



Second Monetary Policy Research Workshop in Latin America and the Caribbean: “Monetary Policy, Uncertainty and the Business Cycle”

Lima, November 2006



“Monetary Policy and regime change under high volatility”

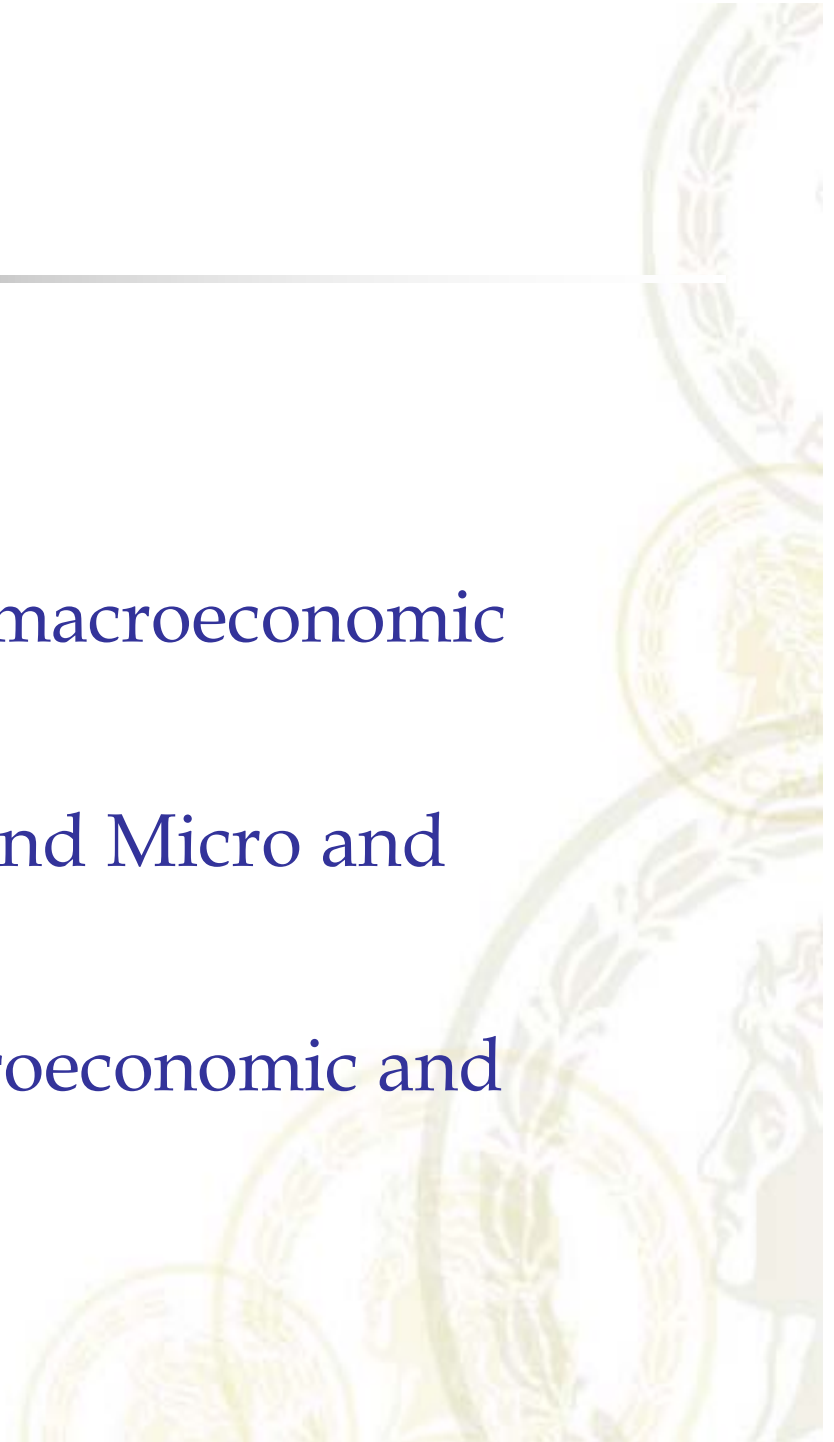
Sebastián Katz

Central Bank of Argentina

Lima, November 2006

Agenda

1. Excess volatility and macroeconomic instability
2. Two Types of crises and Micro and Macro interactions
3. Implications for Macroeconomic and Monetary policy

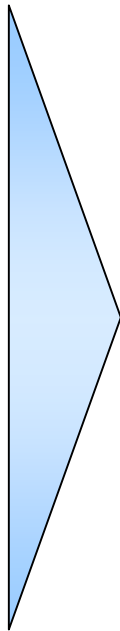


1. Excess volatility and macroeconomic instability

- In contrast with more developed economies, the region's episodes of macroeconomic disequilibria tend to be much more profound and to present a relatively higher frequency;
- Frequently, the disruptive consequences on the macroeconomic functioning are deeper
- As a consequence the economy tend to operate outside the "corridor"

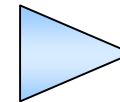
1. Functioning outside the “corridor”

Exogenous
shock



Advanced economies

- “Full coordination path”

