

Telecommunications infrastructure and economic performance

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Regulatory governance and telecommunications performance An overview

Luis H. Gutiérrez

Universidad del Rosario, Bogota (Colombia)



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Outline

1. Background of Telecom Reform
2. Telecommunications Environment at the Dawn of Reforms
3. Main Questions
4. Stylized Facts and Telecom Reform



Background

1. Debt crisis.
2. Structural reforms countries implemented via WB & IMF.
3. Rise of neoliberalism.
4. Privatization process in telecom industry, i.e. UK, Chile.
5. Poor performance of state owned-operators
6. New telecommunications technology.



Telco environment at the 80's

In most of (developing) countries:

- 1. Incumbent main fixed line operator owned by the state.**
- 2. No competition in fixed telephony**
- 3. No specialized regulatory body responsible for overseeing the industry.**
- 4. Unmet demand of lines, high tariffs and low quality of service.**

Questions

1. What have telecom reforms achieved?
2. What empirical studies have been done?
3. What results were obtained?
4. What is our understanding of the telecom reform?
5. What is still lacking in the research?

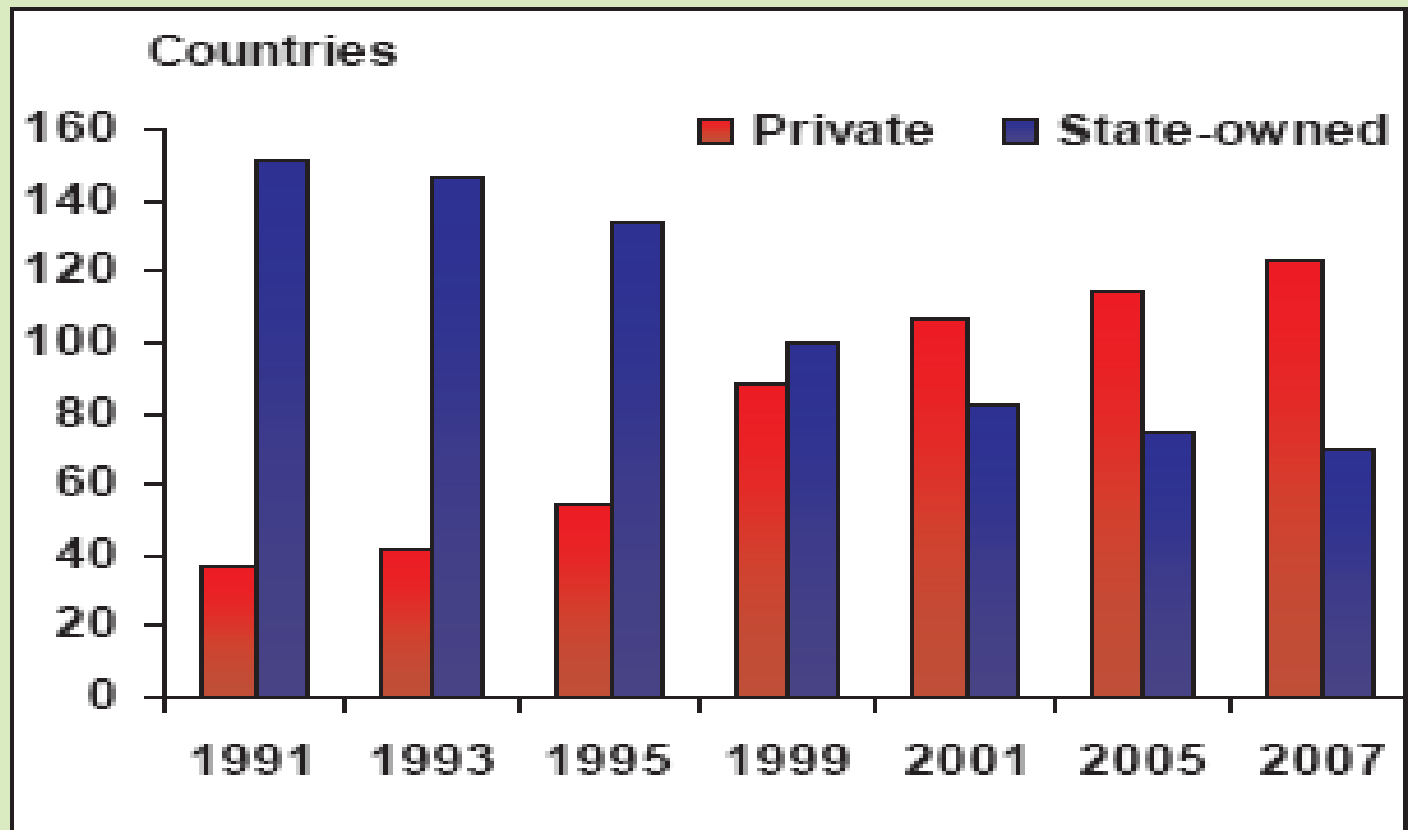
What have telecom reforms achieved?

1. First, allowed private investment being the driver of the telecommunications industry.
2. Second, allowed the existence of specialized regulatory agencies.
3. Third, allowed, to some extent, more competition.
4. Four, allowed the consumption of telecom services to a greater number of the population at (lower) prices.

Stylized Facts Before and After the Reforms

Rise of private participation

As of 1 June 2007



Source: ITU World Telecommunication Regulatory Database.

