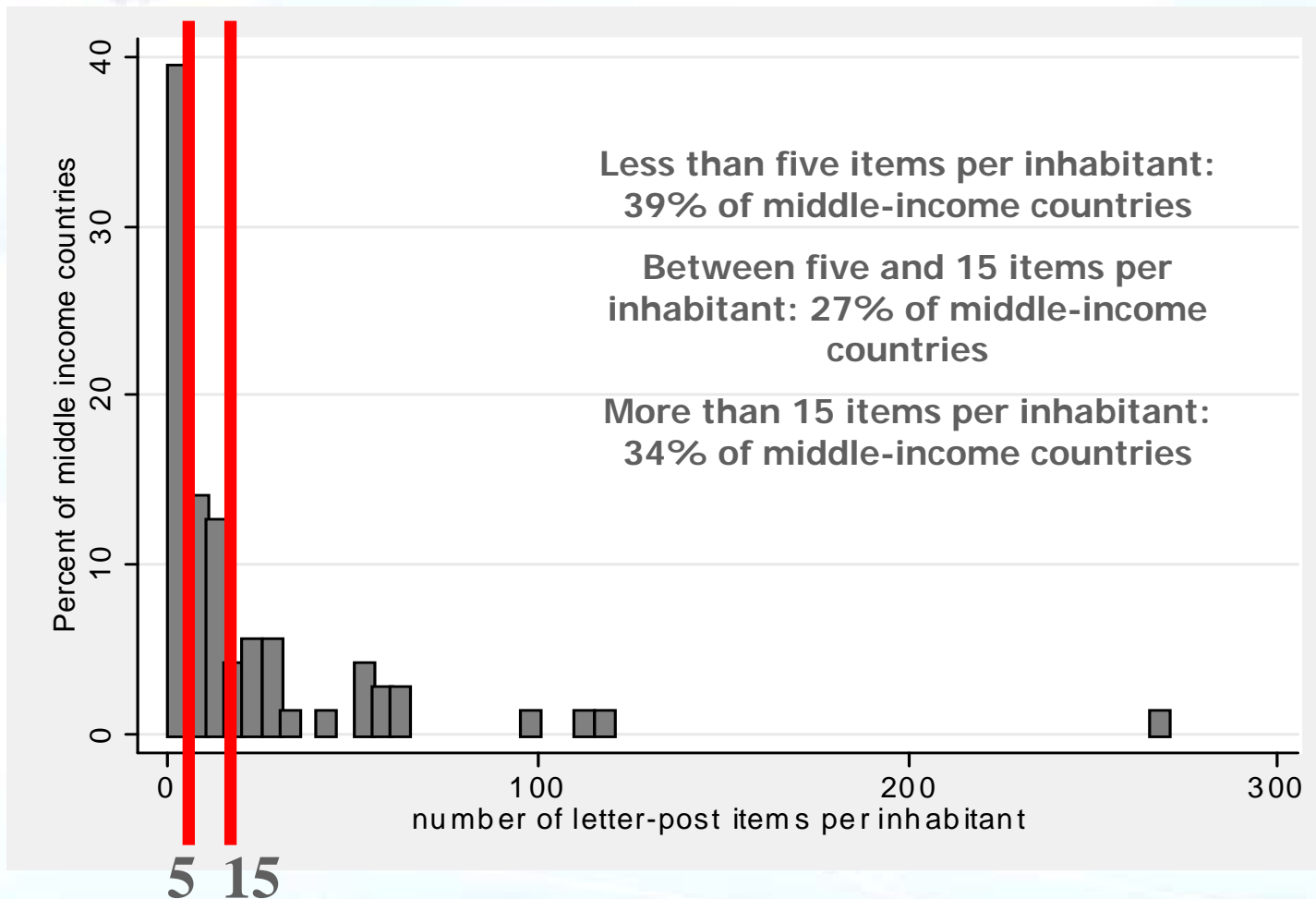
For per capita income between 847 USD and 9,568 USD in our sample of **middle-income countries**, the **number of domestic letter-post items per inhabitant ranged from 0.01 to 265.9 in 2003**







Development of the domestic letter post varies widely, with **middle-income countries** recording low or very low levels of traffic, while others have high or very high traffic levels





## For low-income countries (mainly sub-Saharan Africa), preliminary econometric results show:

- six factors accounting for up to 73% of variation in domestic traffic
- three basic explanatory factors, in order of importance:
  - *(population–children–illiterate people)/population = potential users*
  - *percentage of the population having to collect mail from the Post*
  - *potential users per post office, i.e. size of network (not true for ICs)*
- domestic traffic is evolving simultaneously with three other variables:
  - *number of Internet connections per 1,000 inhabitants (not substitutes, but rather complements)*
  - *number of mobile telephones per 1,000 inhabitants*
  - *amount of value added to GNP by the service sector*
  - **however the last three variables need to be better understood!**





