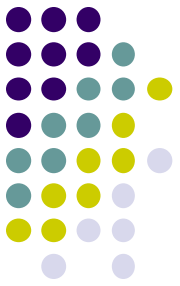


Short run policies and long run outcomes: RER, export diversification and technology



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Research Dialogue on
Emerging Economy Perspectives and Priorities
In the New Multi-polar World

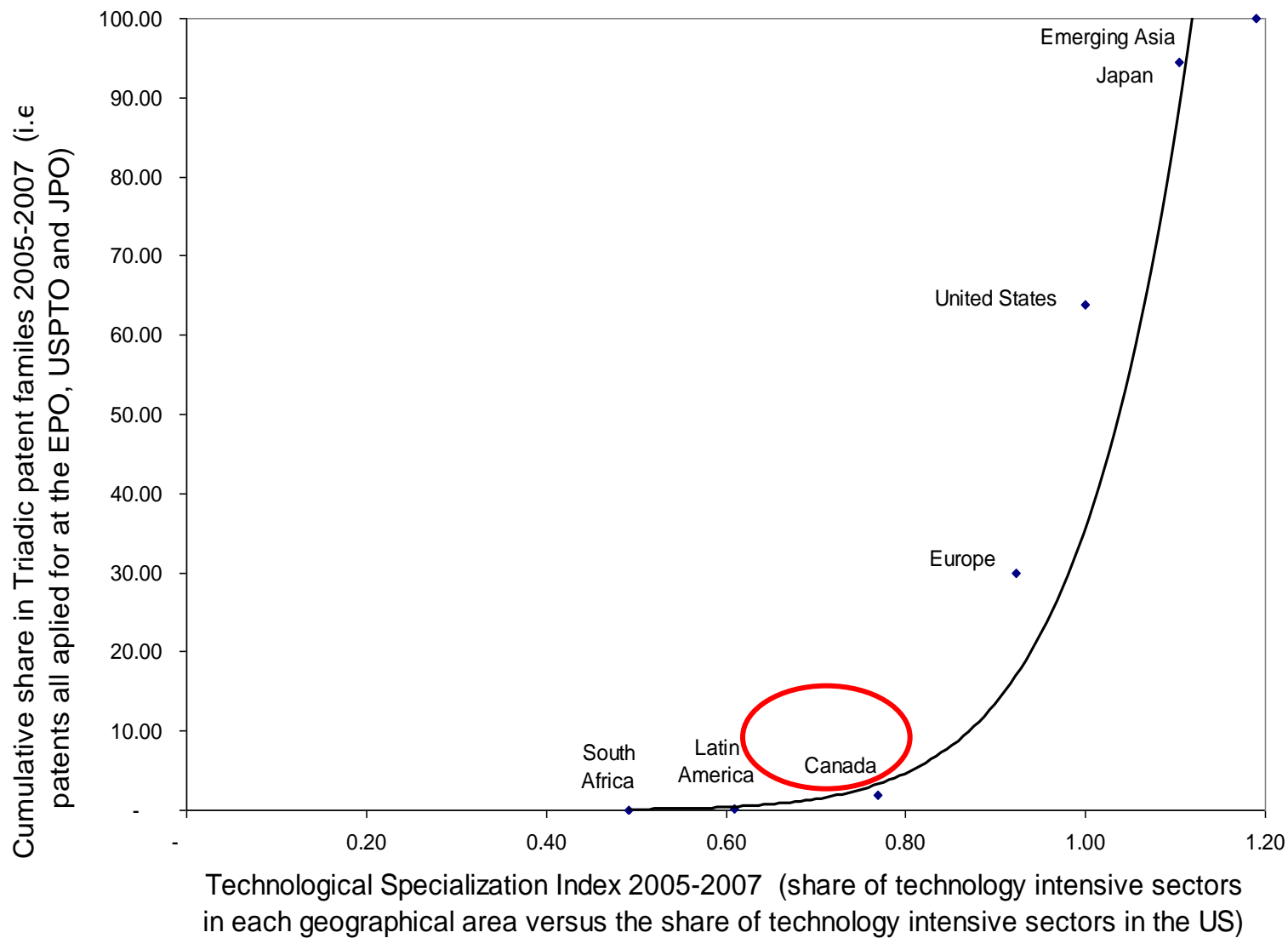
Beijing, China
November 13th-15th, 2011

Innovation and development

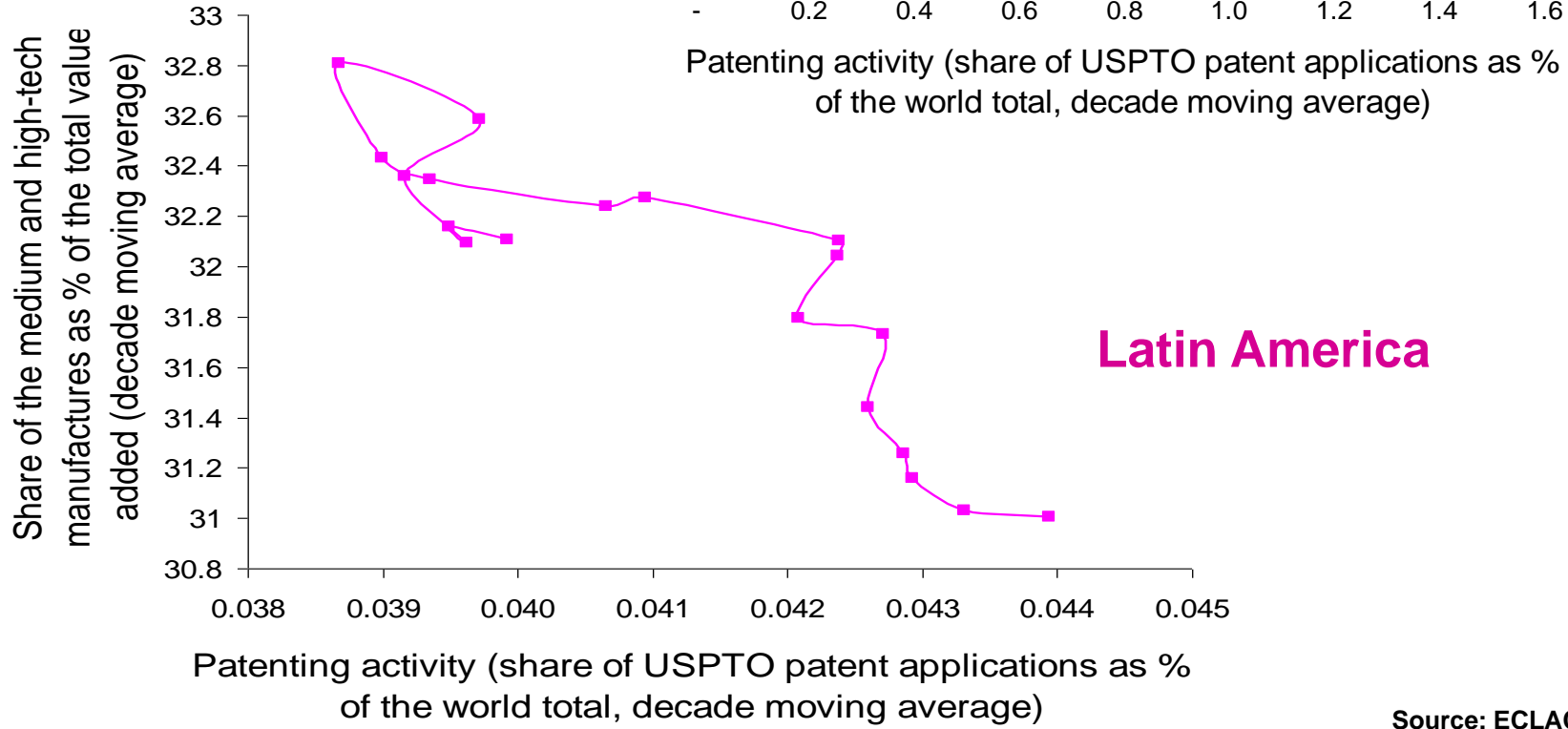
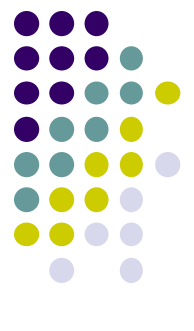
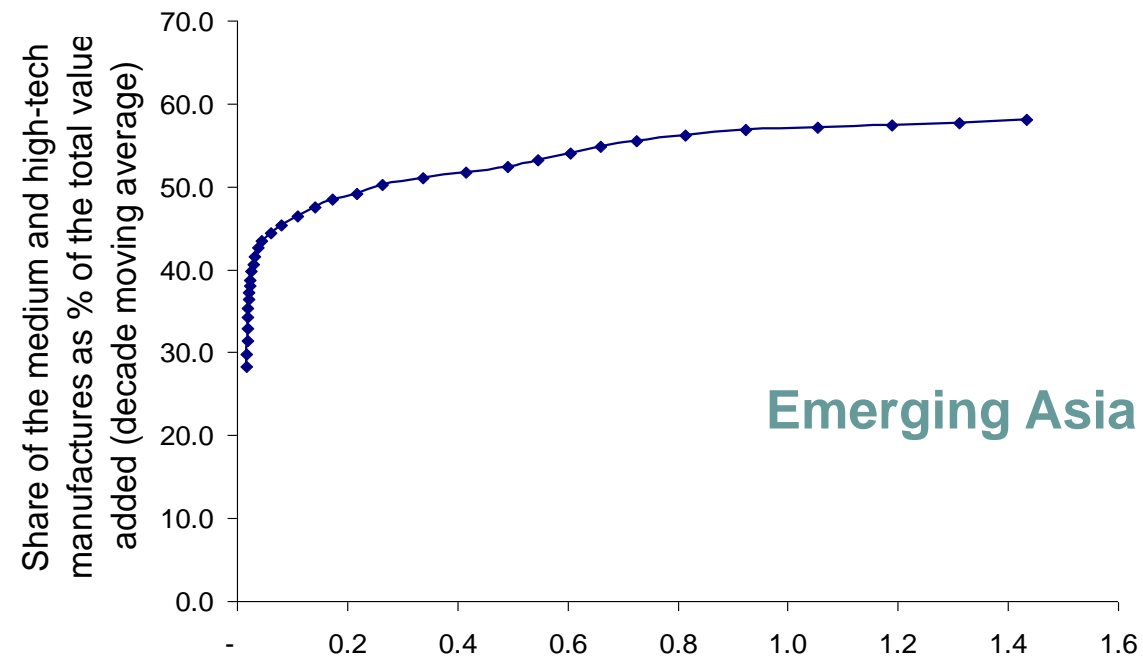