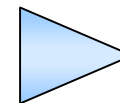


Shock absorption and the cycle tend to be inside the corridor

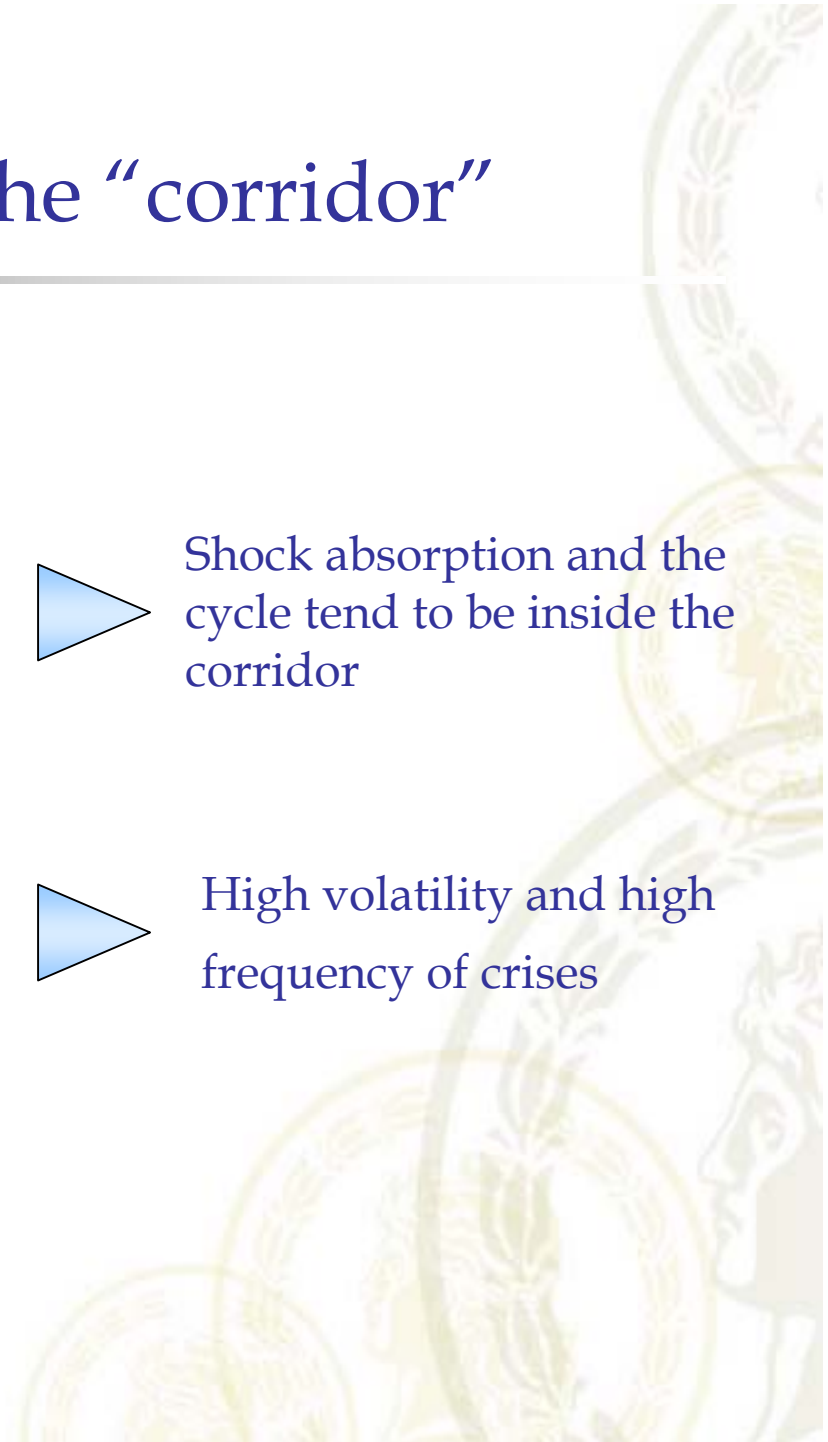
Latin American
developing countries

- Lack of “absorption mechanisms” and/or

big shocks

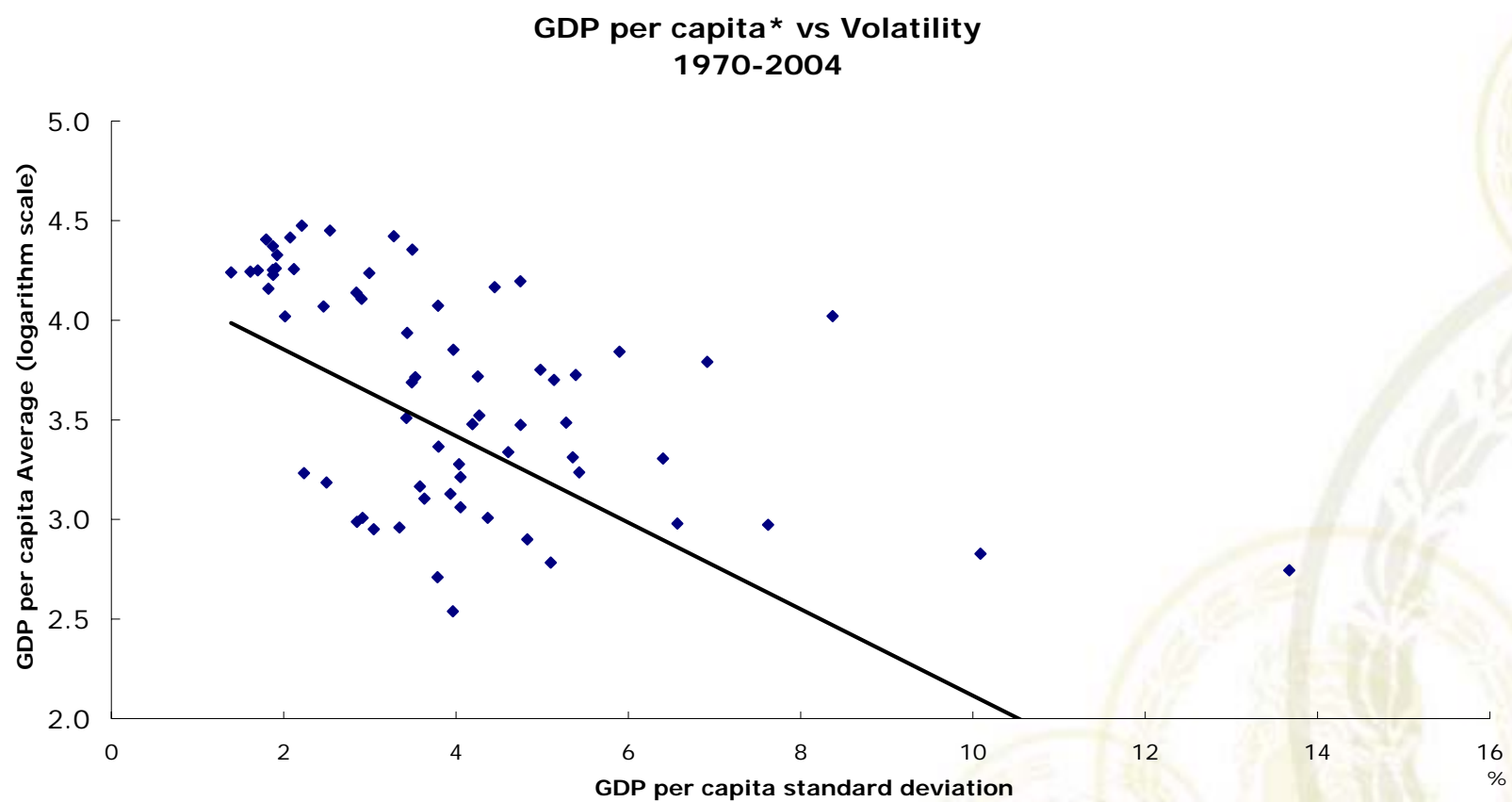


High volatility and high frequency of crises



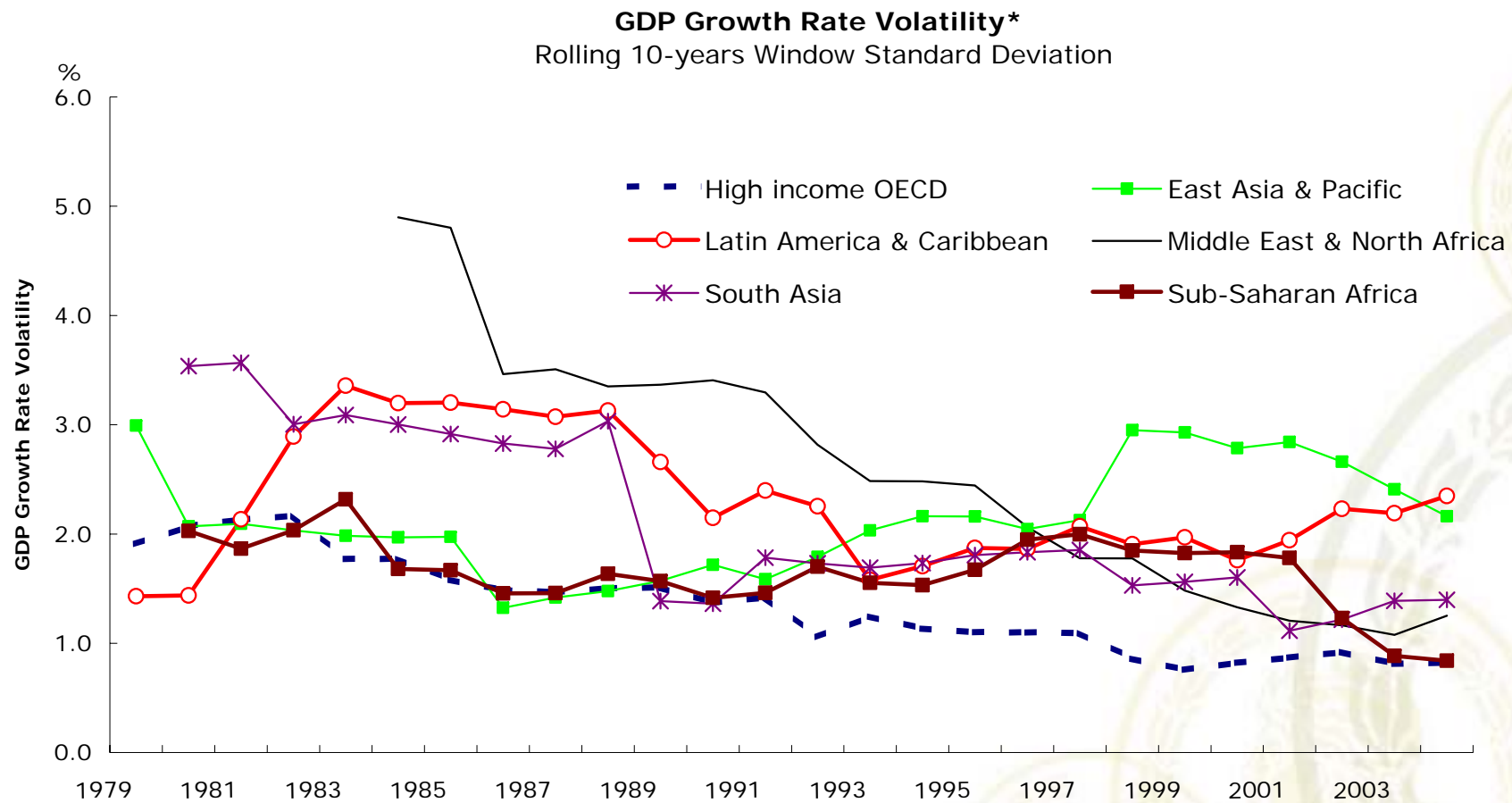
1. Less developed economies are more volatile

- Negative association between per capita GDP and GDP volatility



* GDP at 2000 US\$ prices

1. Latin America has been highly volatile for the last 30 years



*Volatility measured as standard deviation

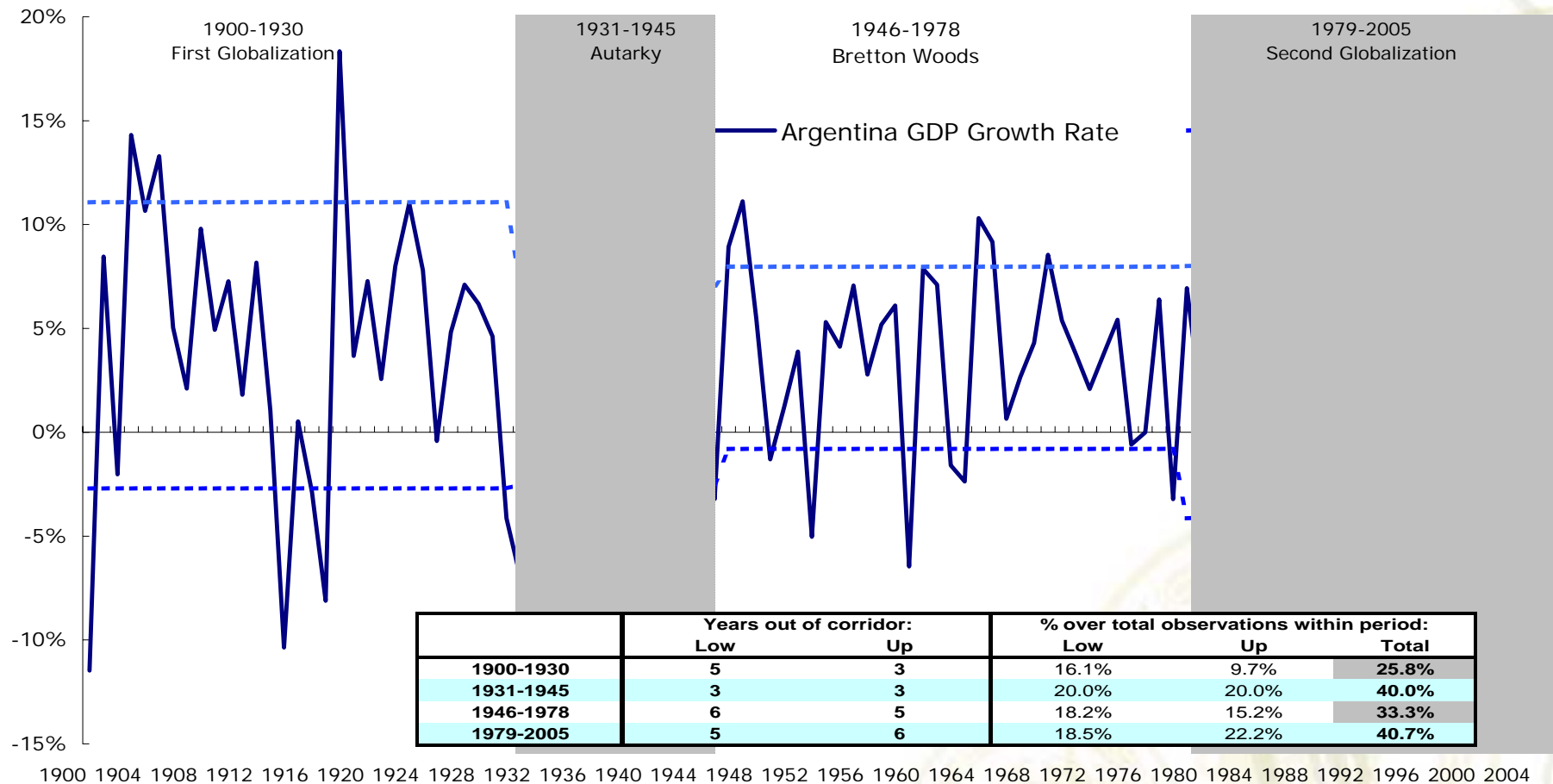
1. Argentina: key long run indicators (1900-2005)

- Both globalization periods are the most volatile ones but different GDP growth outcomes