## For middle-income countries (e.g. Latin America or North Africa), preliminary econometric results show:

- nine factors accounting for up to 86% of variation in domestic traffic
- four basic explanatory factors, in order of importance:
  - *per capita gross domestic product (GDP in terms of ppp)*
  - *the proportion of the population who are potential or actual users of the letter post*
  - *the price of the domestic letter-post service (price in terms of ppp)*
  - *potential users per post office, i.e. size of network (not true for ICs)*
- domestic traffic is evolving simultaneously with the following five variables:
  - *number of international letter-post items received per potential or real user of the letter post*
  - *population density*
  - *number of Internet and mobile telephone connections per 1000 inhabitants (no substitution, but rather complementarity with ICTs)*
  - *degree of competition, legal or otherwise ("Latin America effect")*
  - **however, the above five variables need to be better understood!**



**Building up the 21st century postal model for developing countries is not only microeconomic...**

**... but also institutional (market structure and organization of its regulation)**



# Postal market structure and the regulatory model in developing countries

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- Liberalization (privatization?) and destructive downstream competition
- Taking into the demand-side of the market: a trade-off between the benefits of competition and efficiency losses with strong economies of scale (Amir, 2002; Amir and Lambson, *Review of Economic Studies*, 2000; Cohen et al., 2004)
- Whatever the sector, recent work has shown that we cannot put in place complicated, sophisticated regulations in developing countries, given their lack of financial and human resources, but also sometimes their weaknesses in terms of governance (Jean-Jacques Laffont, *Regulation and Development*, 2004).
- The dangers of inappropriate choices (both in terms of market structure and regulation): Latin America and destructive competition

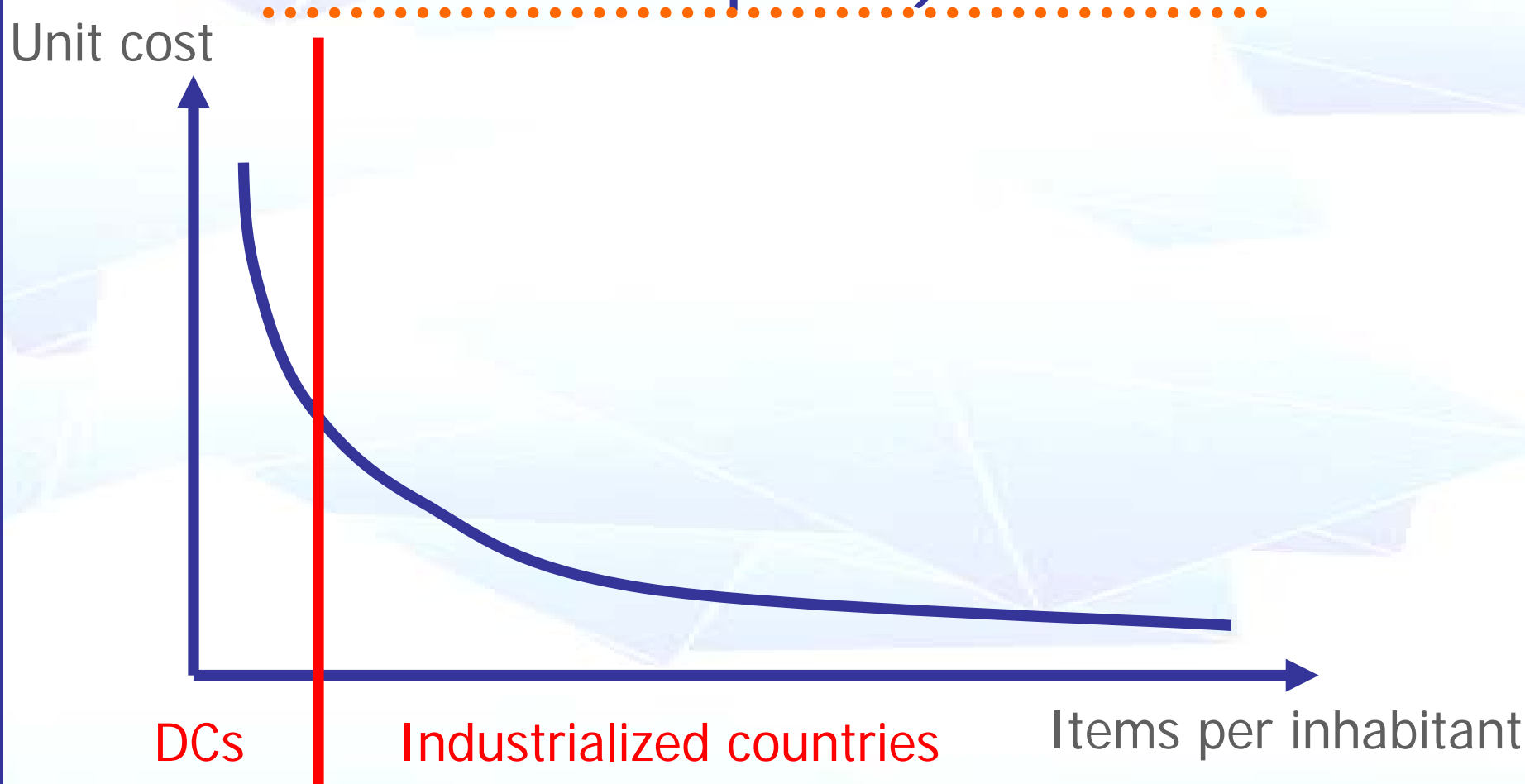
*One principle: simplicity and clarity.*