Sector reform

Privatizations of incumbent operators worldwide, 1997

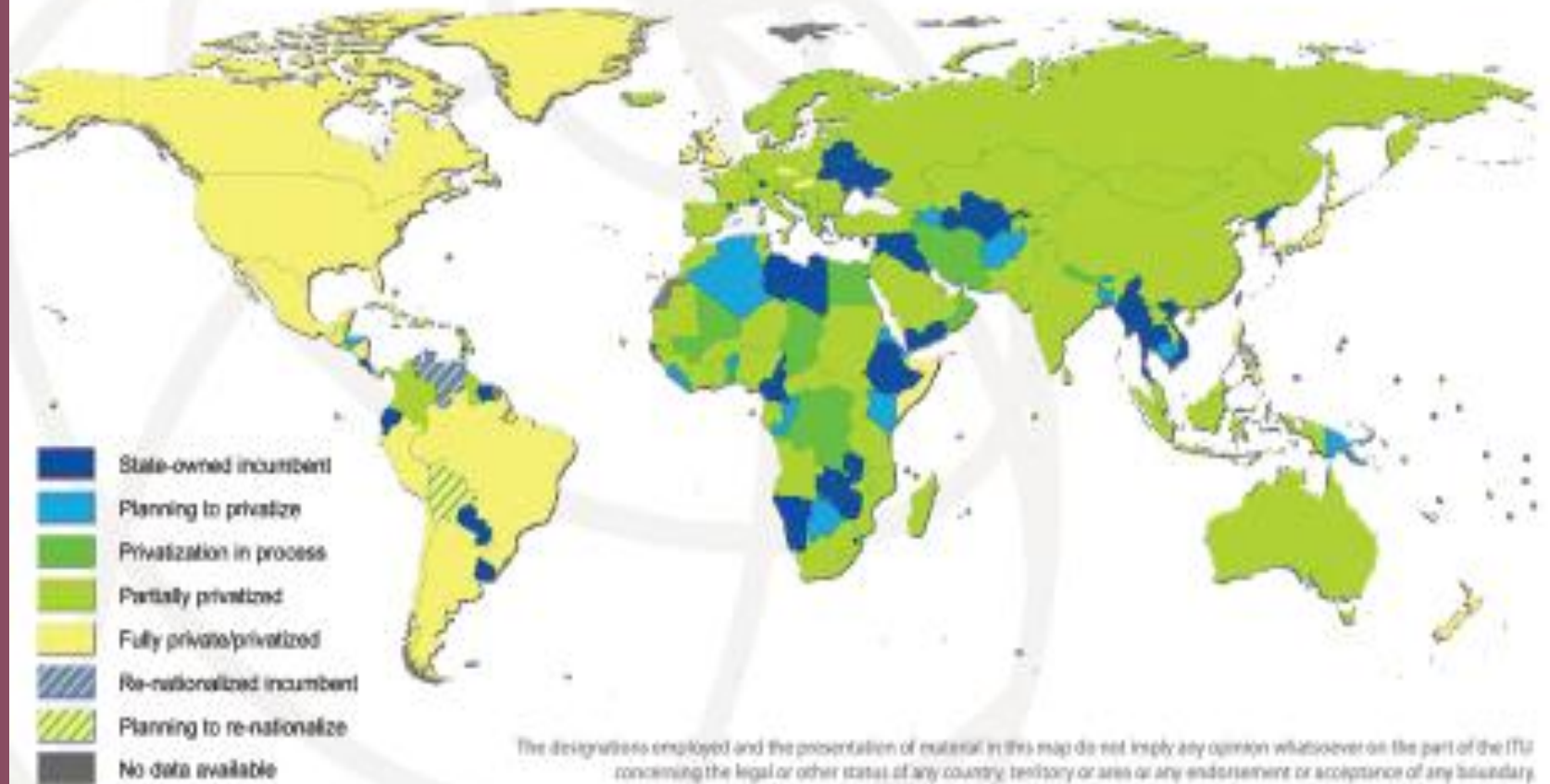


The designations employed and the presentation of material in this map do not imply any opinion whatsoever on the part of the ITU concerning the legal or other status of any country, territory or area or any endorsement or acceptance of any boundary.