International Monetary System	Length (years)	Annual change		Average degree of openness (%)	Capital Account/GDP (estimate %)	Volatility	
		GDP (%)	Population (%)			Standard Deviation	Variation Coefficient
First Globalization	30	4.7	2.7	20.5	12.0	6.4	1.4
Autarky	16	2.3	1.8	12.9	3.0	4.8	2.1
Bretton Woods	33	3.6	2.1	10.7	1.2	4.4	1.2
Second Globalization	26	2.0	1.3	8.0	2.5	5.8	3.0
Overall period	100	3.3	2.1	13.2	-	5.5	1.7

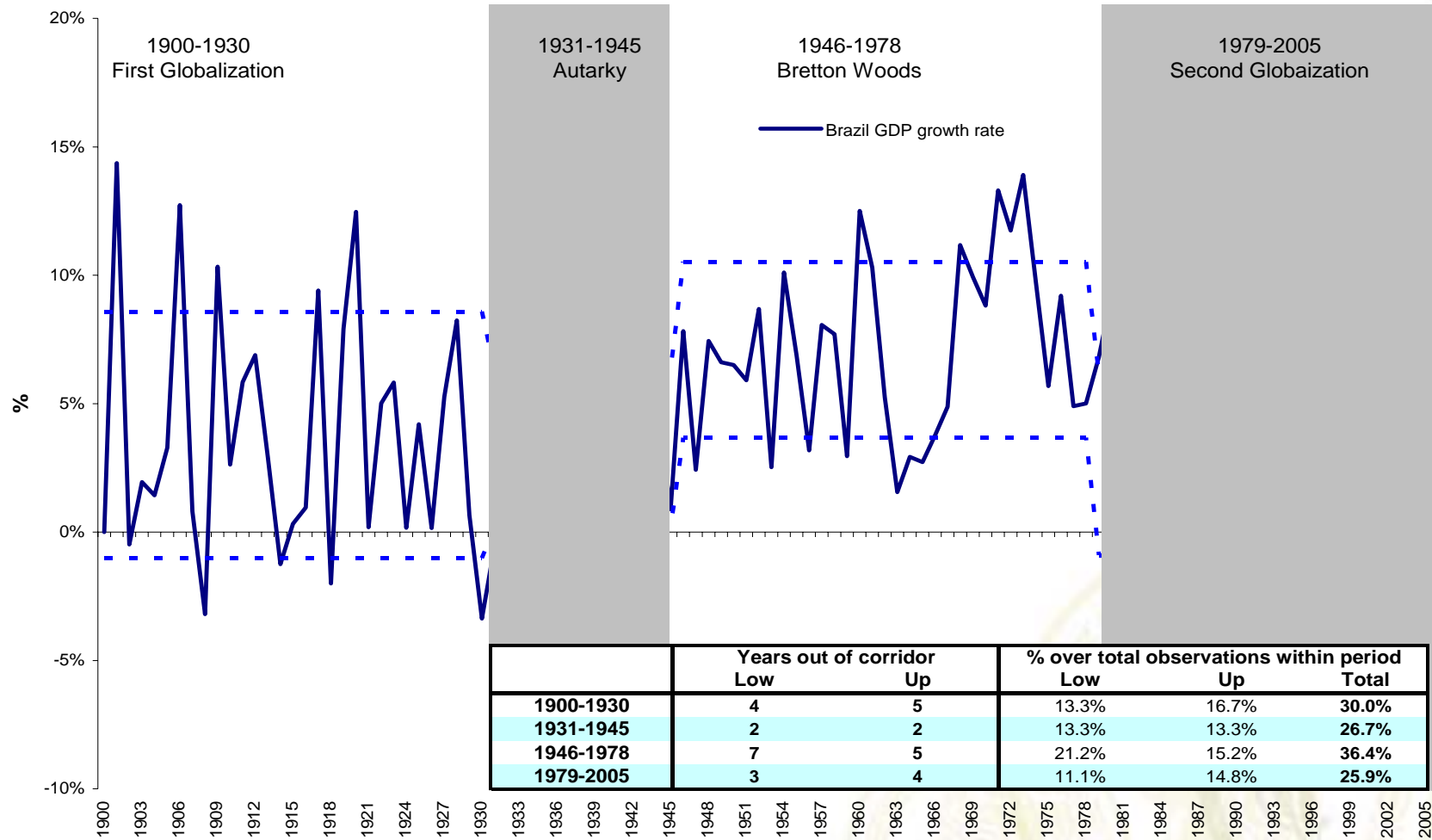
1. During the Second globalization, we find the highest numbers of observations outside the corridor

Argentina's Corridor of Real GDP Growth Rate



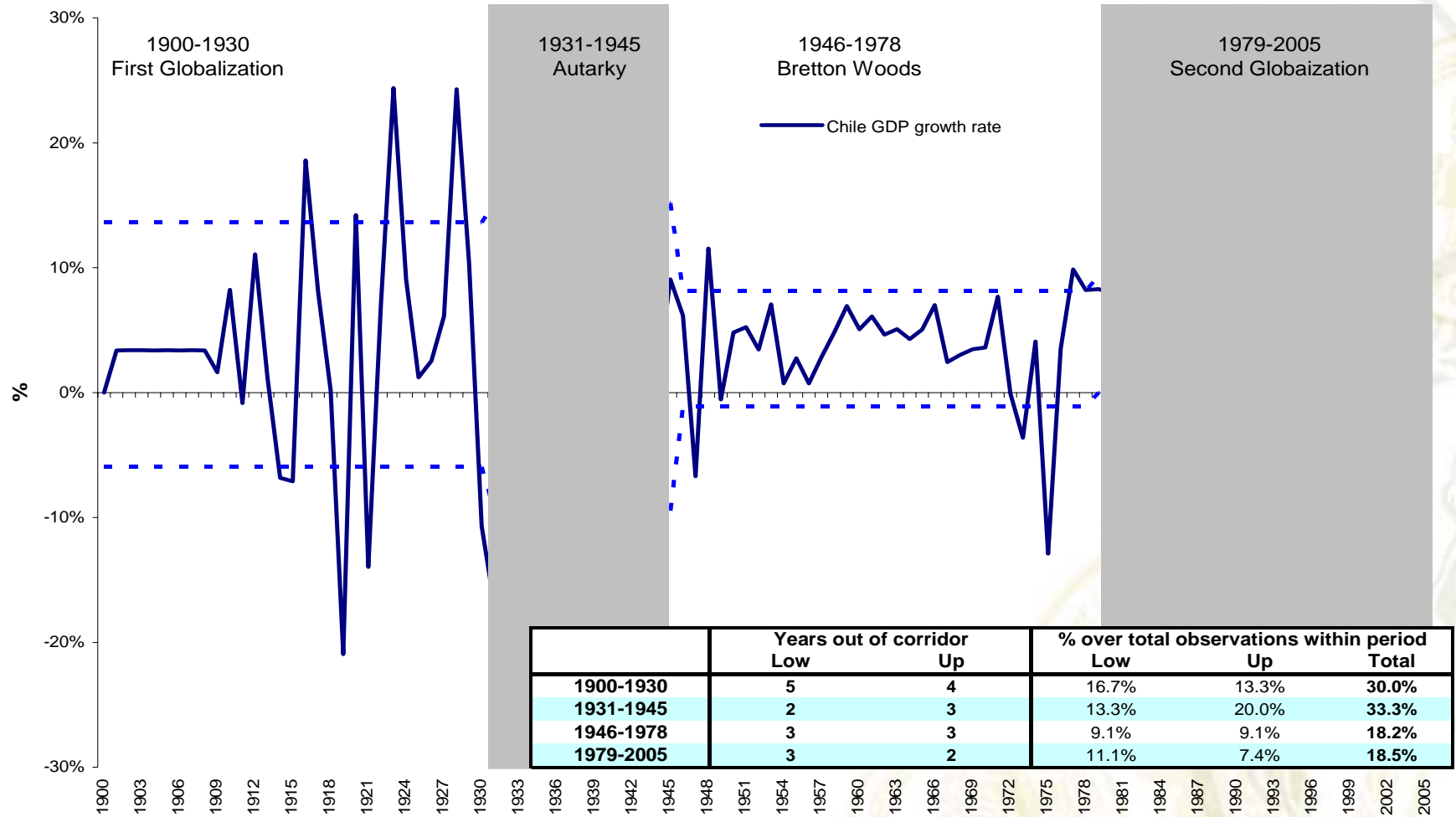
BRAZIL

Brazil: corridor of Real GDP Growth Rates

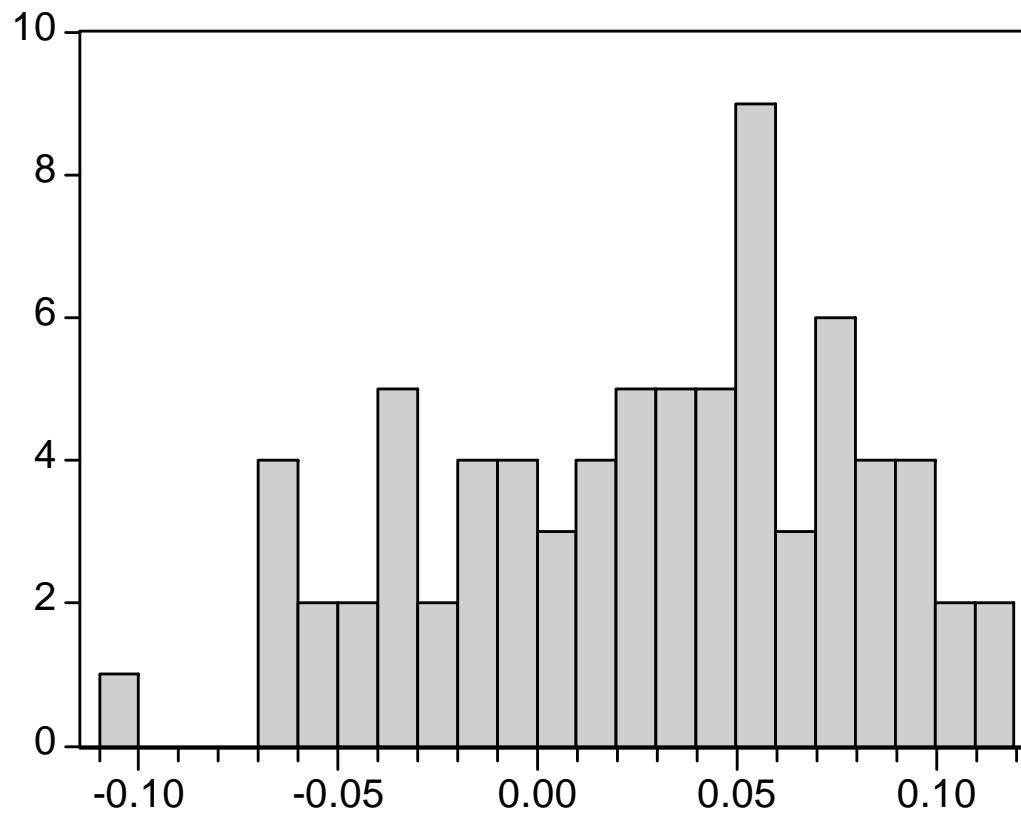


CHILE

Chile: corridor of Real GDP Growth Rates



Argentina:

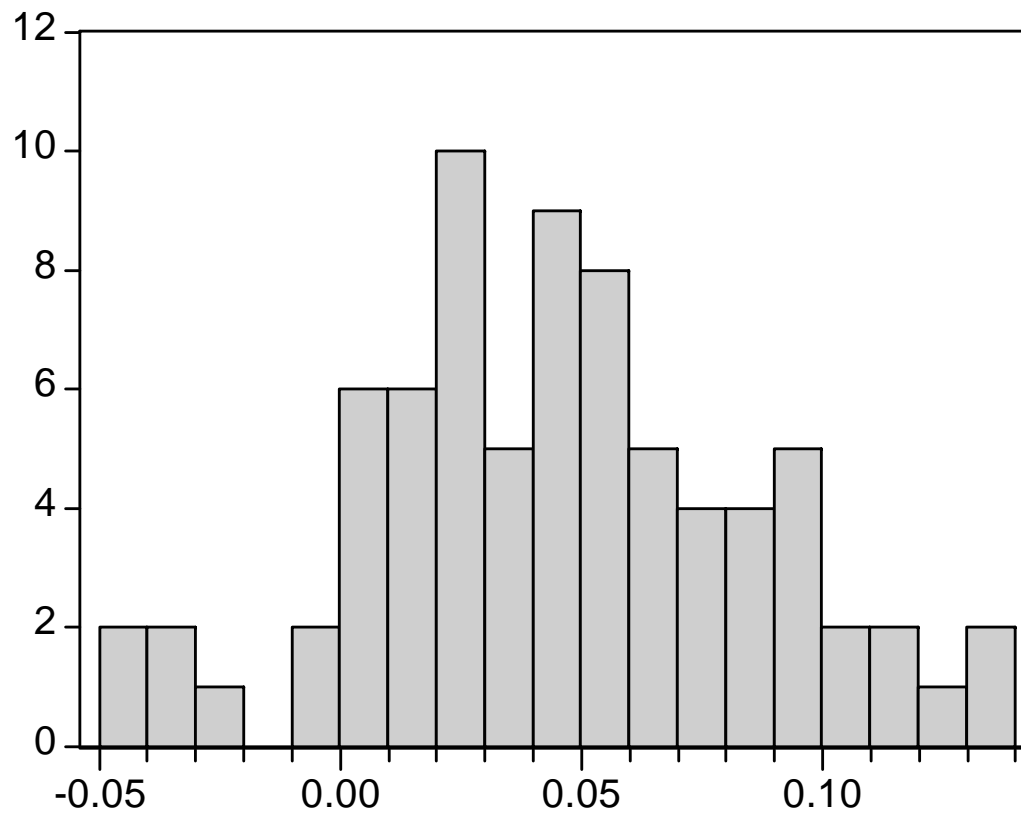


Series: ARG_GDPRATE
Sample 1930 2005
Observations 76

Mean	0.026334
Median	0.037950
Maximum	0.112600
Minimum	-0.108900
Std. Dev.	0.051423
Skewness	-0.394035
Kurtosis	2.371028

Jarque-Bera	3.219420
Probability	0.199946

Brazil:

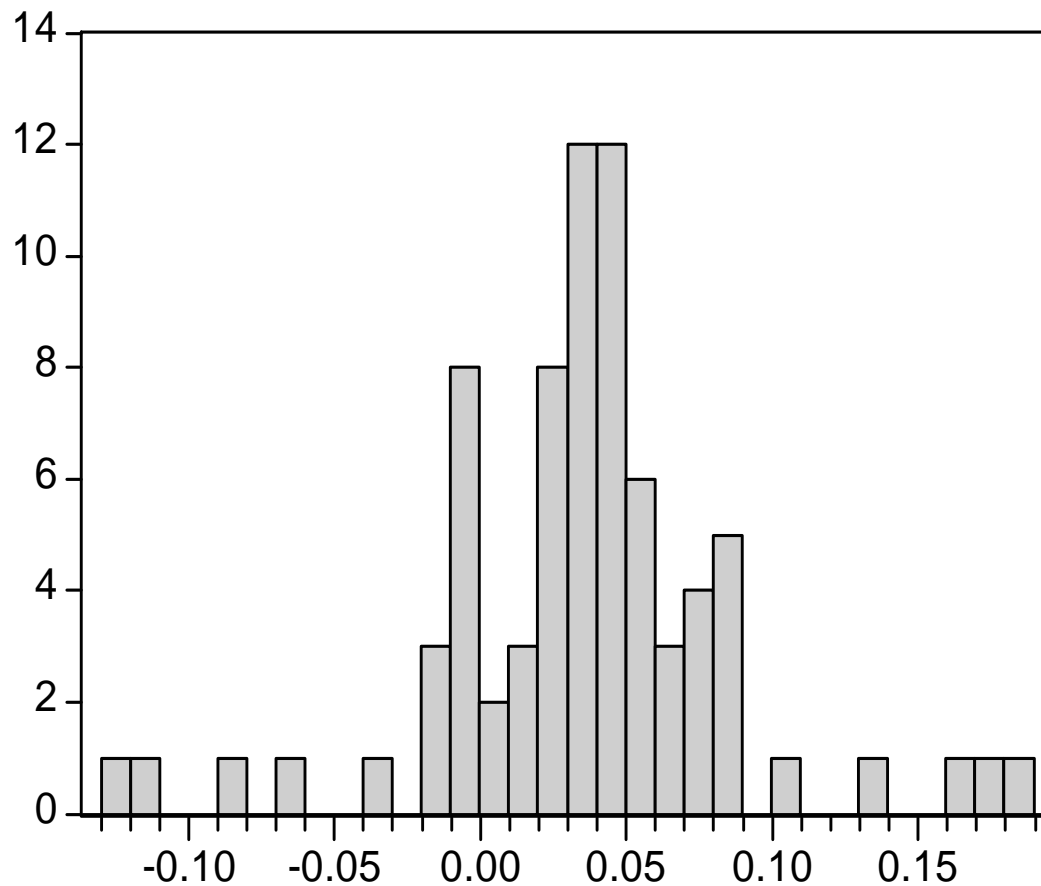


Series: BRA_GDPRATE
Sample 1930 2005
Observations 76

Mean	0.046087
Median	0.047350
Maximum	0.139000
Minimum	-0.044000
Std. Dev.	0.040509
Skewness	0.015693
Kurtosis	2.782225

Jarque-Bera	0.153301
Probability	0.926213

USA

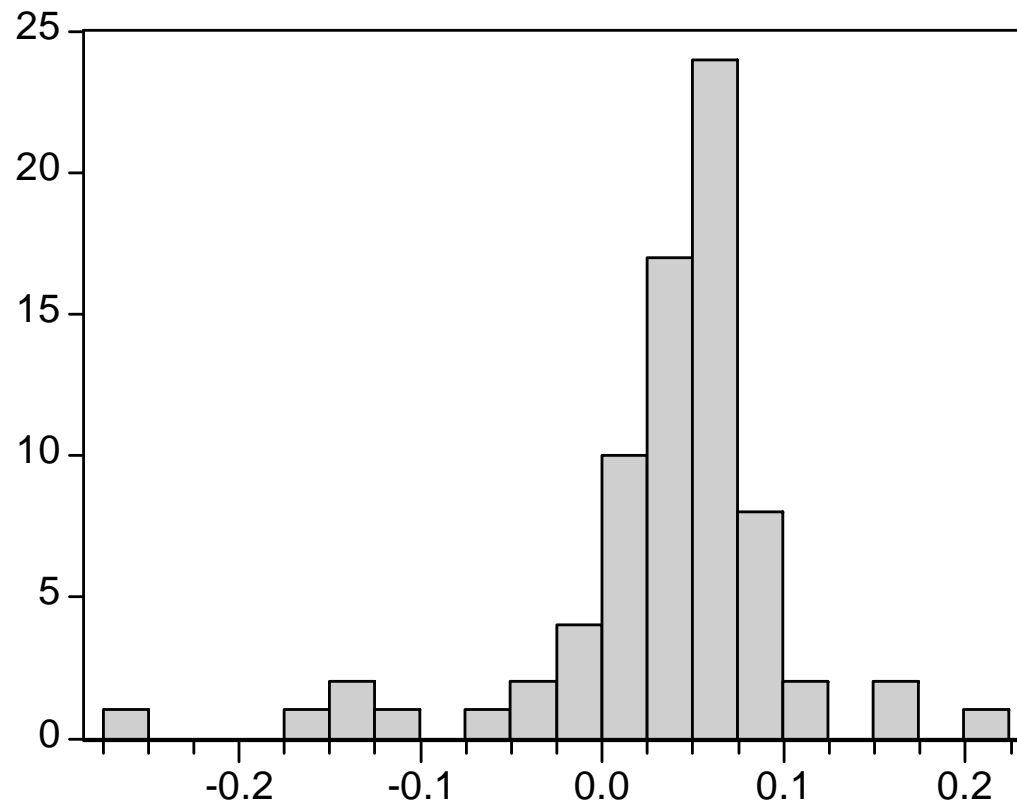


Series: USA_GDPRATE
Sample 1930 2005
Observations 76

Mean	0.035363
Median	0.036800
Maximum	0.185200
Minimum	-0.130000
Std. Dev.	0.051404
Skewness	-0.151301
Kurtosis	5.516033

Jarque-Bera	20.33631
Probability	0.000038

CHILE



Series: CHI_GDPRATE
Sample 1930 2005
Observations 76

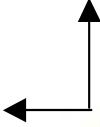
Mean	0.036118
Median	0.048150
Maximum	0.210700
Minimum	-0.268600
Std. Dev.	0.069506
Skewness	-1.600808
Kurtosis	8.364413

Jarque-Bera	123.5863
Probability	0.000000

1. Volatility is not necessary undesirable

- But policy makers should care about excessive macroeconomic volatility and high propensity to crises episodes
- Macroeconomic volatility

Micro-
economic
volatility

	Low	High
Low	Equilibrium at the bottom of the well	Poor performance economies Projects with low profitability Low sectorial diversification and/or inappropriate mechanisms of risk management
High	Dynamic economies Lots of profitable projects High sectorial diversification and/or appropriated mechanisms of risk management	