- Structural change and specialization
- Accumulation of technological capabilities
- Technological capabilities and IPR
- Industrial and technological policies
- Macro policies and RER

The knowledge curve



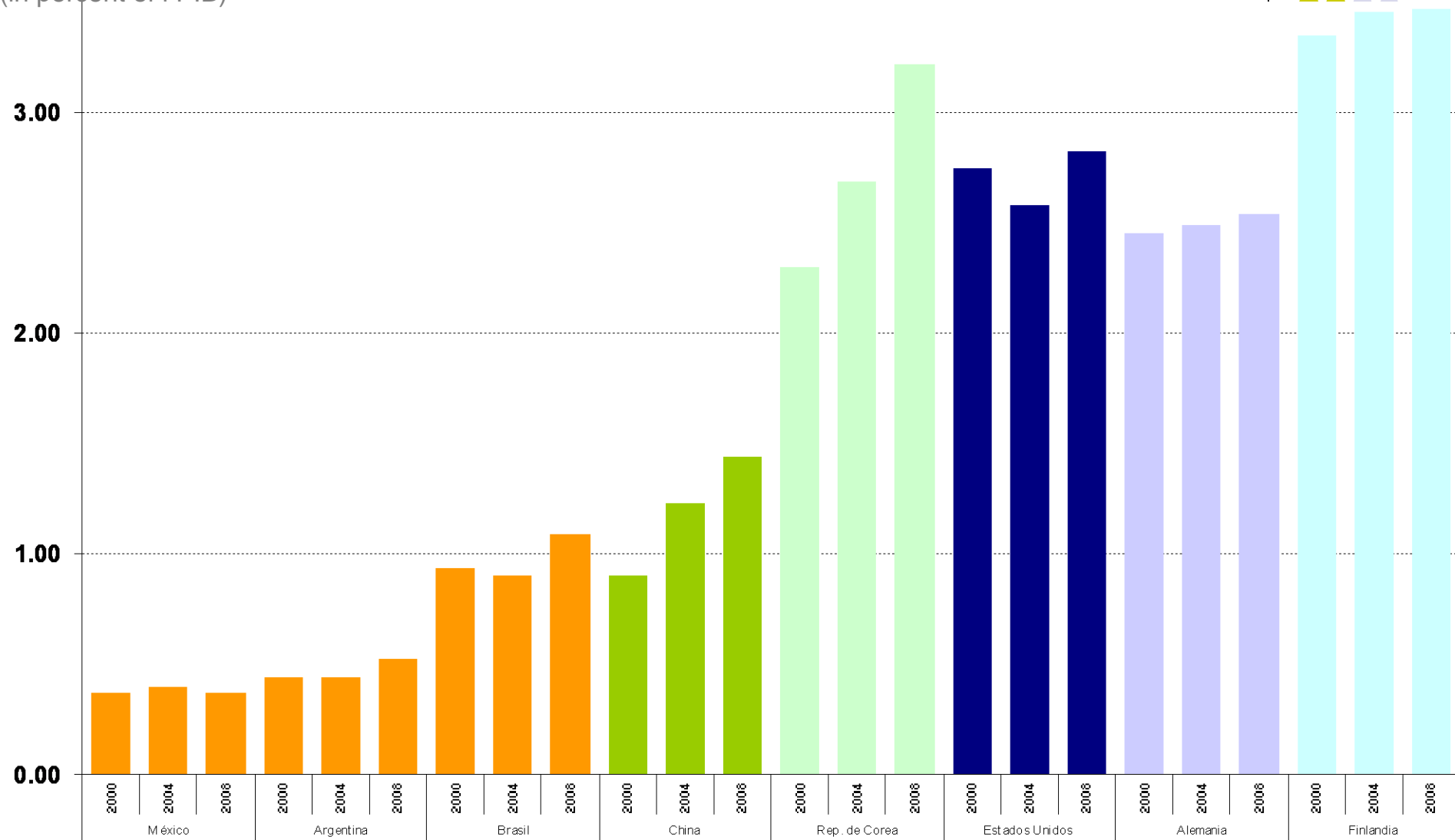
Capabilities and patenting



R&D expenditures: selected countries

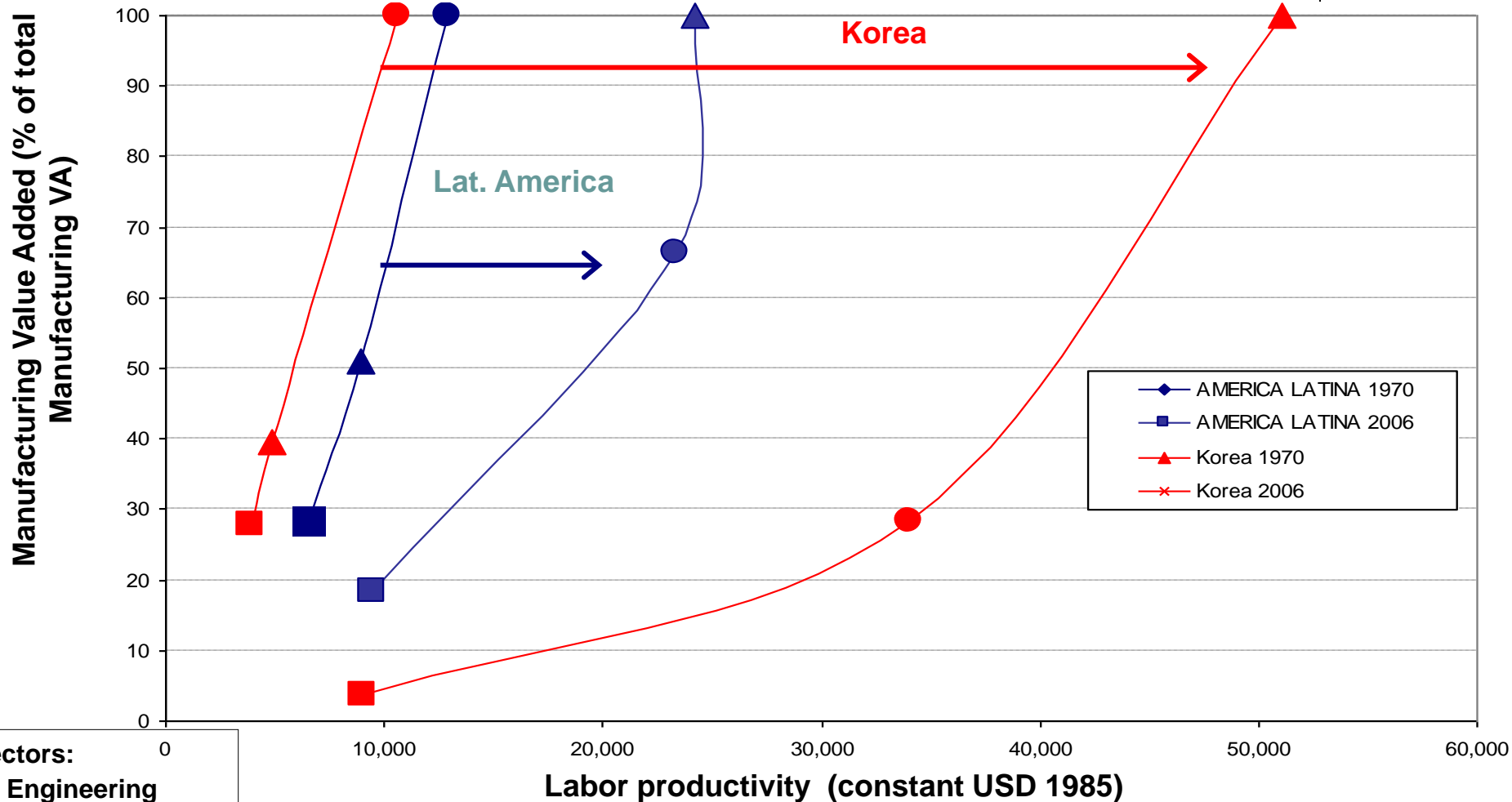


R&D spend ((2000, 2004, 2008)
(in percent of I PIB)



Production structure and productivity

Latin America and Korea: 1970 -2006



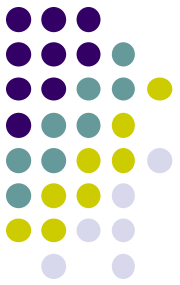
Sectors:
△ Engineering
○ Natural
□ sources

The productive structure and innovation: demand and supply forces

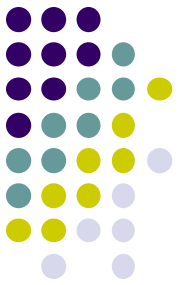


- There is a clear relationship between specialization and innovative efforts
- Countries specialized in medium and high-tech industries tend to show higher levels of R&D, learning and diversification
- An increase in the RER that diversifies the economy towards sectors with higher technological intensity may accelerate learning, increasing returns and diversification

The need of industrial policy



- It is remarkable the lower values of R&D in ABM as compared to China and especially Korea and Finland
- This reveals the low degree of articulation of the National System of Innovation in LA and the absence of effective industrial policies
- Macroeconomic policies have not stimulated (at least during large part of the period) structural change; industrial policy did not contribute to compensate this disadvantage



Main topics

Real Exchange Rate (RER) behavior and implications for structural change

- 1) RER, specialization and growth**
- 2) RER, diversification and macroeconomic policies**
- 3) RER volatility and the international economy**

Shocks, macro policies and the long run



- The interaction between macro prices and short run shocks x structural change and long run growth requires to be explored more carefully, particularly in economies specialized in commodities and with a less diversified productive structure, whose performance is more vulnerable to shocks
- Latin America represents an interesting example of these interactions because industrial exports are highly sensitive to the real exchange rate

Why are these links so crucial?

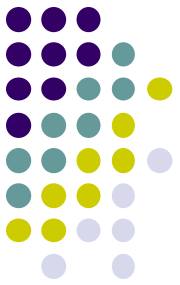


Structure x short run:

- countries specialized in commodities suffer more intense and more frequent shocks