Source: ITU World Telecommunication Regulatory Database

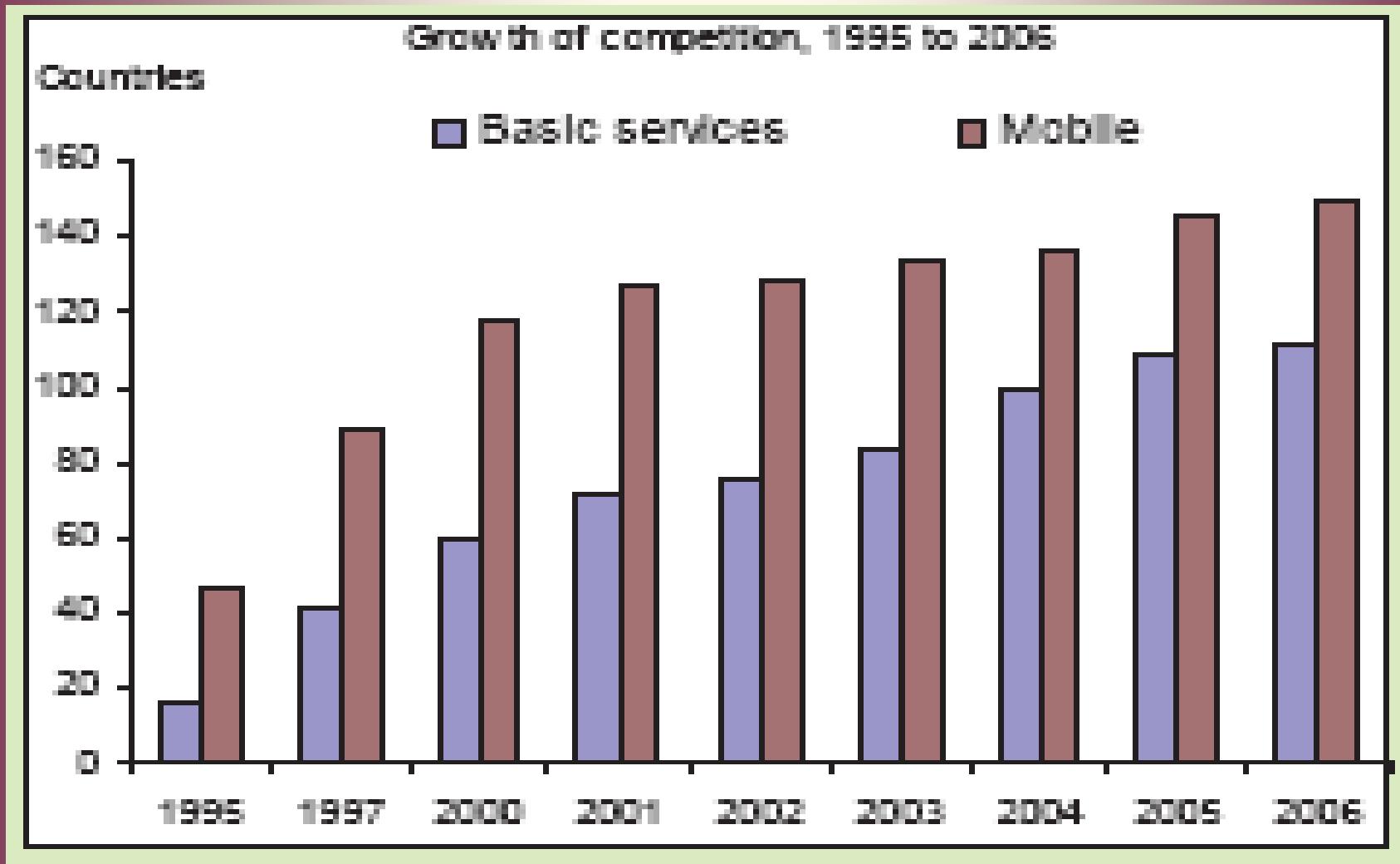
February 2008

Privatizations of incumbent operators worldwide, 2007

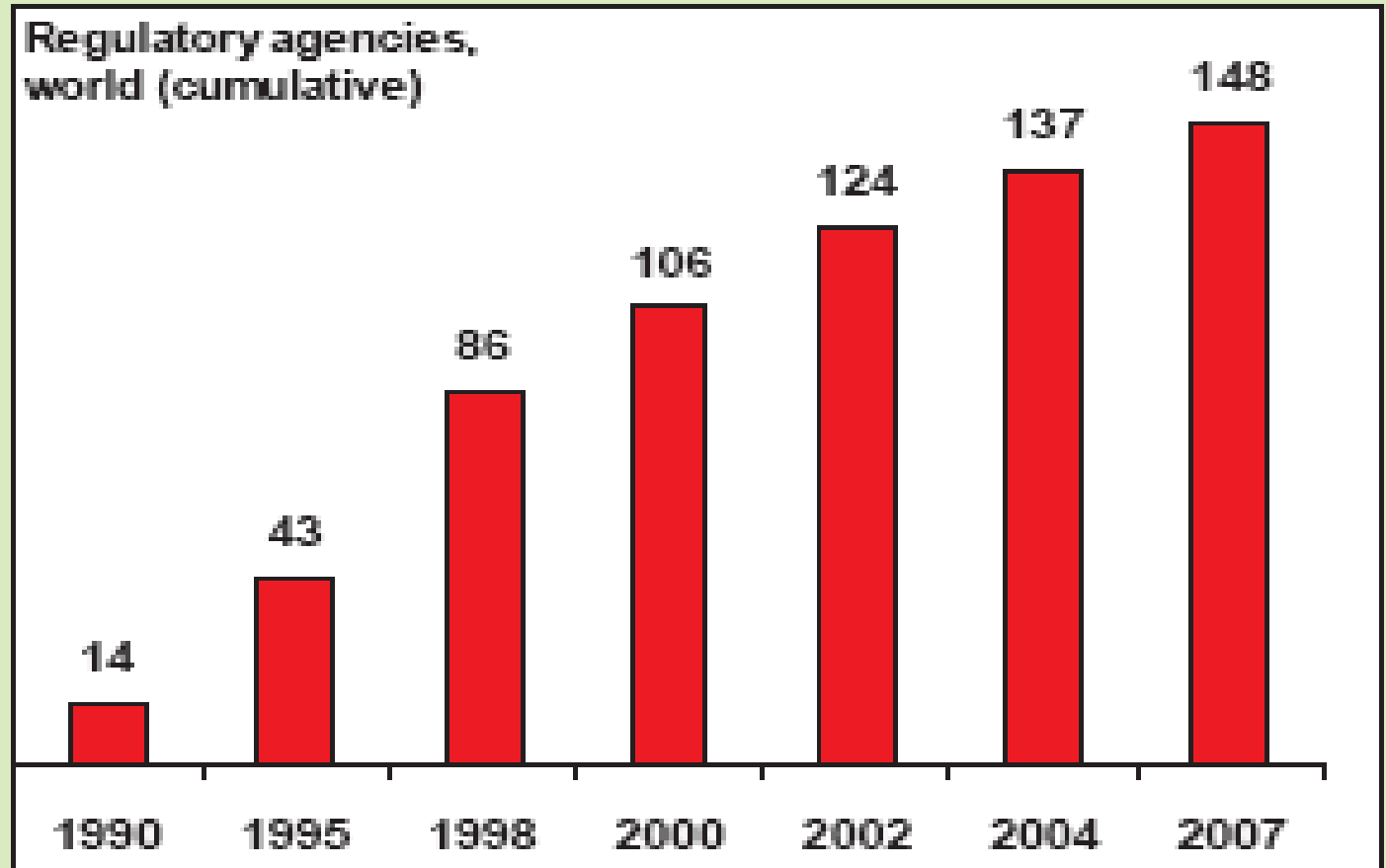


Source: ITU, Trends in Telecommunication Reform 2007: The Road to NGN.