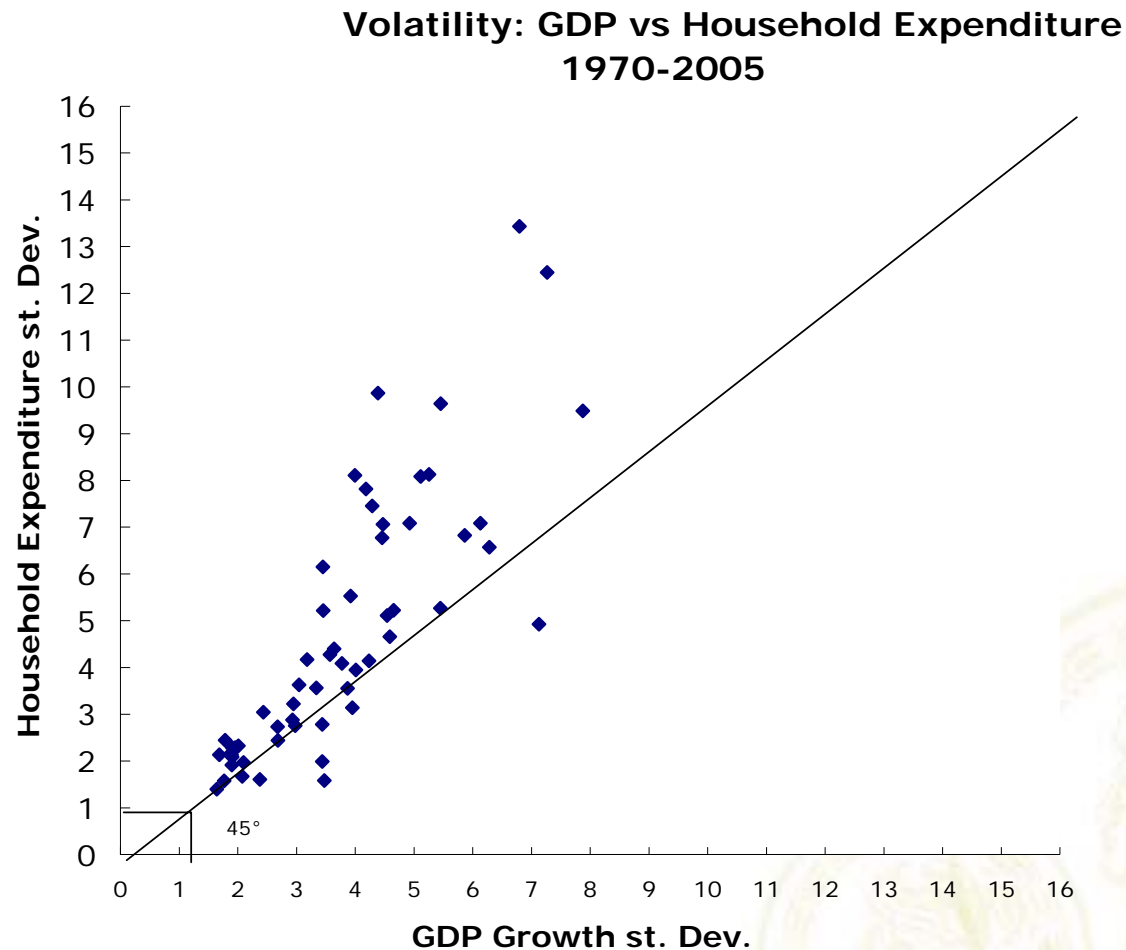
1. Virtuous vs. bad volatility: the case of Argentina and Korea

- Argentine GDP growth volatility is high, both measured by the standard deviation and the coefficient of variation

	Annual GDP growth		Standard Deviation				Variation Coefficient			
			1970-2004		1988-2004		1970-2004		1988-2004	
	1970-2004	1988-2004	GDP	Household consumption	GDP	Household consumption	GDP	Household consumption	GDP	Household consumption
Argentina	2.1%	2.2%	5.977	6.692	7.021	7.601	3.033	3.377	3.236	3.858
Brazil	7.7%	2.4%	4.476	6.674	2.594	5.609	1.078	1.406	1.302	2.080
Chile	8.7%	8.9%	5.406	9.522	3.422	4.517	1.242	2.652	0.573	0.870
Mexico	6.6%	3.7%	3.740	4.037	3.093	3.955	0.978	1.088	1.012	1.123
Australia	5.6%	4.3%	1.741	1.397	1.414	1.379	0.532	0.412	0.424	0.386
Canada	5.4%	3.2%	2.097	1.970	2.013	1.516	0.657	0.636	0.725	0.572
Korea, Rep.	25.8%	9.5%	3.641	4.488	4.039	6.010	0.511	0.718	0.642	1.083
Spain	5.2%	3.8%	2.010	2.305	1.507	1.734	0.642	0.759	0.484	0.575
United States	5.4%	3.8%	2.078	1.670	1.365	1.205	0.668	0.495	0.441	0.364

1. The evidence suggests that less development countries can not make consumption smoothing

- But in theory, consumption growth should be more correlated than GDP growth among countries



1. The empirical evidence rejects the consumption smoothing theory for volatile countries

	Correlation to the United States			
	1970-2004		1988-2004	
	Annual change (%)			
	GDP	Household consumption	GDP	Household consumption
Argentina	0.032	-0.218	0.056	-0.211
Brazil	0.147	0.002	0.253	-0.248
Chile	0.283	0.116	-0.009	-0.296
Mexico	0.089	-0.084	0.339	0.156
Australia	0.597	0.343	0.586	0.483
Canada	0.730	0.393	0.760	0.796
Korea, Rep.	0.435	-0.070	-0.177	-0.322
Spain	0.174	0.217	0.252	0.202
United States	1.000	1.000	1.000	1.000

2. Two Different type of crises

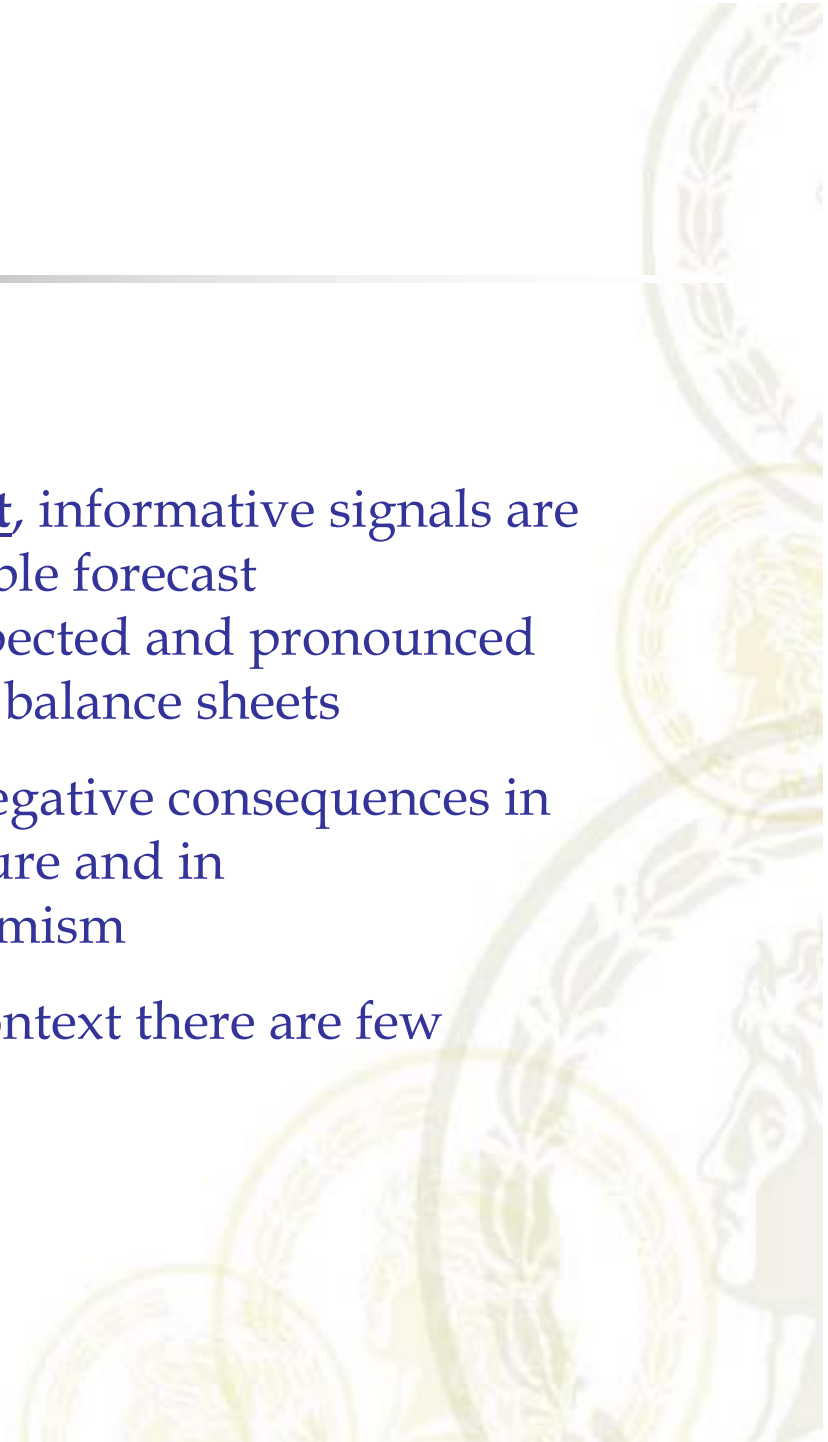
- The way and channels through which “excess” volatility affects economic performance are different:
 - 1- Nominal ex ante volatility and mistakes caused by uncertain signals (shortening of planning horizons);
 - 2- In a context of nominal stability it is conceivable to have a situation of inconsistent plans that led to a financial crisis (generalized broken promises)

2. Two Different type of crisis

	Occasional	Very Often
Nominal misperceptions	Stagflation Hyperinflationary episodes in Central Europe between WWs	High-inflation regimes Hyperinflationary episodes Argentina in the 80's
Financial crises	Stock-market crack The Great Depression	General broken contracts Property rights redefinition Wealth mass redistributions Repeated financial crises in Argentina

2. Two Different Type of Crises

- In a high a volatile inflation context, informative signals are confuse...the agents can make sizeable forecast mistakes...and there could be unexpected and pronounced variations in financial positions and balance sheets
- Preference for flexibility leads to negative consequences in the real domain, the financial structure and in institutions...lack of economic dynamism
- But for the same reason, in such a context there are few formal compromises to be broken...