- macro policies in these economies have to respond to recurrent BOP and fiscal disequilibria, caused by cycles in commodity prices and financial liquidity in the international markets

Short run x structure:

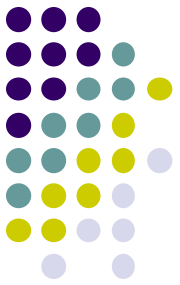
- in developing economies, a low RER implies that key industries (from a technological point of view) are unable to compete because the technology gap is high
- macro policies and price shocks have tended to depreciate the RER in several LA countries in recent years
- this in turn increased the share of sectors intensive in natural resources in the economic structure in several countries, while engineering industries declined



1) RER, specialization and growth

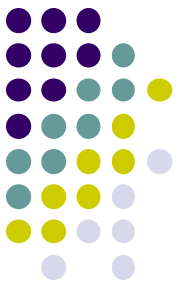
Why is the RER important for the production structure?

- A higher RER compensates for lower productivity in medium-tech (and in some cases high-tech) sectors
- Exports of natural resources are less dependent on the RER to survive



Results

- A **higher RER** encourages export diversification and raises the share of medium and high-tech exports in total exports
- This result is **robust** to various model specifications
- **Volatility** of the RER reduces export diversification



“Endowments are not fate”

- **Arable land** is positively associated with a higher share of MHT in total exports
- **Agricultural value added in GDP** is negatively related with this share
- Thus, the key issue is whether the country uses or not the rents from natural resources in fostering structural change

2) Diversification and macroeconomic policies



What is the “correct” RER for development?

- **Inflation target**

There is a RER which is consistent with inflation target, which may not produce equilibrium in current account.

- **Current account equilibrium**

There is a RER that secures equilibrium in current account. But in countries where natural resources are abundant, this RER may be too low to allow certain industries to survive.

- **Industrial diversification**

There is a RER which allows certain industrial sectors (considered as drivers of learning) to survive in the long run.

Relative Unitary Cost and condition for competitiveness

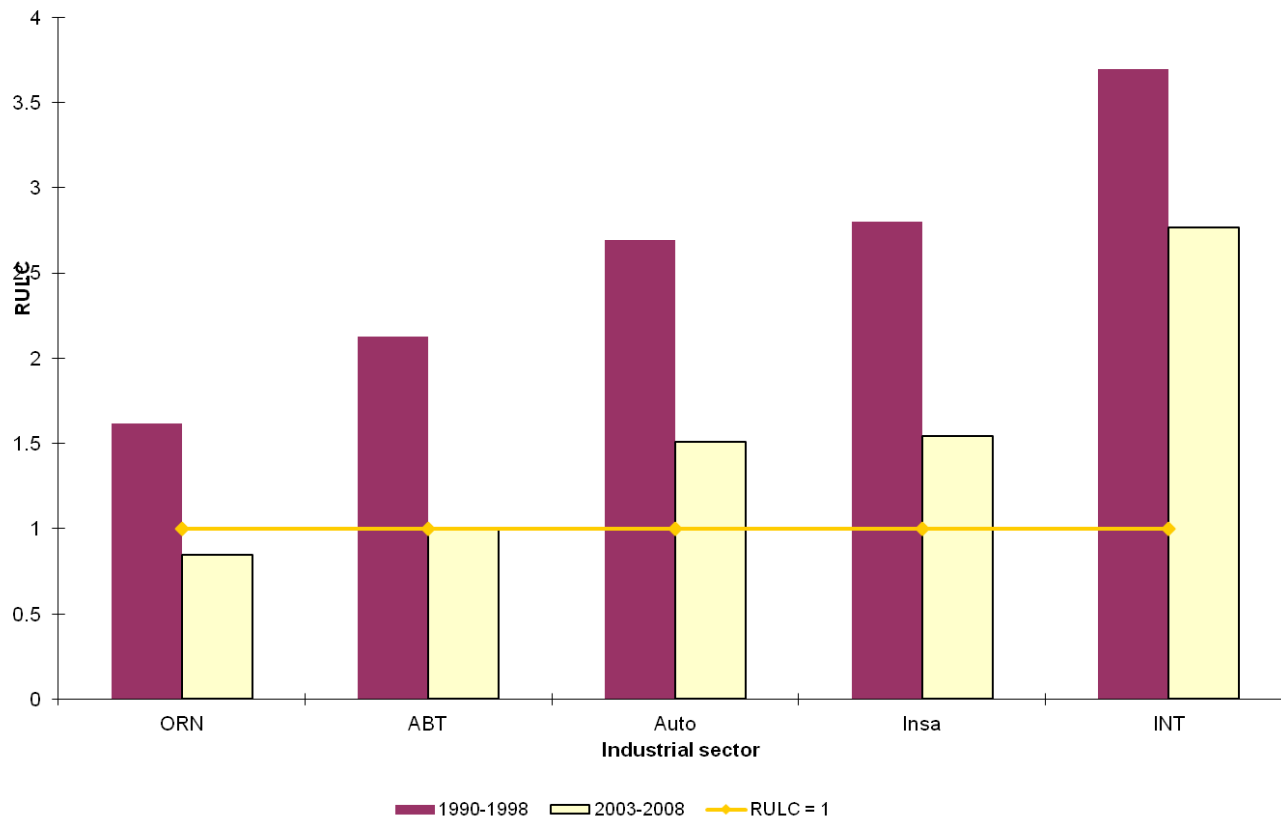


$$RULC_z = \frac{W / \pi_z^S}{W * e / \pi_z^W} = \frac{\text{productivity gap}}{RER}$$