Industry a bit more competitive

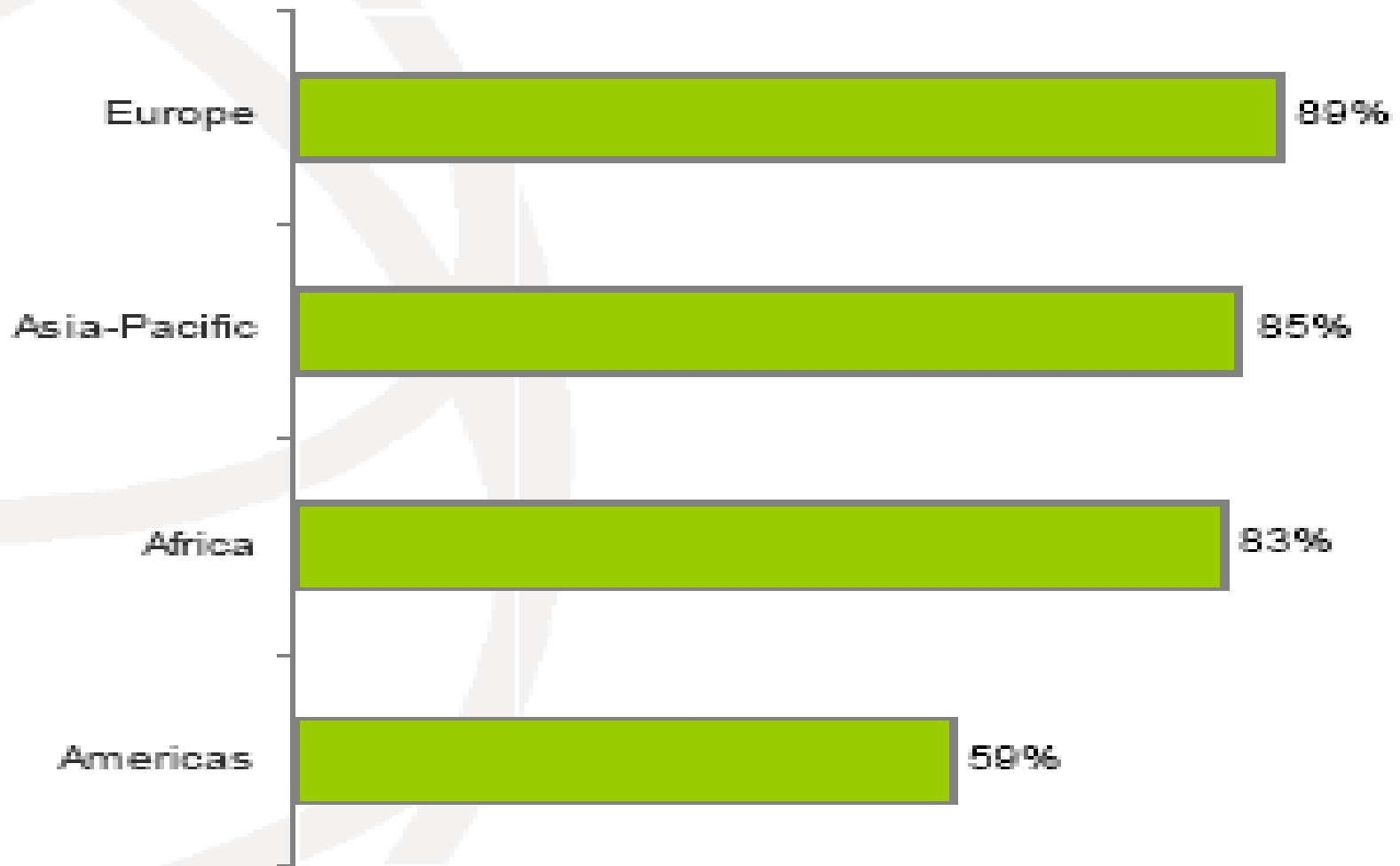


Regulatory agencies

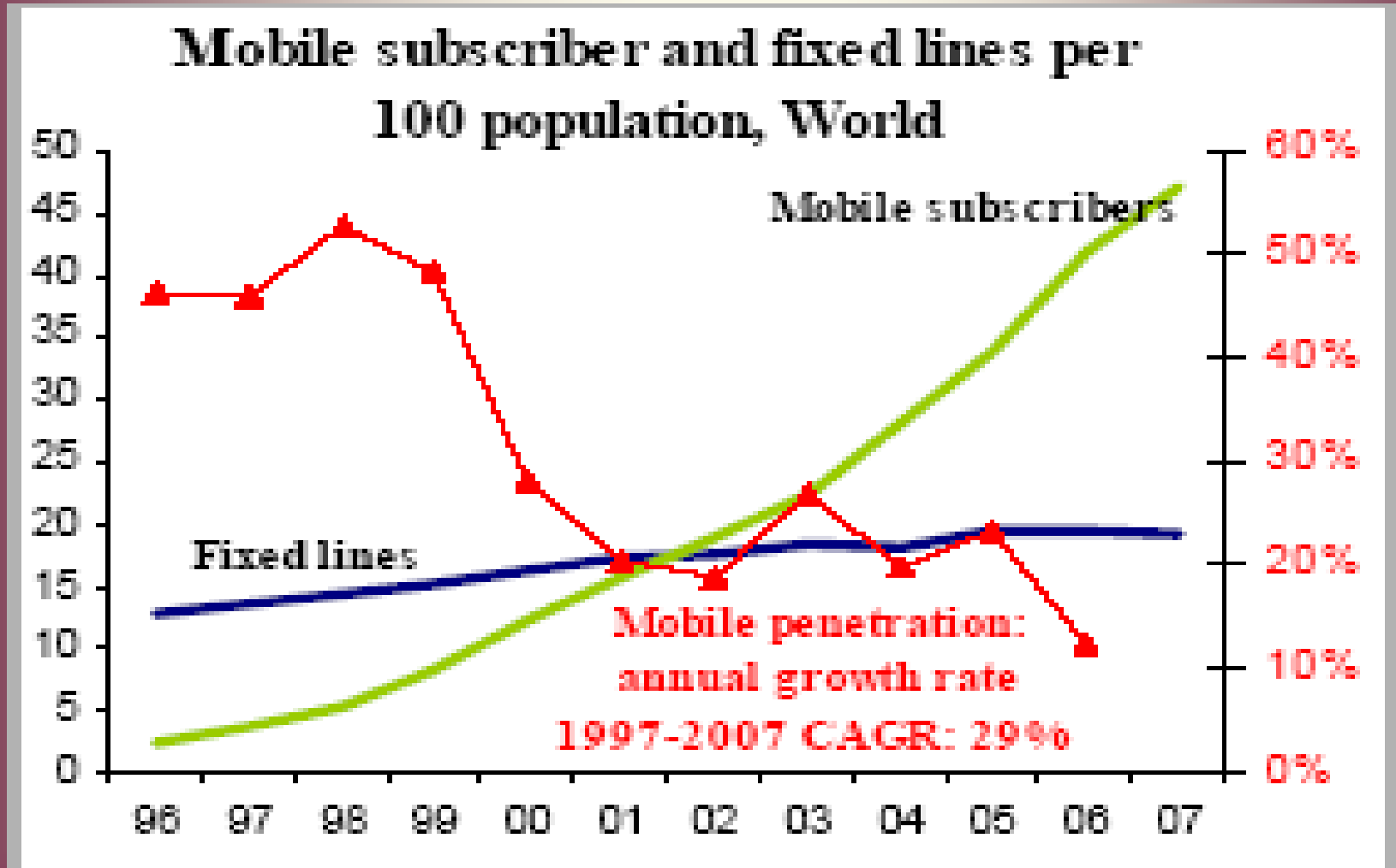


Source: ITU World Telecommunication Regulatory Database.