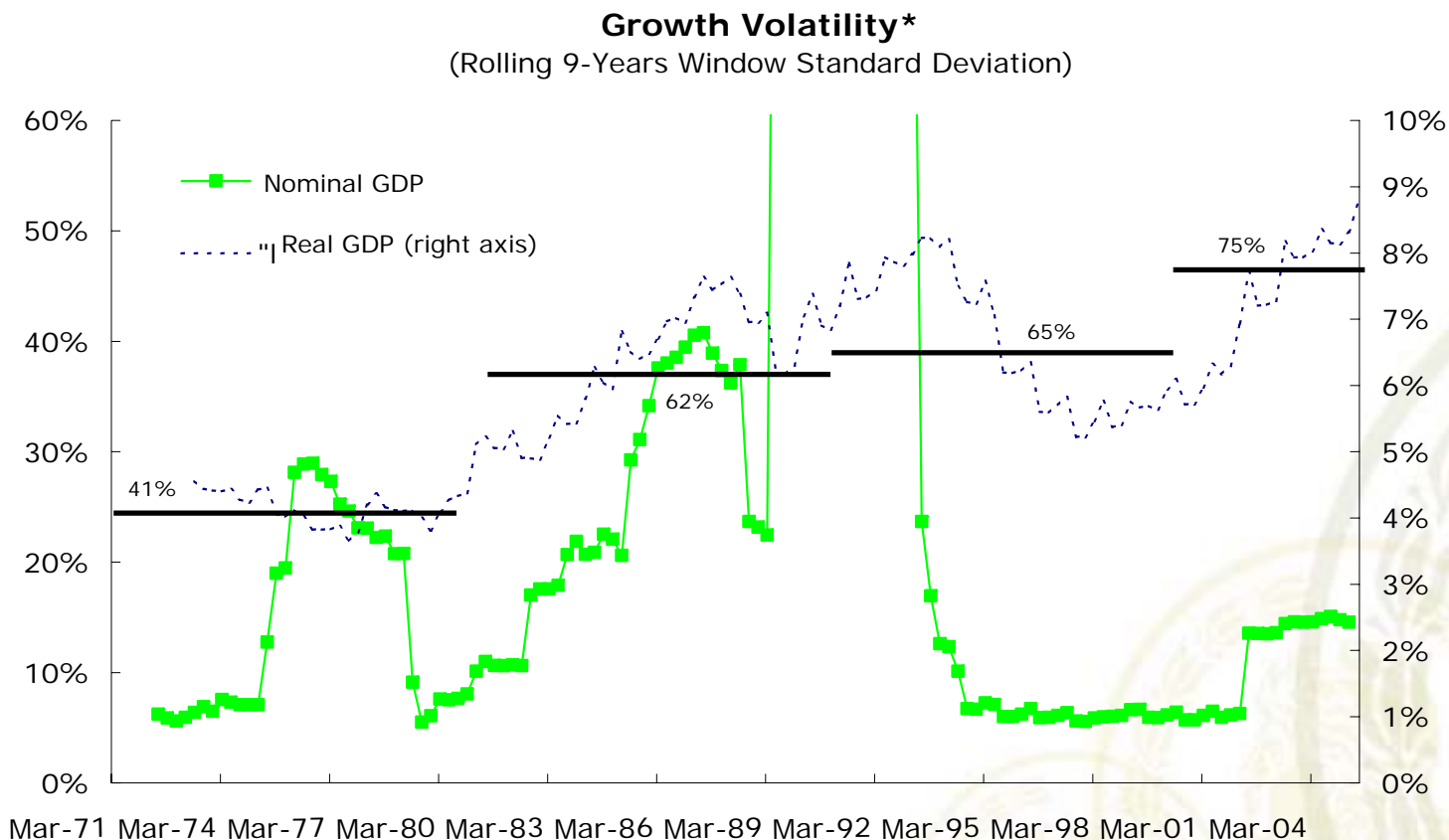


2. Two Different Type of Crises

- In a **stable nominal context**, when there is a widening of planning horizons, there is the possibility to have inconsistent plans and a financial crisis
- In every economy there are unfulfilled expectations...so the problem is when there are a sufficient important number of agents of macroeconomic entity that formulate unsustainable plans
- In that situation (frequently associated with growth transition paths or “novel” periods of structural change) there can be **massive defaults and generalized broken promises**
- Problems to identify well established trend of growth and to estimate permanent income flows (the Convertibility regime as an example... the dollar fulfilled an heterodox role stabilizing the structure of contracts)

2. Two Different Type of crisis: evidence from Argentina

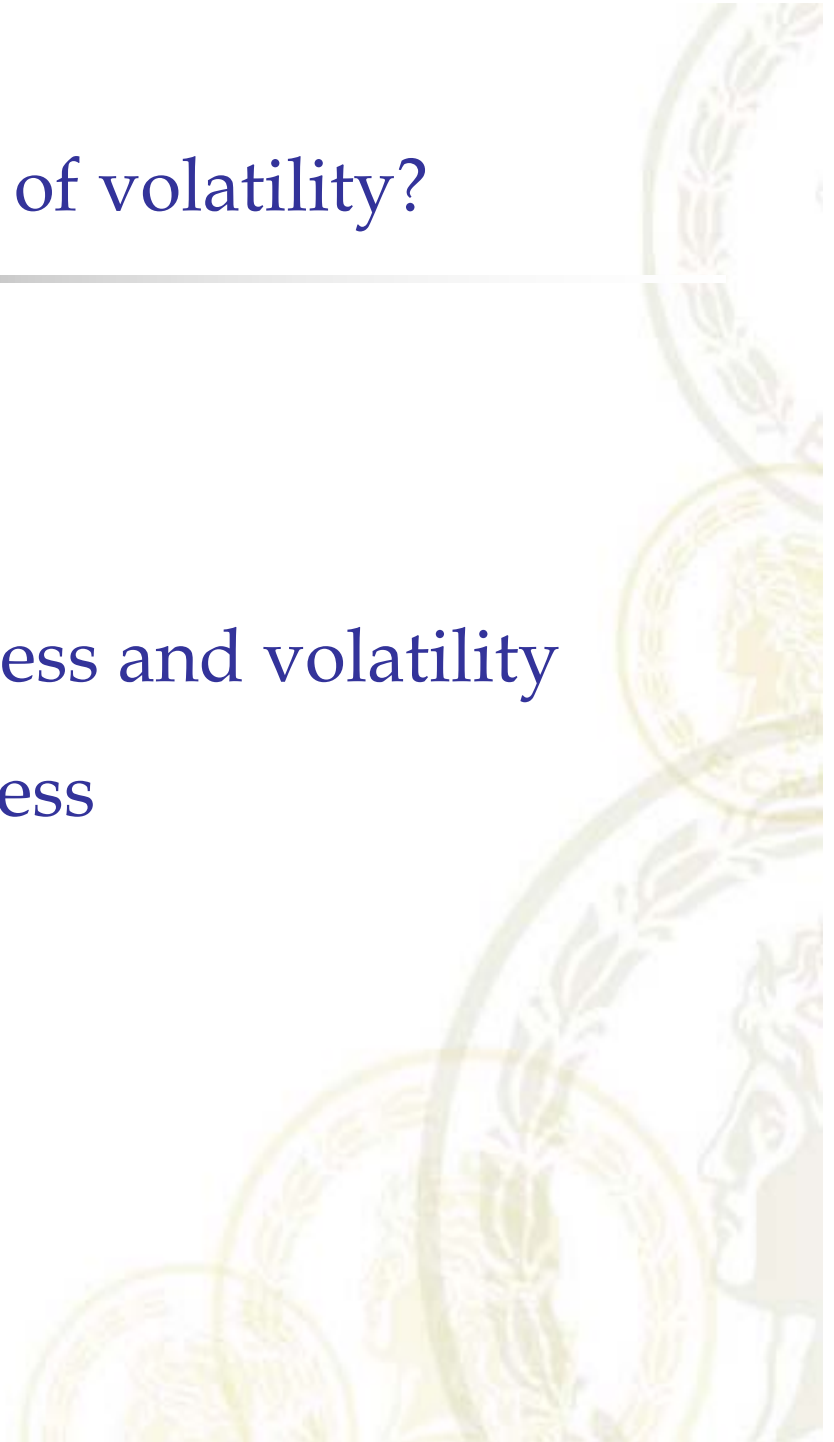
- Using inter-annual volatility measures, the nominal volatility has been reduced but not the real one



*Measured as the standard deviation of GDP growth .

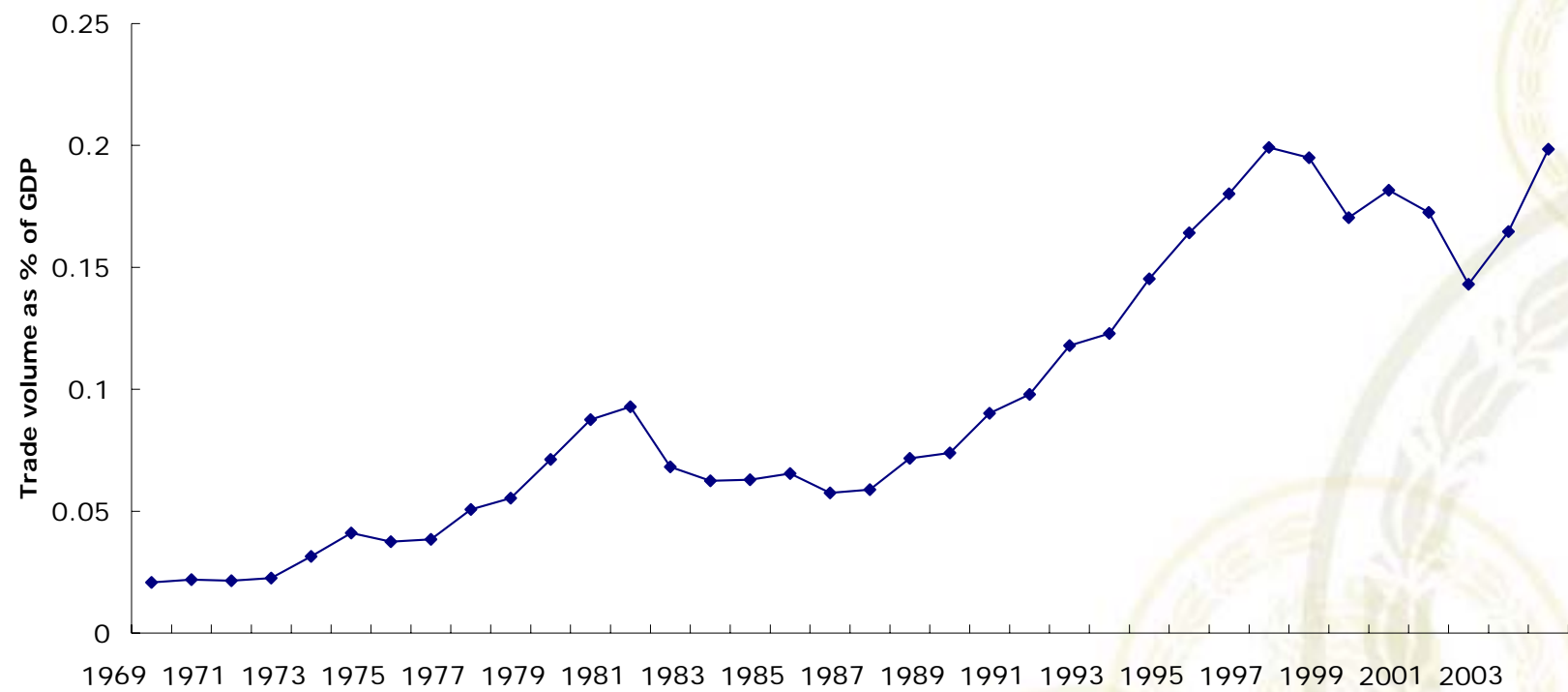
Absorbers or amplifiers of volatility?