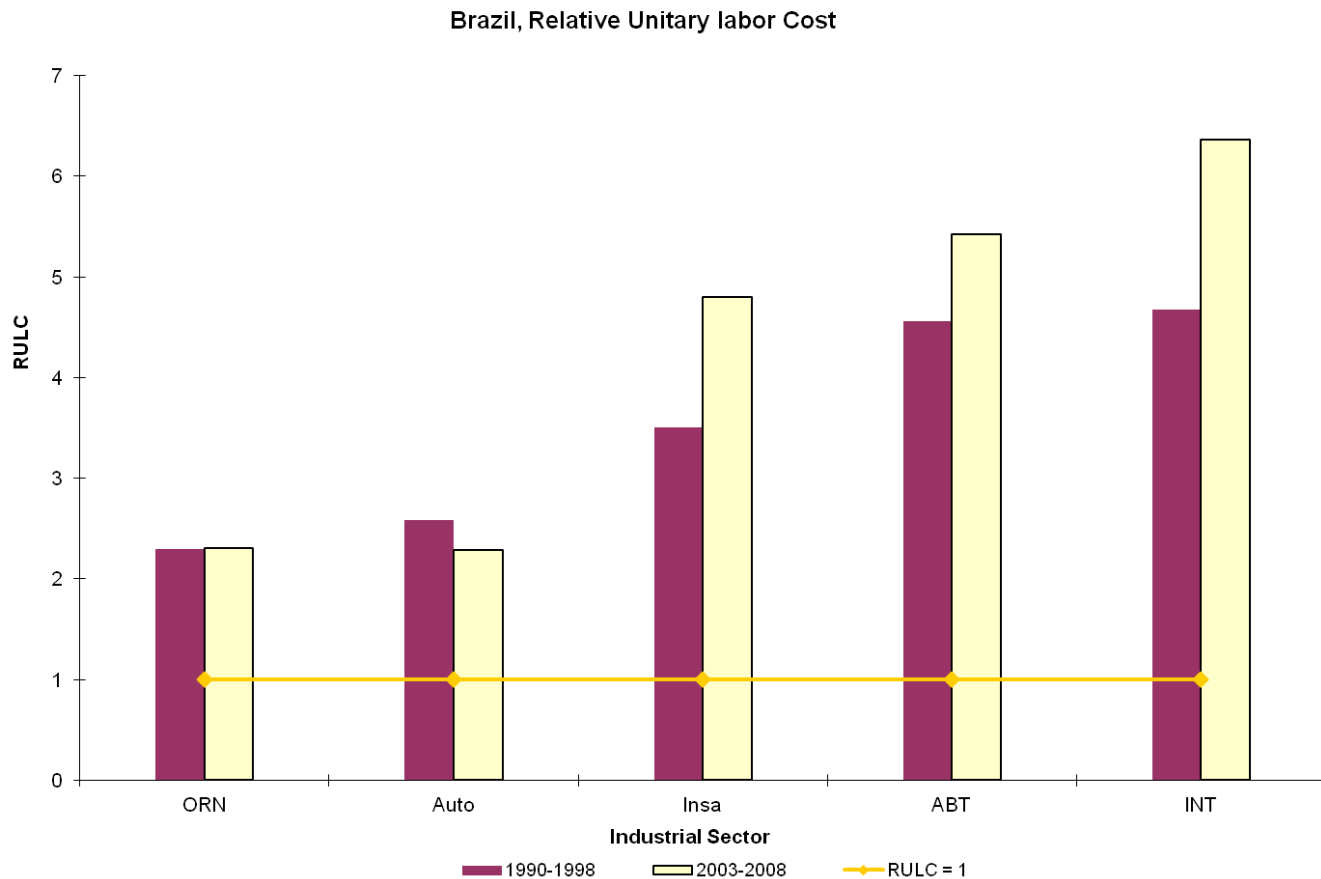
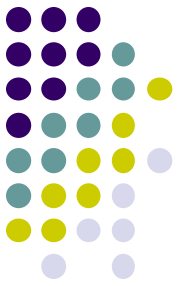
Relative Unitary Costs in Argentina, two periods



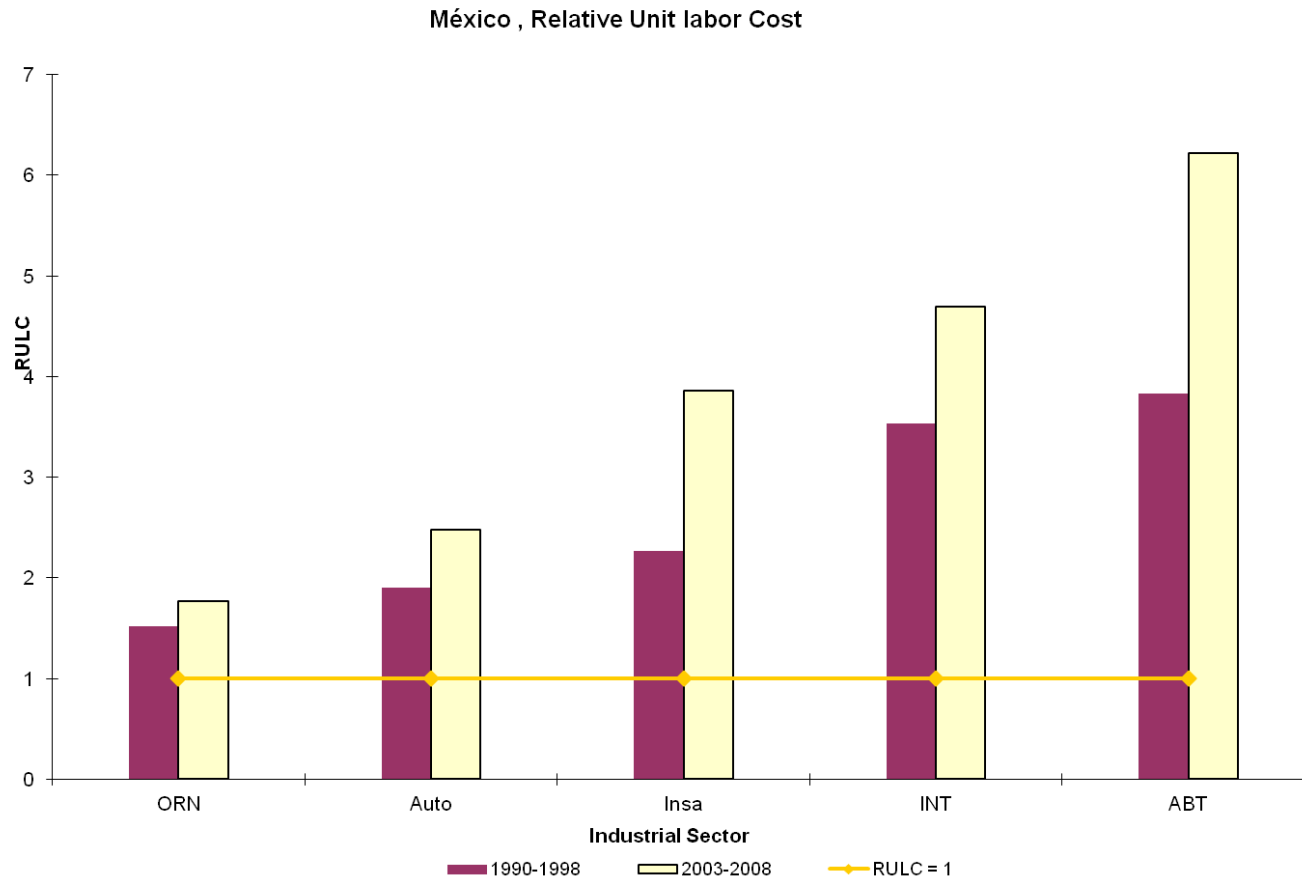
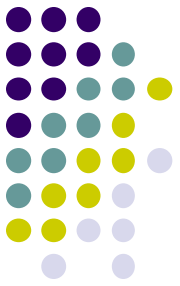
Argentina, Relative Unitary Labor Cost