Percentage of regulators in each region, 2007

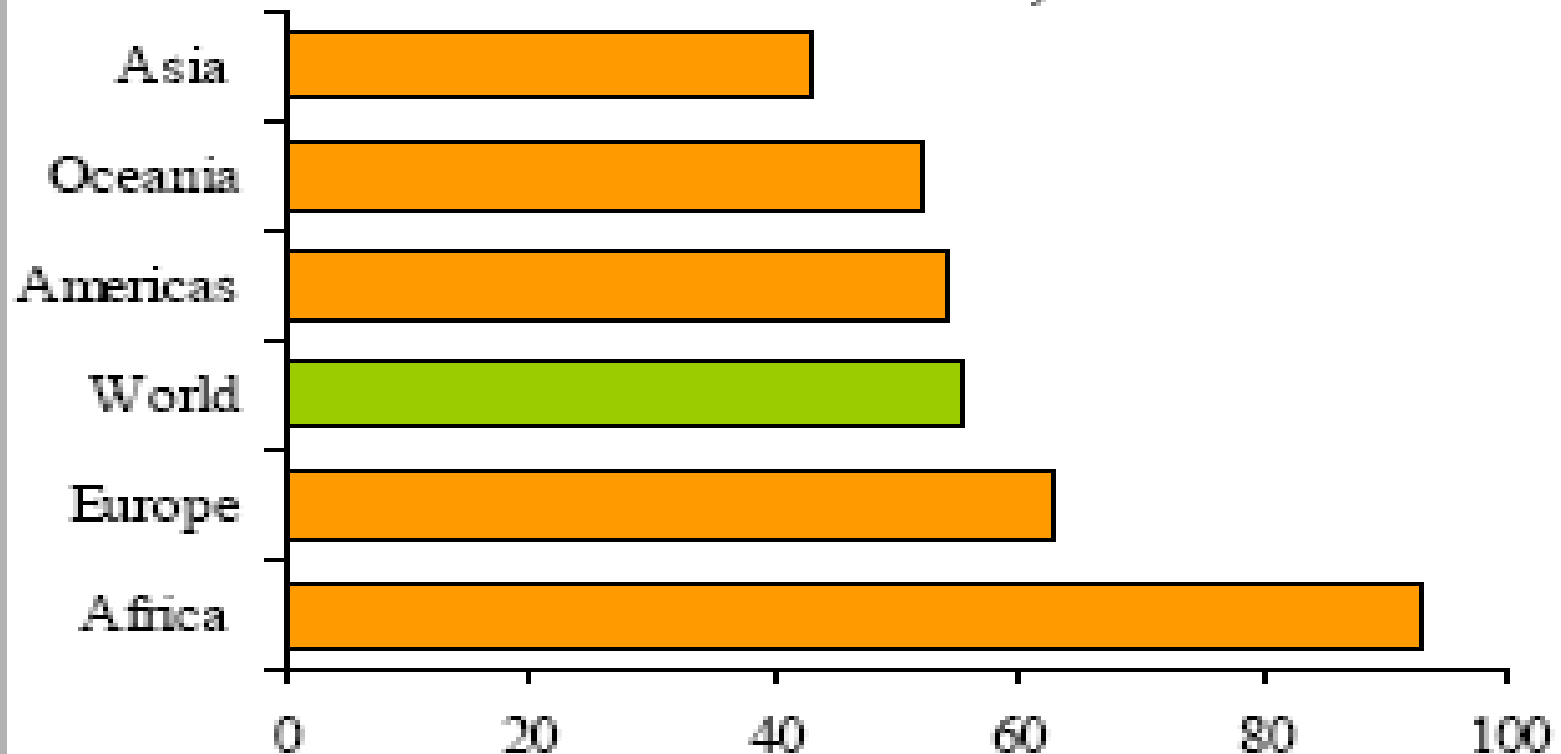


Telephone subscription dynamics



Mobile pre-paid

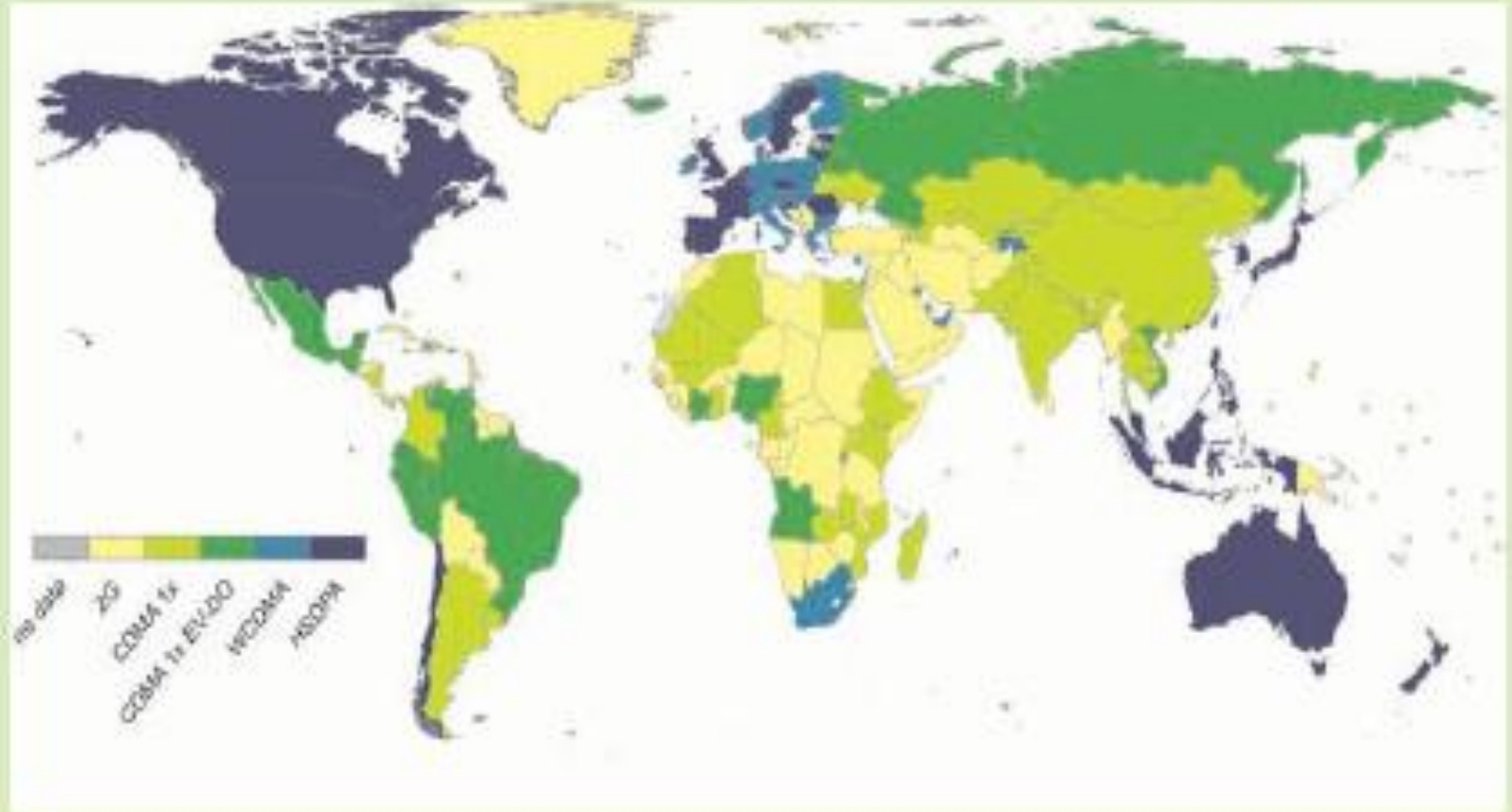
Prepaid subscribers as a % of mobile cellular subscribers, 2006