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# Combining the demand level and the average cost curve: destructive competition for postal markets with low volumes (i.e. 2 to 64 letters per cap following Cohen's second and third quartile)





# Destructive competition ... a few features

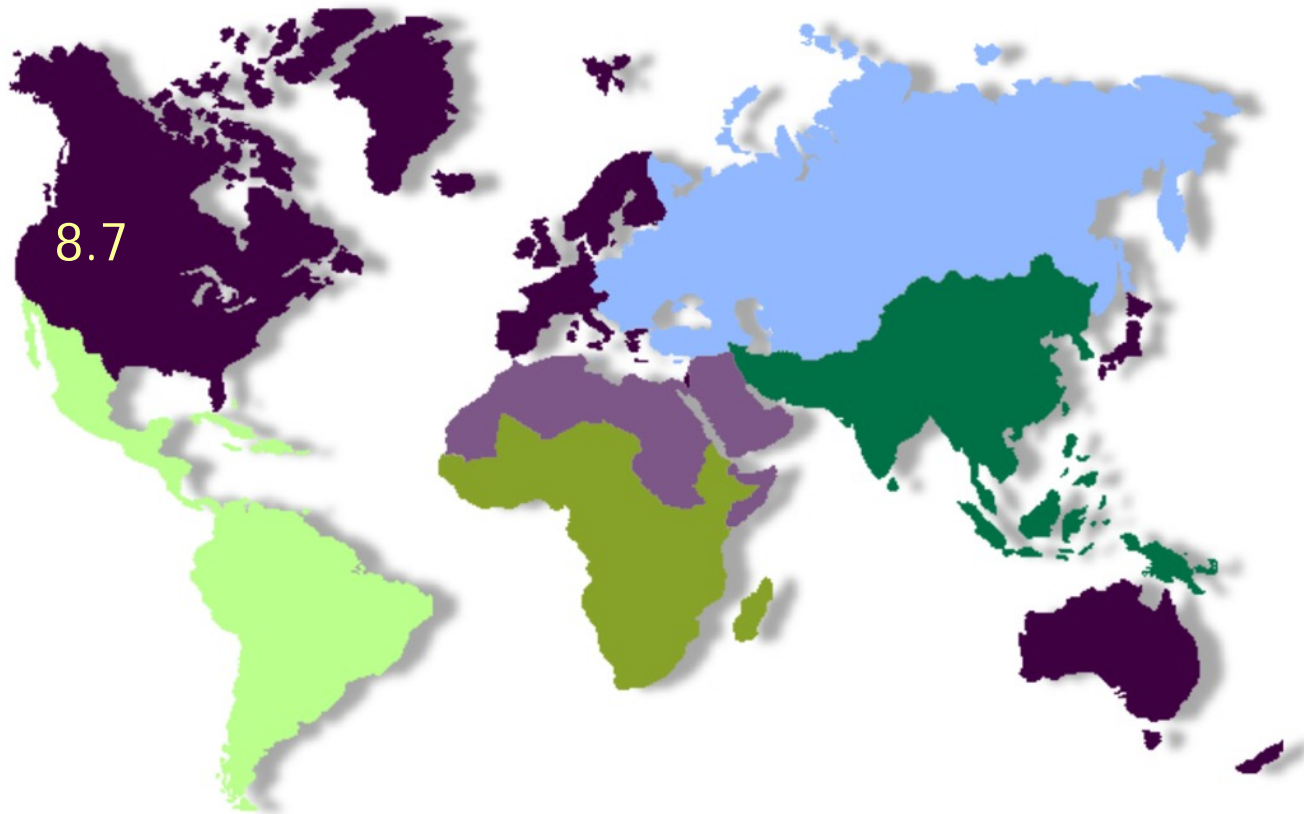


- First described by Sharkey (1982) in the “Theory of Natural Monopoly” (cooperative game approach)
- Further developed by Amir (2002) in a non cooperative approach
- Applied to railroad and trucking initially
- High levels of market instability (typically in Latin America postal markets except Brazil)
- Excessive capacity leading to infrastructure destruction over time (typically in Latin America and Africa)
- Widespread price discrimination (typically in Latin America and Africa)
- Unstable regulatory frameworks (typically in Latin America)