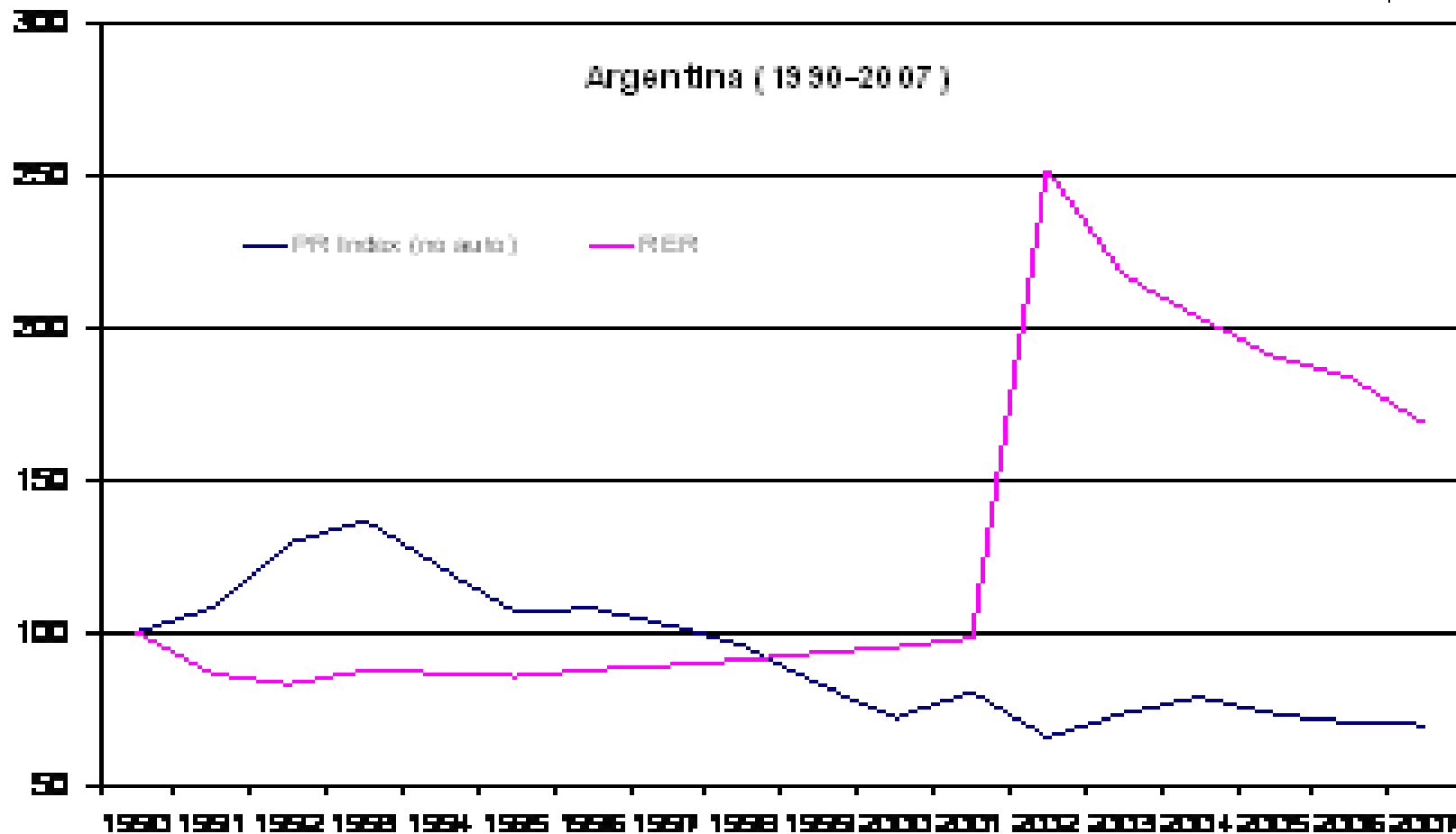
Relative Unitary Costs in Brazil, two periods



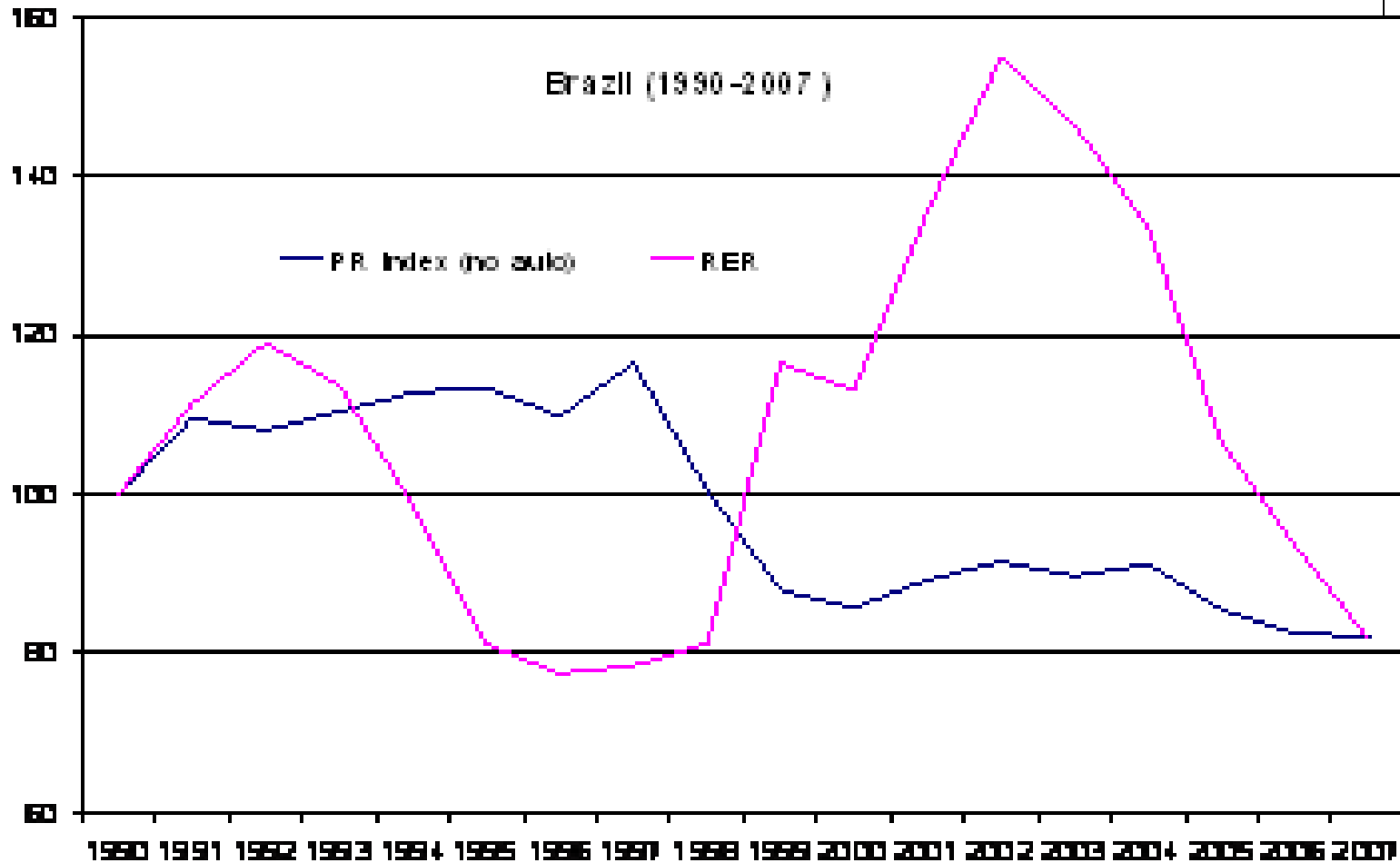
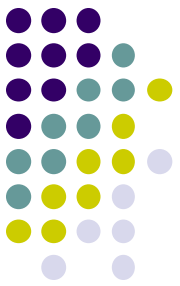
Relative Unitary Costs in Mexico, two periods