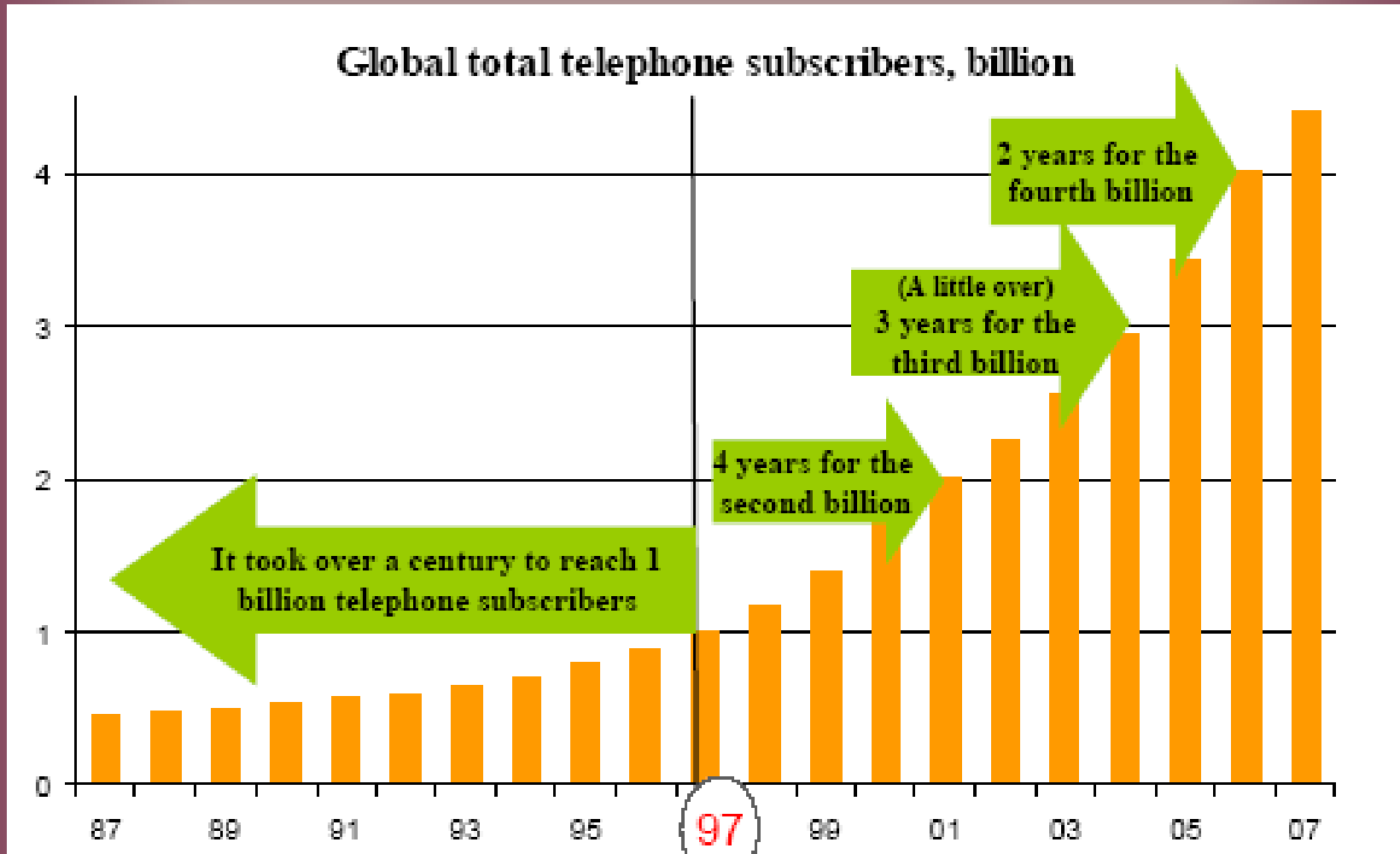
Source: ITU World Telecommunication/ICT Indicators Database