1. External openness
2. Capital account openness and volatility
3. Financial sector deepness



Argentina:

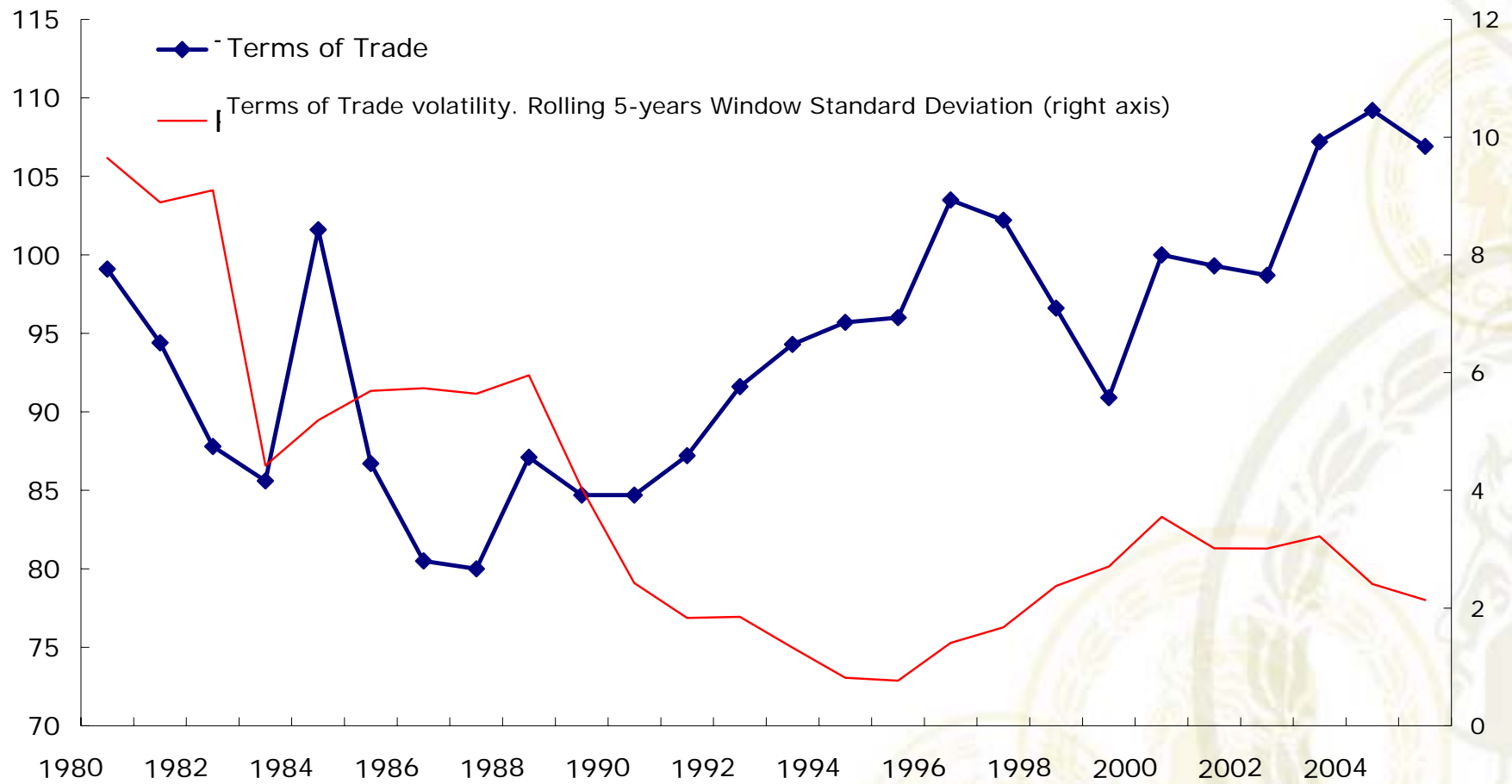
Trade Openness*



* Measured as the % of exports plus imports to GDP.

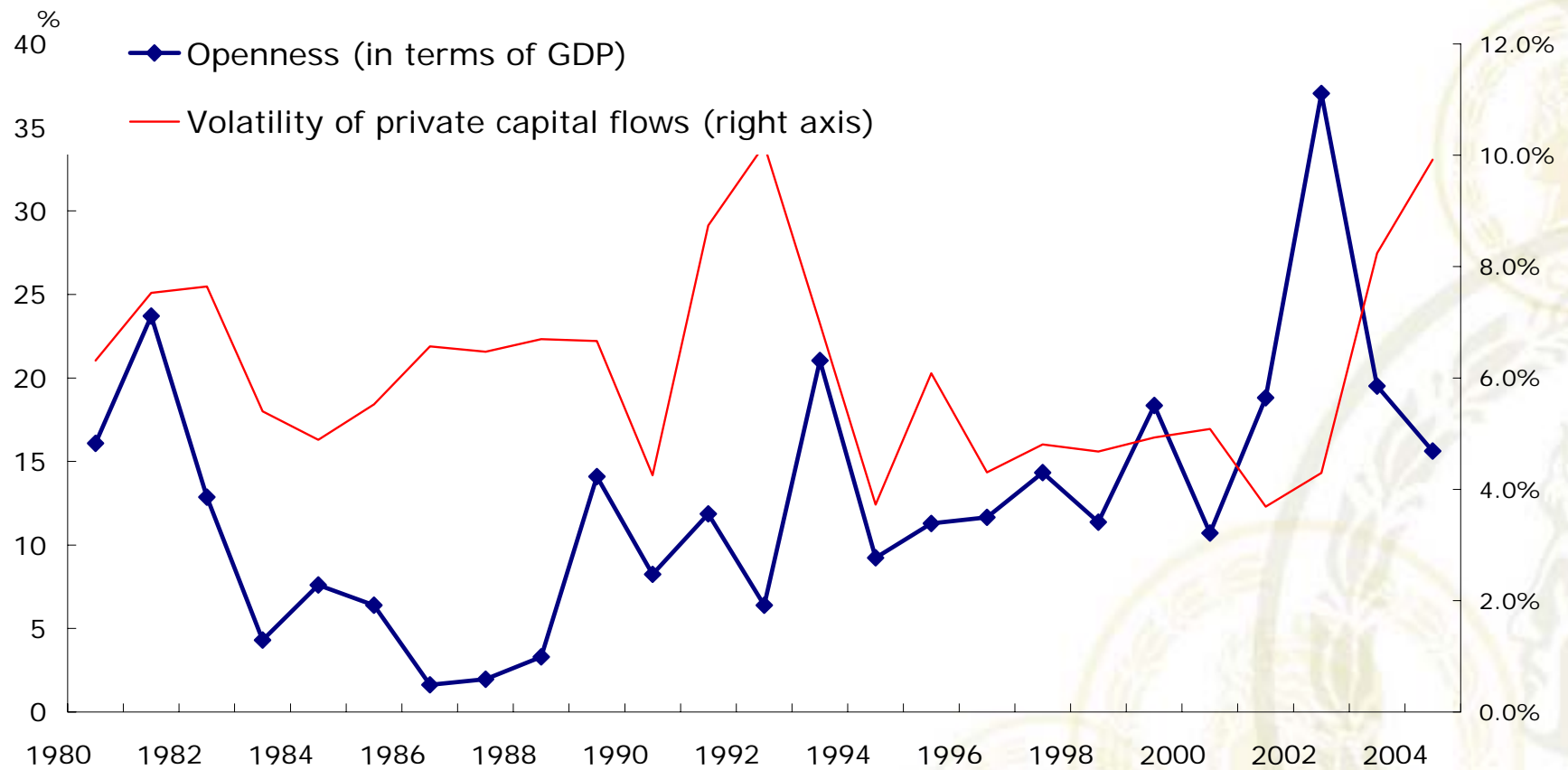
Argentina:

Terms of Trade vs ToT Volatility



Argentina:

Capital Account openness and volatility of private capital flows



2. Micro and macroeconomics interactions

- The idea that exists feedback between the micro and the macro contexts is not new...although the economic thinking has found normal splitting the job between macro and micro spheres
- In many cases this approach could be OK, but in other, the feedback mechanism is quite significant and you cannot assume that microeconomic structure and institutions remain unaltered after the episode of macro disequilibria. Ignoring this, we could made serious mistakes analysis about the economic functioning
- Typically the common feature were endogenous and adaptive changes at the micro level, that in turn led to new trends of macro instability (vicious circle)
- Responses: preference for flexibility and opportunistic behavior of adaptation to uncertain contexts (agents assign a high probability of regime change)

2. Micro and macroeconomics interactions

- The perception by the agents that they operate in a changing and uncertain context (e.g. in an environment where the operation rules of the regime are subject to frequent mutations), leads to important consequences...
- When the solvency of relevant macroeconomic agents is in doubt, agents formulate their plans taking into account that there is a high probability of regime change
- **That affects the formulation and priorities of macroeconomic policy...the usual division of labor between agencies of government must add a crucial demand of consistency and perception of sustainability**

3. Monetary policy in a transition context

- Only recently, literature has taken into account the consequences of uncertainty to monetary policy
- Potential sources of uncertainty (imperfect information about the state of the economy; uncertainty over the parameters of the “right” model; forecast inefficiency)
- All this important problems has been analyzed in the context of developed economies...but those facts appear very well suited for economies in a *knightian* uncertain context, where there are frequent regime changes or transitions to a new mode of macro functioning
- Those **fluid** conditions (agents are involved in a intensive learning process that in itself produces continuous changes in structural parameters) pose important challenges to policy makers