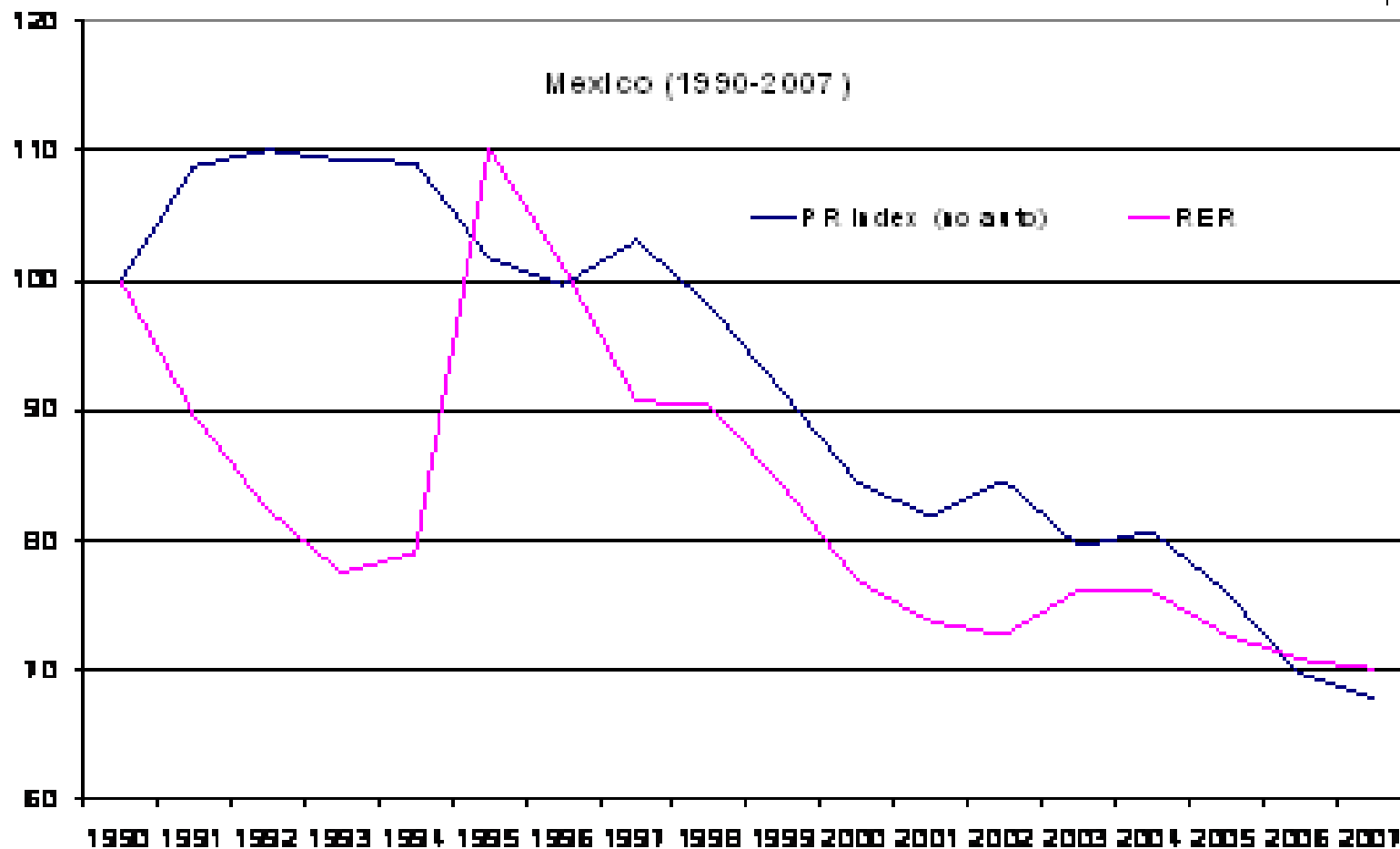
RER and the evolution of the IRP: Argentina



RER and the evolution of the IRP: Brazil



RER and the evolution of the IRP: Mexico





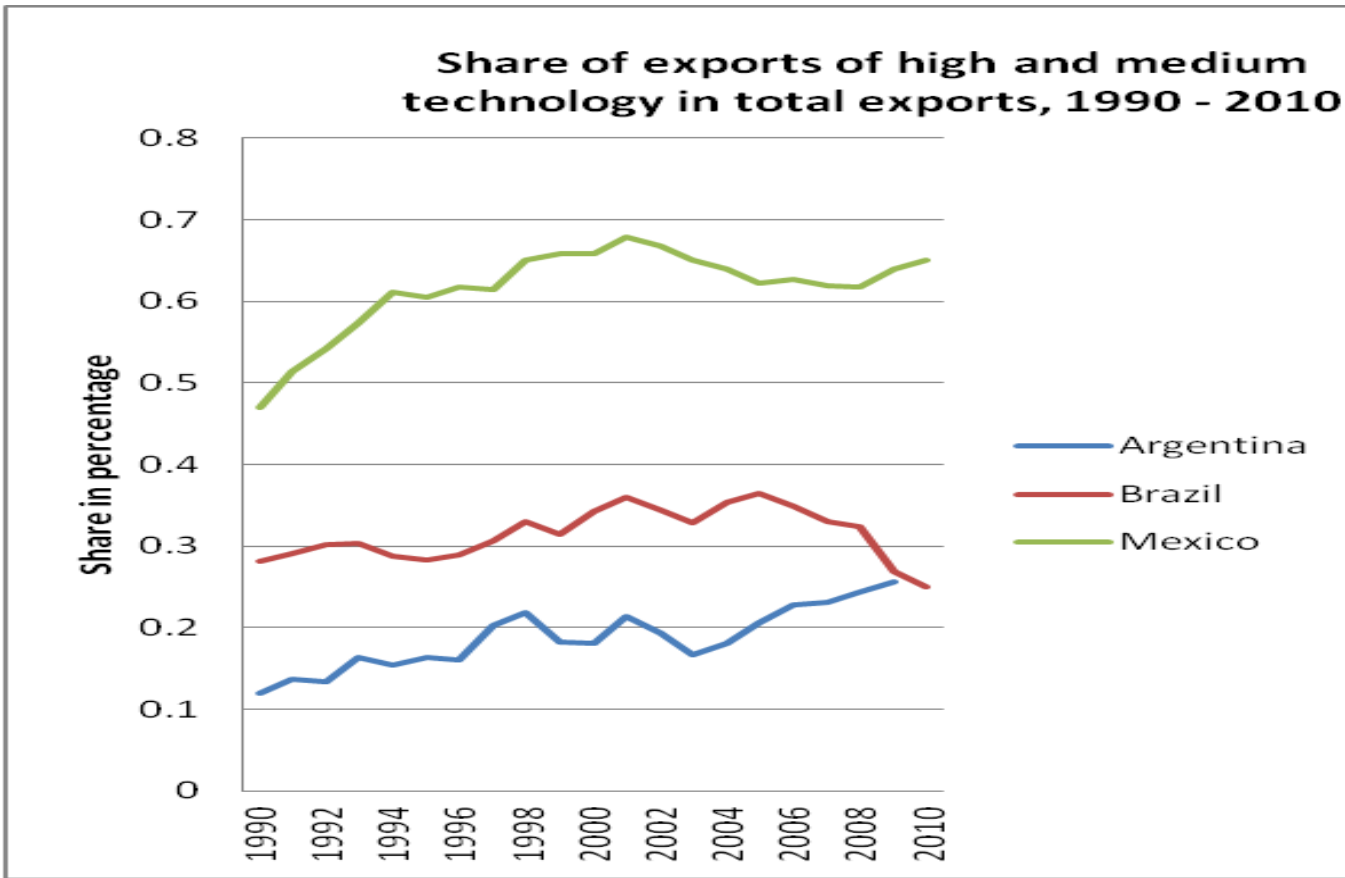
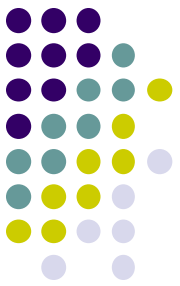
RER and changes in the IPR

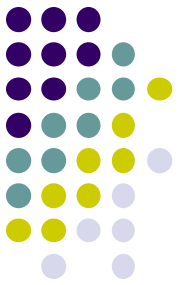
Table 2. RER and Changes in the Index of Relative participation

Annual rate of change in IPR (in %) / RER	RER lower than the average	RER higher than the average
Positive		Argentina, 2003-2008 (0.28%) Brazil 1999-2002 (1.6%)
Negative	Argentina, 1991-98 (-1.6%) Brazil, 1991-98 (-0.28%) Brazil, 2003-2008 (-2.45%) Mexico, 2003-2008 (-4.47%)	México, 1990-98 (-0,85%)

Source: Padiwin: percentages between brackets are cumulative annual rates of growth of the IRP