Mobile telephony

Figure 1.4 – Map of mobile technologies worldwide, May 2007



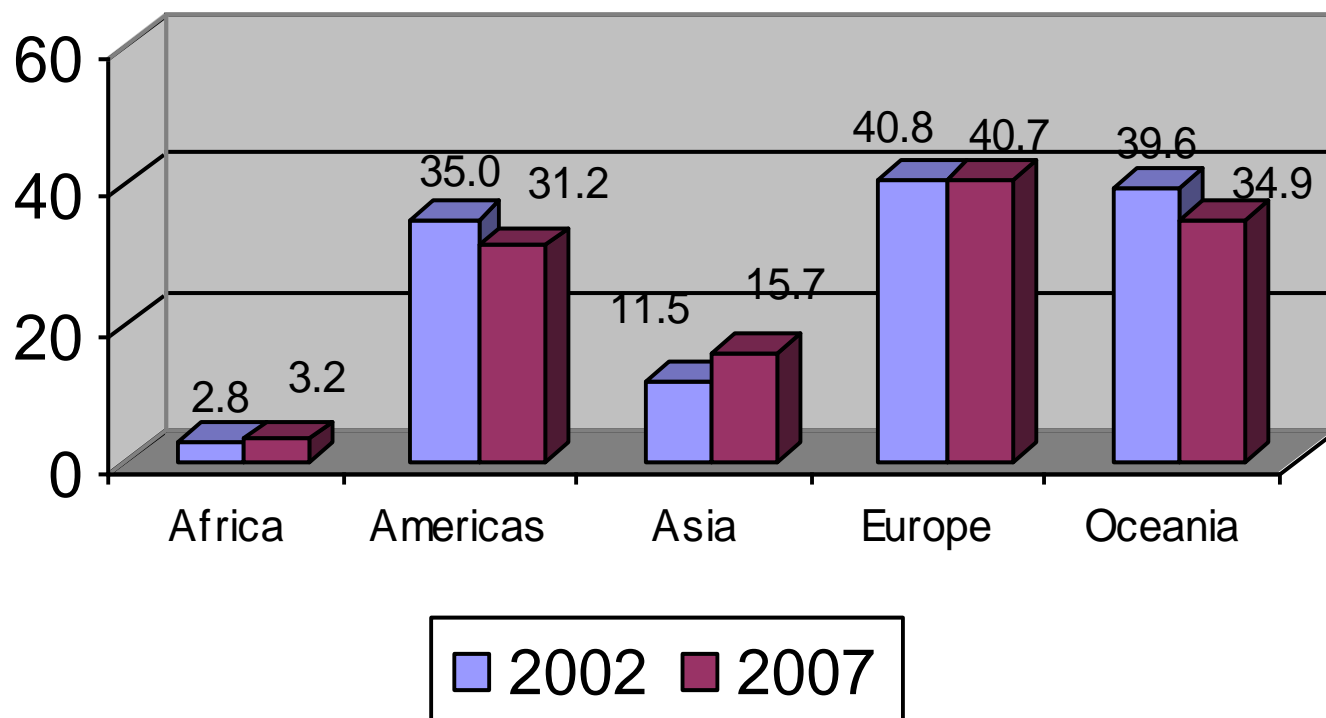
Telecom dynamics



However

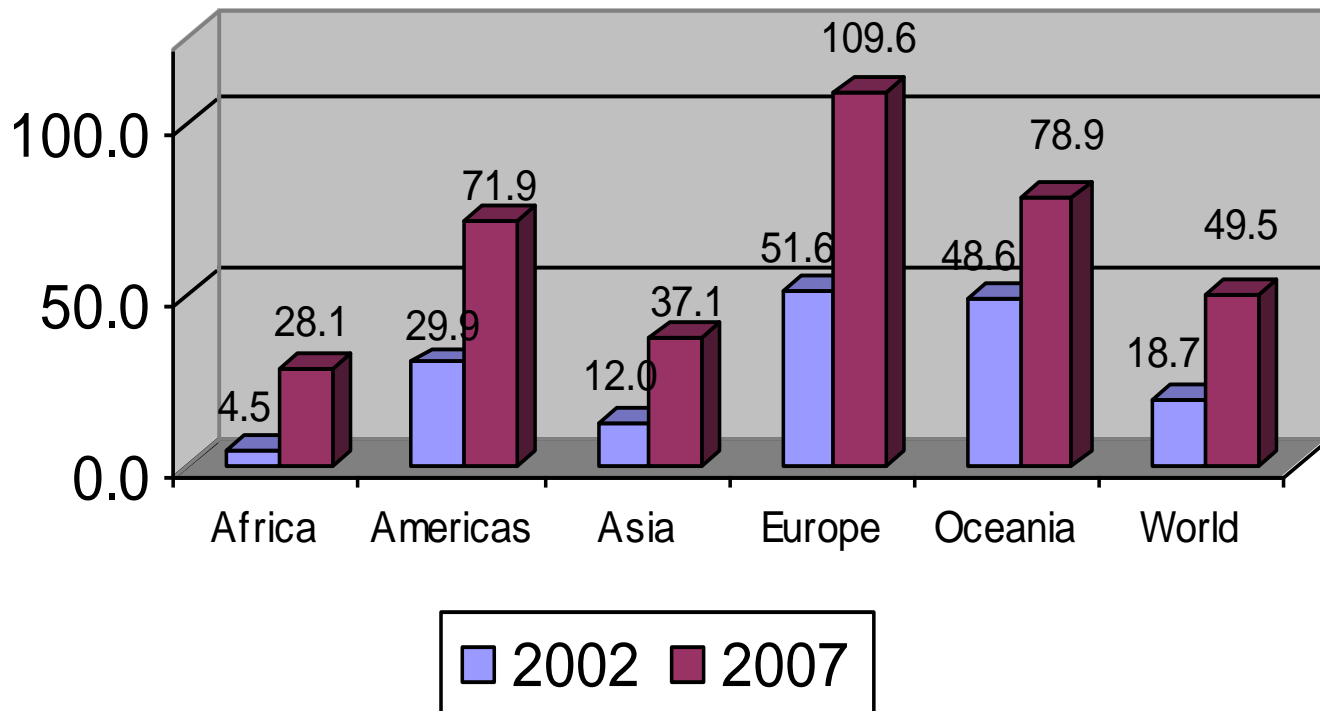
Digital divide persists or stagnates in old ICT