## Yesterday (1876) ... number of letters per inhabitant in industrializing countries

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## And today (2004) ... in industrialized countries

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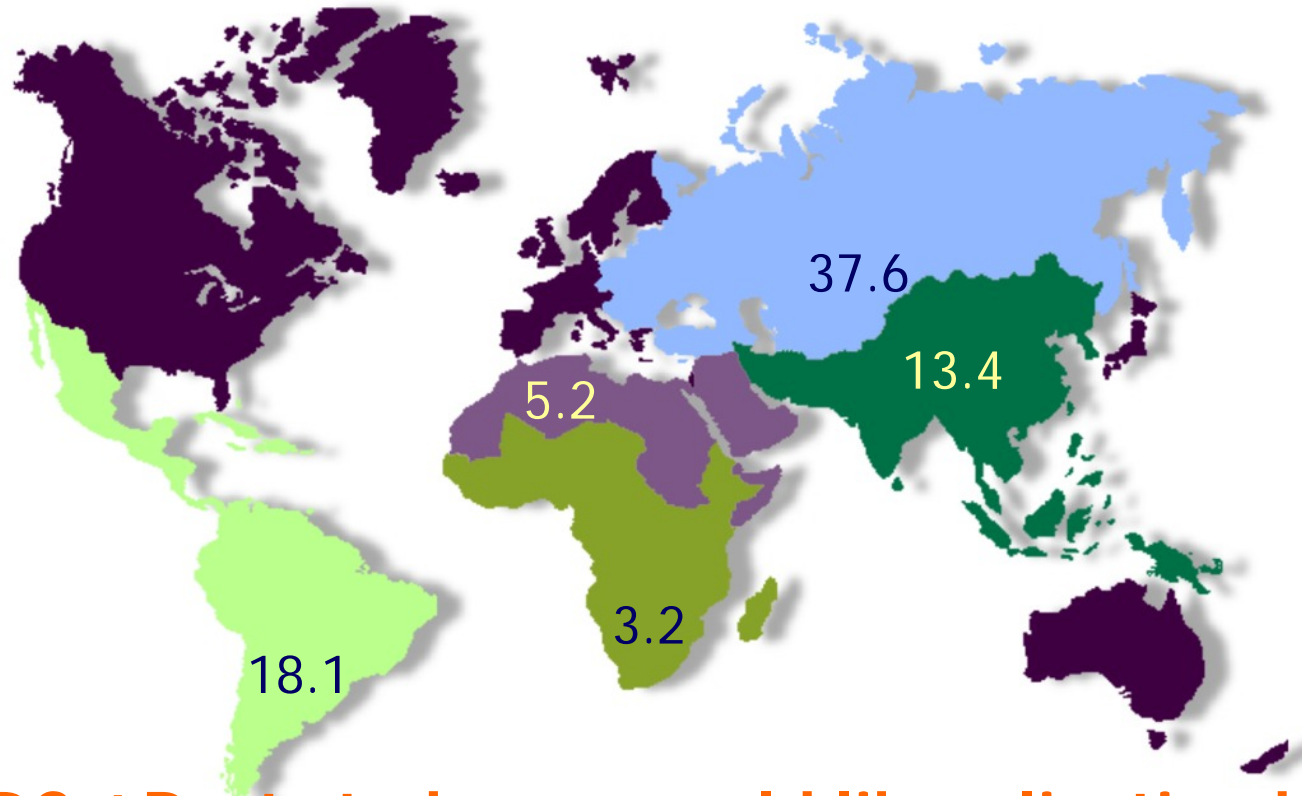


Over a century: volume of mail 50X whereas  
GDP 25X and GDP/hab. 5X ... historical  
efficiency of a public monopoly

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## And today (2004) ... in DCs

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**DCs' Posts today ... would liberalization be as much « competitive/effective » as IC's public monopoly over the last century?**

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**The next step: how do the results of our econometric and economic analyses translate into a definition of USO for different clusters of developing countries (affordability, quality, access) Which market structure? What kind of regulation?**

**Current questionnaire and interviews of African postal administrations...**





## POC Postal Economics Project Group

To join the Group, contact:

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Postal Economics Project Group  
website with documents and  
presentations:

**[www.upu.int/postal\\_economics/en/index.html](http://www.upu.int/postal_economics/en/index.html)**