RER and the export structure





RER and industrial dynamics

A fall in the RER:

- triggers investments in rationalization (rather than in expansion of capacity)
- favors a higher use of imported inputs
- leads to a less dense production matrix
- induces a positive jump in productivity in some sectors (once and for all), related to severe losses in employment

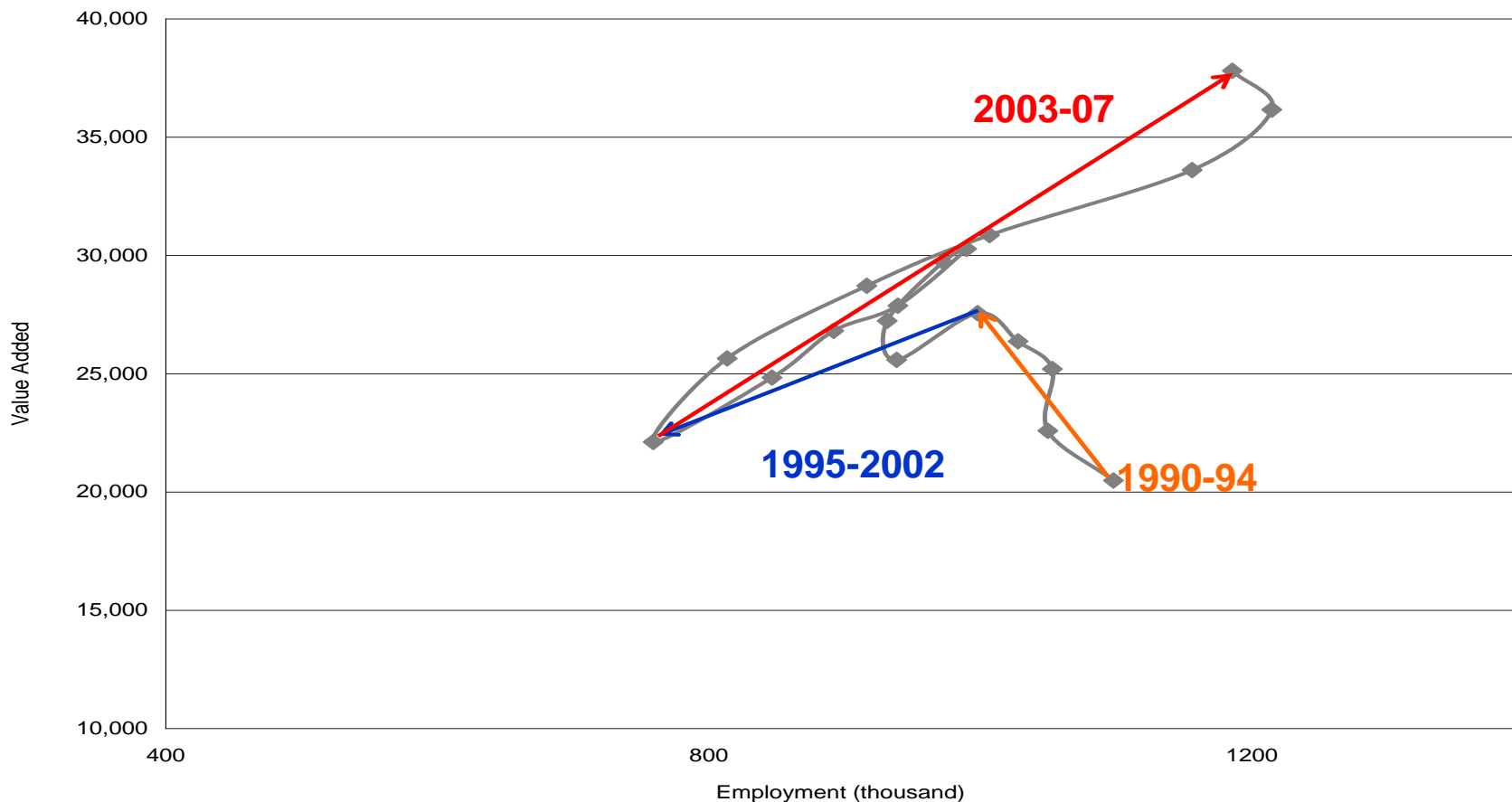
Inversely, with a high RER:

- effective demand, GDP, productivity and employment tend to move in the same direction

Value added and employment in the industry: Argentina, 1990-2007



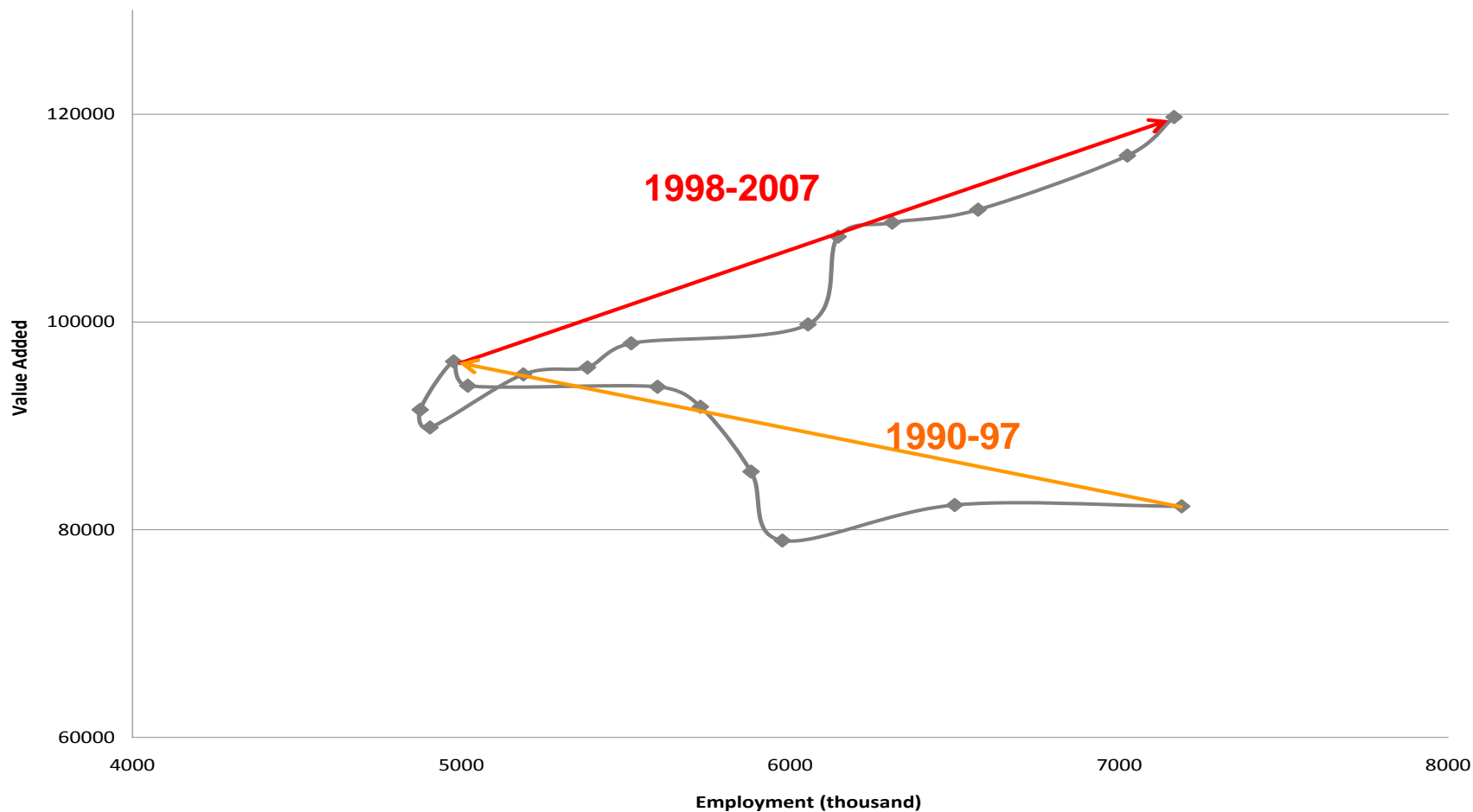
Argentina: The Dynamics of Productivity and Effective Demand