Main Fixed Lines per 100 Inhabitants



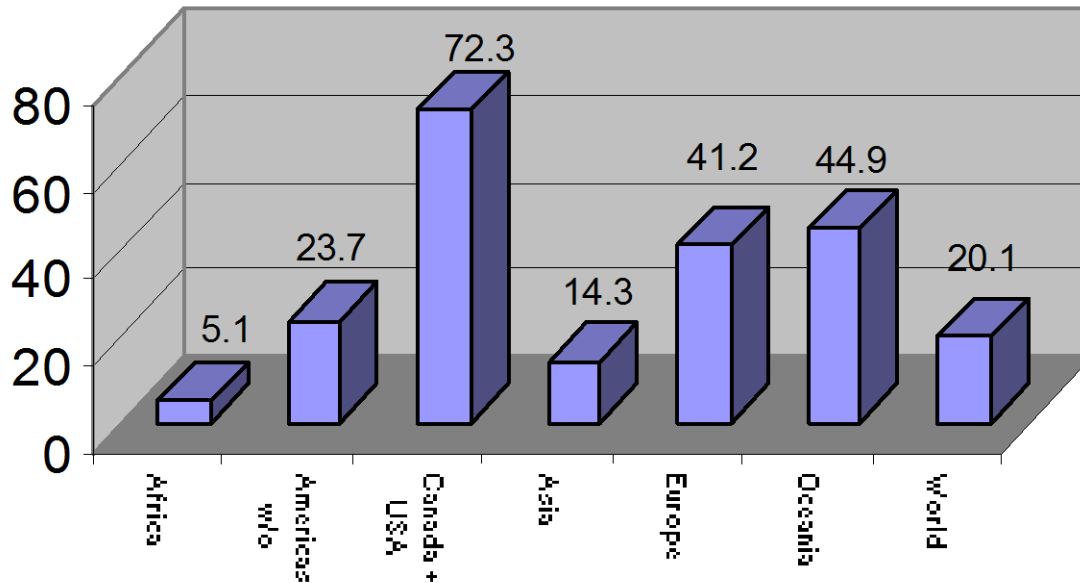
And it still persists in new ICTs

Mobile Lines per 100 Inhabitants



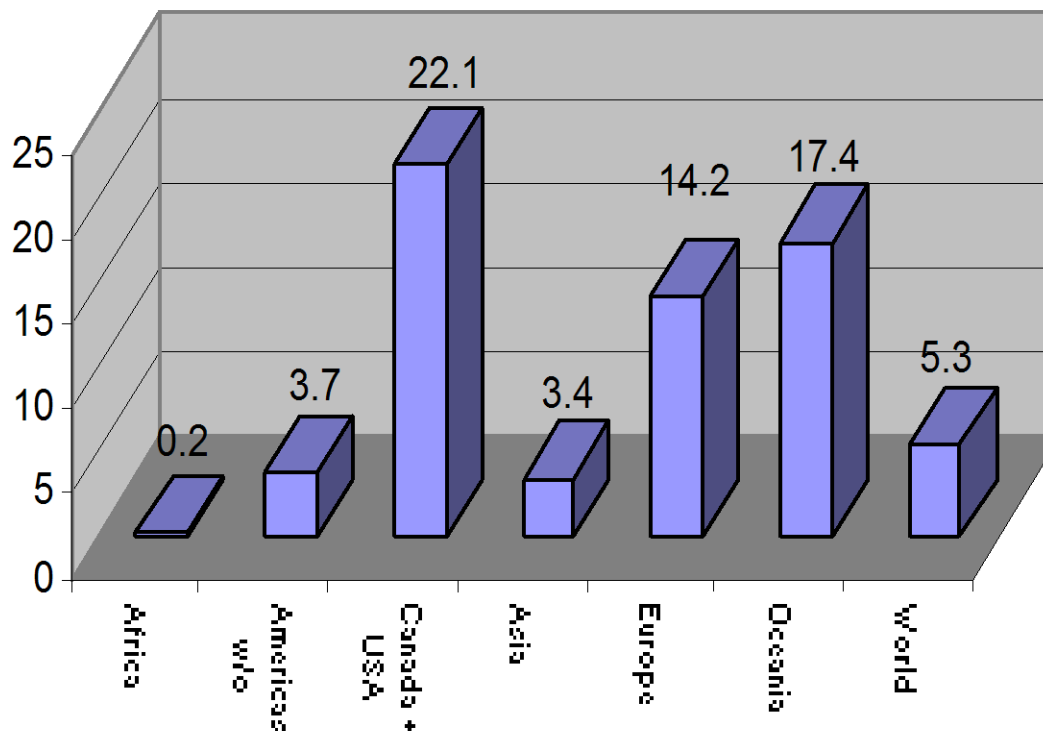
And it widens in modern ICTs

Number of Internet Users per 100 Inhabitants 2007



And it widens more in modern ICTs

Number of Broadband Subscribers per 100 Inhabitants 2007



Empirical Studies

Studies

First wave

- Seminal paper: Ros, 1999
- Boylaud & Nicoletti, 2001
- Hennisz 2001
- Wallsten, 2001
- Gebreab, 2002
- Esfahani & Ramírez, 2003
- Gutiérrez, 2003
- Gual and Trillas, 2004
- Li and Xu, 2004

Second wave

- Fink, Mattoo & Rathindran, 2003
- Ros, 2003
- Wallsten 2003, 2004
- Grzybowski, 2005
- Edwards & Waverman, 2006
- Estache, Goicoechea & Manacorda, 2006
- Maiorano & Stern, 2007
- Montoya & Trillas, 2007
- Gasmi & Recuero, 2008

First wave

Main objective: see how telecom reforms have impacted performance in the telecom sector

- 1. Privatization**
- 2. Liberalization/competition, and in some studies**
- 3. Regulation**

First/Second wave : peculiarities

1. Different samples of countries and years, maybe, the result of trade-offs between coverage and availability of data of some characteristics of reform that wanted to be tested.
2. Different methodologies to address the research: Most did panel data in different versions... but ...*reduced* form models.
3. Concerns for endogeneity of reform variables.

Second wave : peculiarities

1. Addressed new factors that affected performance i.e., effect of price caps (Ros 2003), or used different performance variables, i.e., interconnection rates (Edwards and Waverman).
2. Addressed whether *sequence* of reforms *mattered*, i.e., privatization before competition or vice-versa (Fink, Mattoo, and Rathindran) or, regulation prior to privatization (Wallsten 2003).

Second wave : peculiarities

3. Used *structural* models, or system of simultaneous equations i.e., demand and supply (Grzybowski); mobile density, GDP per capita, regulatory governance (Maiorano and Stern).
4. Explore in details the two-way causal relationship between sectoral reform and network deployment (Gasmi and Recuero).

Main reform variables

Privatization & competition : concepts introduced by all authors, although measured in different ways

Regulation

Regulatory Process

1. Levy and Spiller (1994) argue that the regulatory process can be thought as composed of two dimensions:
 - Regulatory governance, and
 - Regulatory incentives

Simple measures of “Separate” or “Independent” Regulatory Agency

- 1. Wallsten 2001, 2003, 2004.**
- 2. Gebreab 2002.**
- 3. Fink, Mattoo, and Rathindran 2003.**
- 4. Ros 2003.**
- 5. Maiorano and Stern 2007.**
- 6. Gasmi and Recuero 2008.**

Composite: Measuring Regulatory Governance

- 1. Gutiérrez 2003, proxying the quality of regulatory governance.**
- 2. Gual and Trillas 2004 and 2006, proxying the regulatory independence.**
- 3. Edwards and Waverman 2006 EURI index.**
- 4. Montoya and Trillas 2007 proxying regulatory independence and governance.**

Regulatory governance

1. Regulatory process goes beyond the creation of an IRA.
2. Regulation is not a nothing or all process.
3. Regulatory governance aims at assessing the de jure main criteria that a regulatory bodies should have:
 - Criteria: Clarity of roles and objectives; autonomy; participation; accountability; transparency; and predictability.
 - Type of legislation that supports the IRA.