Value added and employment in the industry: Brazil, 1990-2007

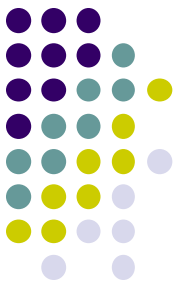


Brazil: The Dynamics of Productivity and Effective Demand

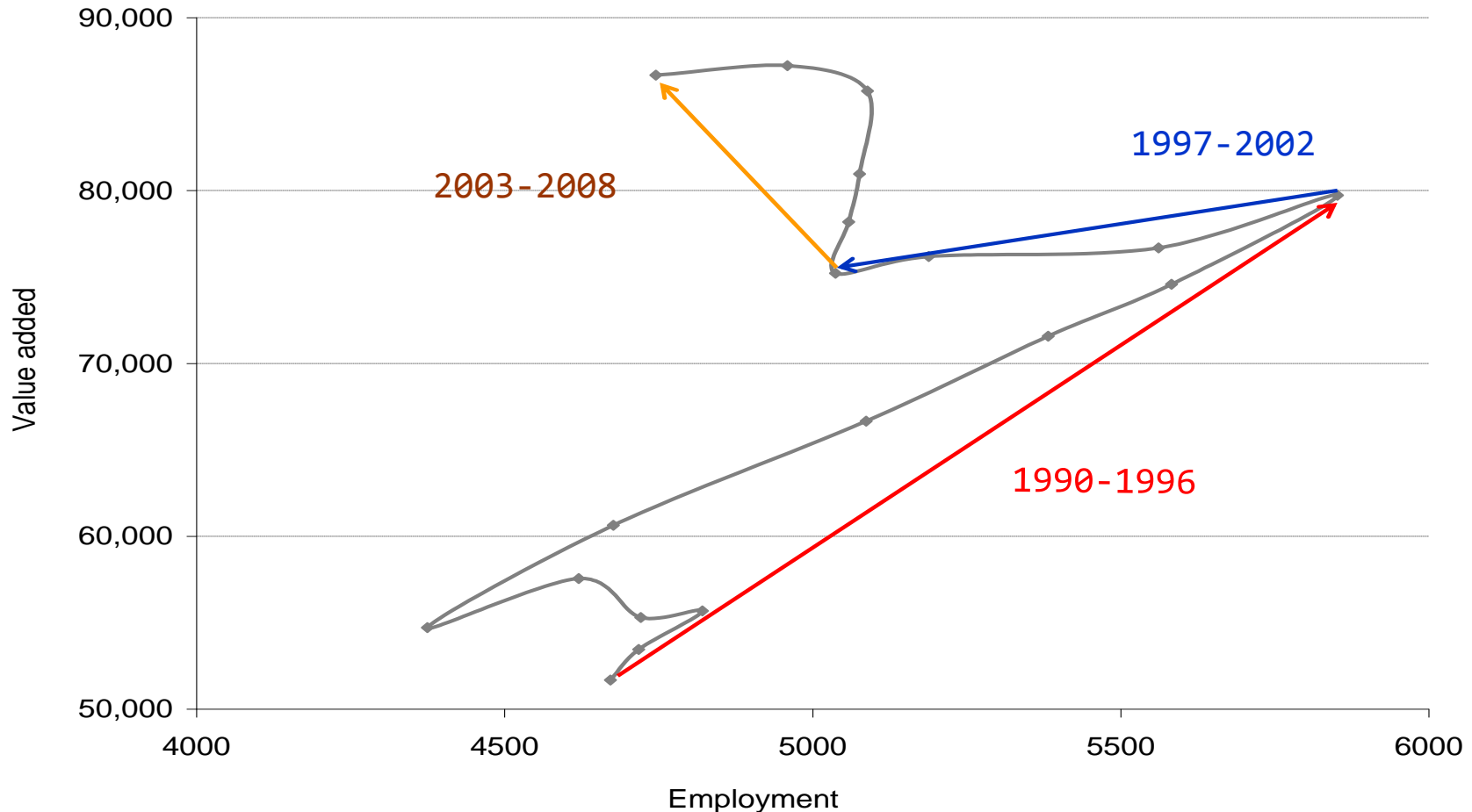


Source: Authors'elaboration on PADI database.

Value added and employment in the industry: Mexico, 1990-2008



Mexico: The Dynamics of Productivity and Effective Demand

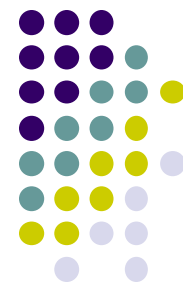


4) RER volatility and the international economy

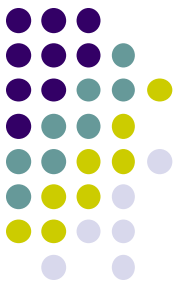


- Understanding the relationship between RER, diversification and growth requires looking at how international cycles of growth and financial liquidity are related to policy responses in different countries
- Interactions between international growth, financial flows and policy responses

RER and cycles in the international economy



- During the **boom**, the stimulus to **growth** is not fully captured in the domestic economy due to a less integrated productive structure
- **Capital flows** tend to be pro-cyclical and at the beginning contribute to **appreciate** the currency
- If the government sets interest rates giving priority to curbing inflation, then this attracts still more capital and reinforces the previous effect
- External crisis sets in and prompts **devaluation and recession**



From appreciation to external crisis

- The **appreciation of the RER** compromises the **competitiveness** of certain industrial sectors
- The low RER encourages **consumption** and triggers external disequilibria
- **Investments** suffer from uncertain expectations on the behavior of the current account and of the RER

➤ **Volatility**

- over the cycle, we have **slow growth** and more macro **volatility** (in macro-prices, including the RER, and output)
- The recovery period will vary in relation with the international conditions (Is the international economy still growing? Is there a sudden stop of external financing?)

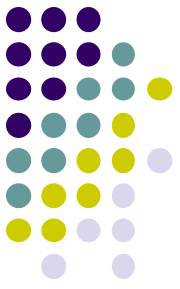
Matrix: a global puzzle

high *high* Growth in international economy *low*

<p style="text-align: center;">Scenario A</p> <ul style="list-style-type: none">• The international economy grows at high levels but international capital flows are small.• The international context is then more favorable to keep a competitive RER.• This in turn contributes to sustain growth and the upgrading of export structure. <p><i>Asian Tigers in the 1960s; Chile in part of the 1990s; Argentina in 2002-2008; China after 1990.</i></p>	<p style="text-align: center;">Scenario B</p> <ul style="list-style-type: none">• The international economy slows down.• The high RER contributes to cushion the negative impact of recession. <p><i>Asian Tigers in the 1970s; Latin America in the 1980s.</i></p>
<p style="text-align: center;">Scenario C</p> <ul style="list-style-type: none">• International capital flows and changes in the terms of trade tend to appreciate domestic currencies.• Symptoms of Dutch Disease are more visible. <p><i>Most Latin-American countries after 2005.</i></p>	<p style="text-align: center;">Scenario D</p> <ul style="list-style-type: none">• International capital flows appreciate domestic currencies even in a context of global recession.• RER appreciates without the beneficial impulses coming from international growth. <p><i>Argentina, Brazil, Chile and Uruguay in the 1970s.</i></p>

Level of exchange rate (RER)

low



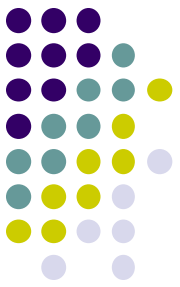
Concluding remarks /1

Short run x long run

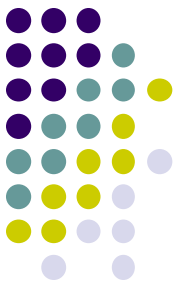
- Policies that are aimed at short run objectives – like stabilization policies – may have **long run effects**
- RER is one of the key links between short run and long run

Concluding remarks /2

why the RER matters



- The RER has tended to appreciate and show high volatility in LA because of cycles of easy external financing, shocks in the terms of trade and macro-policies that use the exchange rate as a nominal anchor for prices
- RER appreciation and volatility reduce long run growth by:
 - fostering regressive structural change
 - destroying capabilities
 - heightening external disequilibria and instability



Concluding remarks /3

Macro and industrial policies

In the long run, Keynes and Schumpeter are alive:

- Without a competitive RER the country will not be able to enter the international markets nor achieve increasing returns
- Without industrial and technological policies, learning and the building of technological capabilities will advance at a rather slow pace (affecting other objectives, particularly income distribution)

Concluding remarks /4

The “other” supply side



The micro-macro interactions should be addressed on the basis of an evolutionary micro:

- The focus should lie on learning and Schumpeterian competition
- This implies building institutions, devising consistent industrial and the coordination of public and private actors

Both an **industrial policy** and a **competitive RER** are required for moving out of **lock-in** and **slow-growth traps**