3. Monetary policy in a transition context

- In such circumstances, a high preference for flexibility is expected because unconditional compromises could lead to serious policy mistakes...this is in line with Brainard's theorem of policy making: to adopt a conservative strategy under (multiplicative) uncertainty about the parameters
- The intuition of this result is simple: *caution pays and there is a value to maintain open options avoiding lock-in strategies*
- In this context, there are strong arguments to adopt a gradualism approach (...but take note of the lessons of dynamic programming)
- At the same time, it is plausible to have a demand for clear and simple rules of game and a credible anchor for expectations

3. Monetary policy in a transition context

- Nothing of that is new: monetary policy typically face a trade off between credibility and flexibility
- **The problem is how to address monetary management in an economy where, like in the argentine case, policy making as a whole has suffered much discredit because of perceived incentive problems and at the same time simple, seemingly unconditional rules have shown their defects (and reduced credibility) in the event of large perturbances**
- **In those conditions the election among high cost alternatives is very difficult and the determination of the “optimal” regime very complex...**
- It would be preferable not to have such a difficult dilemma...in any case the objective of monetary policy should be to generate gradually the conditions to soften such a trade off (building an adequate reputation and widening grades of freedom for policy)

3. Monetary policy in a transition context

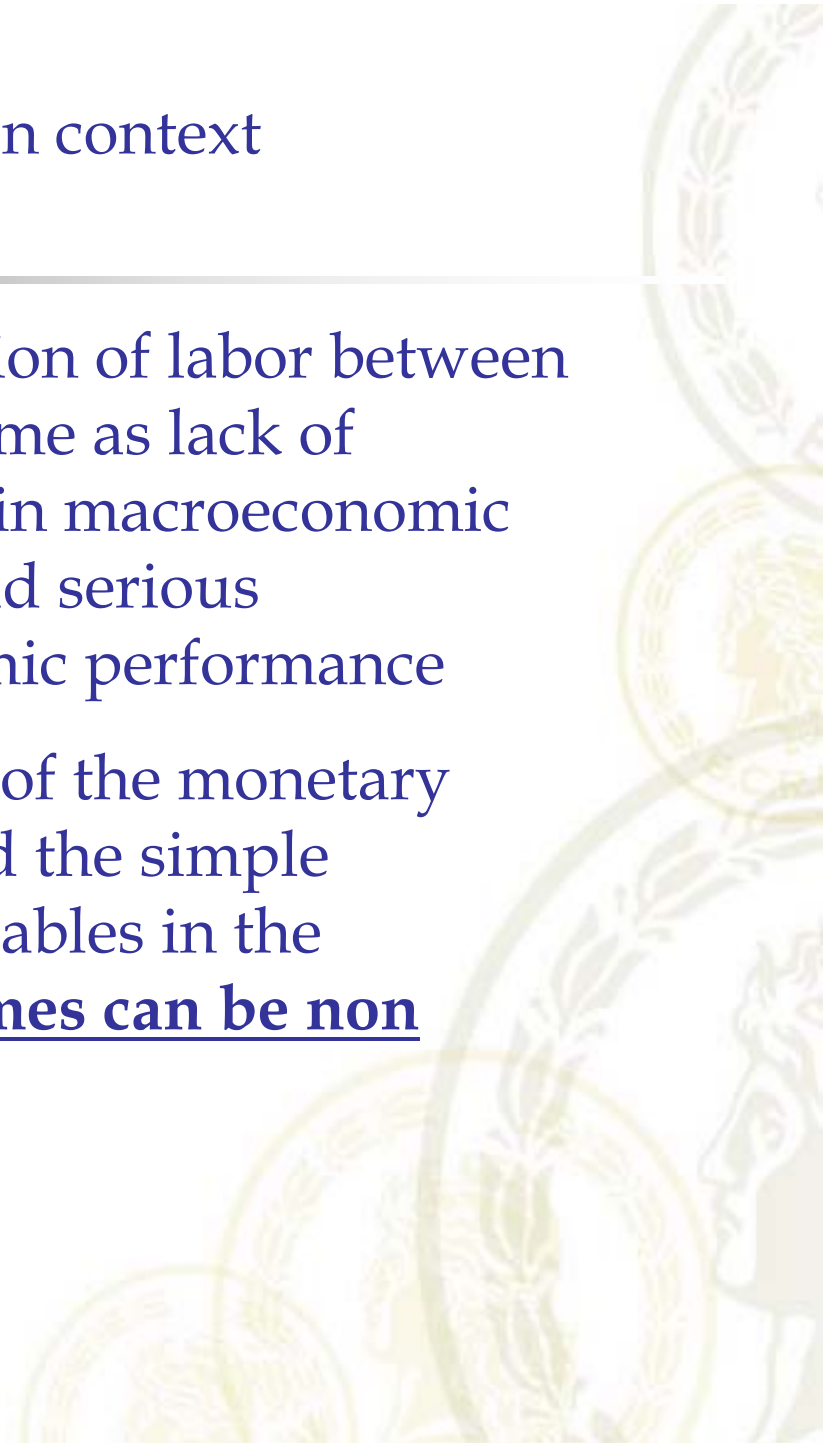
- Two recommendations:
- A) maintain open options for monetary policy avoiding costly irreversible situations leaving time to learn the conditions of operation of the new context
- B) A crucial requisite of credibility of policies would be to reduce the uncertainty about the probability of change regime
- Nevertheless, this should not lead to discretionary monetary policy and the recurrence to uncertainty should not to be a perfect excuse for lack of clear orientation in the conduct of policy

3. Monetary policy in a transition context

- Reducing the probability of future crises and mitigate the excessive aggregate volatility should be the prime objectives for the conduct of macroeconomic policy
- Although this requisite pertains to the whole macroeconomic policy, there are some inferences for monetary policy...because the degrees of freedom for a efficient task in this domain depends critically on the conditions on fiscal, financial and external sustainability
- It is well known that the proposals for the primary objective of monetary authority to be price stability and a nominal anchor prosecute the objective of a clear assignment of goals and objectives, trying to consolidate credibility and help in the process of expectation's formation

3. Monetary policy in a transition context

- That does not mean that division of labor between government agencies is the same as lack of coordination and consistency in macroeconomic strategy. Inconsistency can lead serious consequences in macroeconomic performance
- At the same time, the election of the monetary regime has a relevance beyond the simple determination of nominal variables in the economy. Exchange rate regimes can be non neutral

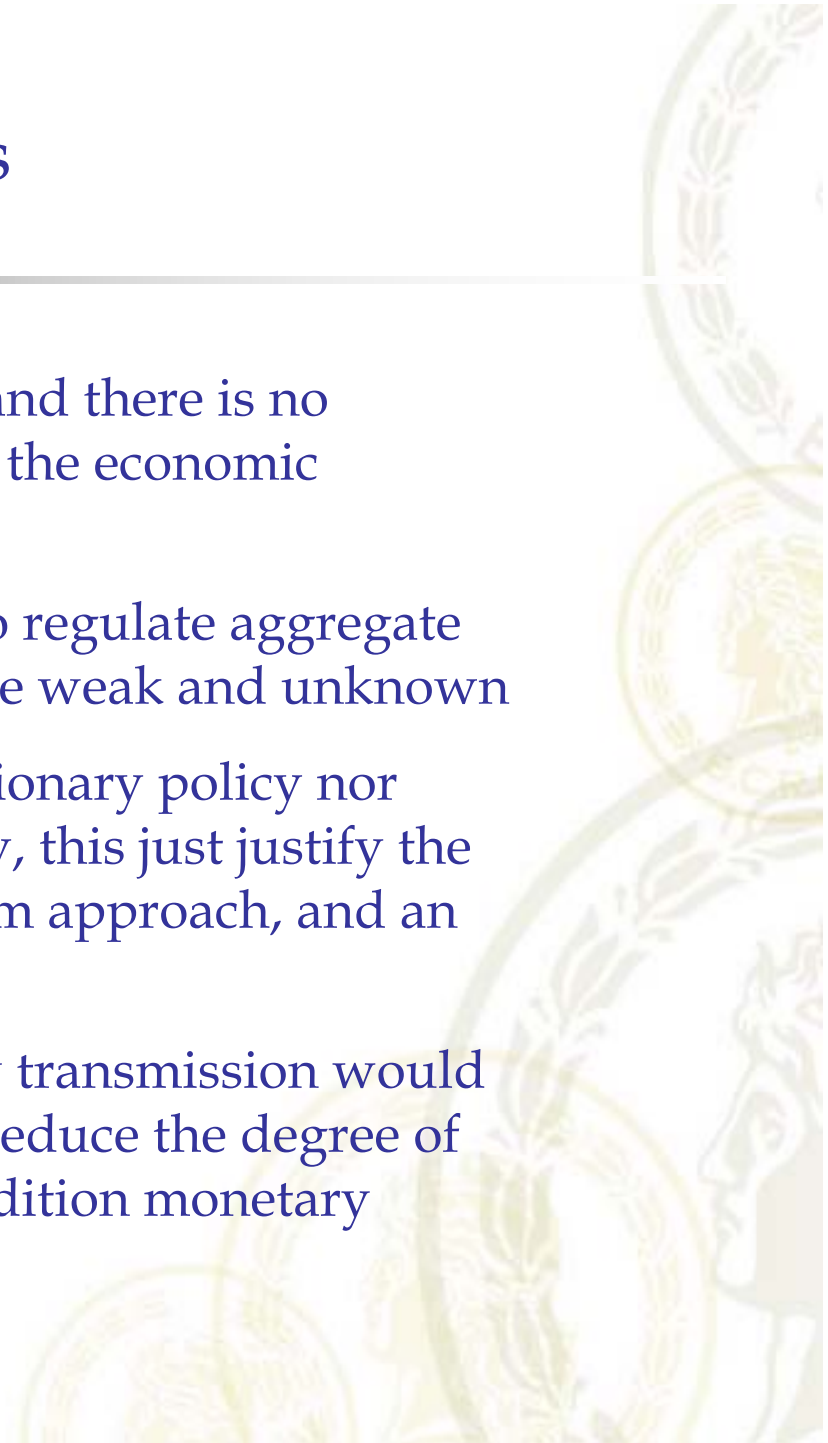


3. Consistency requisites, monetary policy and sources of dominance

- In spite of major improvements various features of present conditions reveal pending issues and permit to infer that the economy is yet in the middle of a transition toward a new long run equilibria
- Logically, the approaches to and instances of monetary policy were changing with the evolution of the economy since the crisis
- In a first stage, decisions were “heroic” because it was at stake the very elementary functioning of the monetary and financial system
- After that, with the economy in a more “normal” form, authorities continued confronting difficult economic policy dilemmas

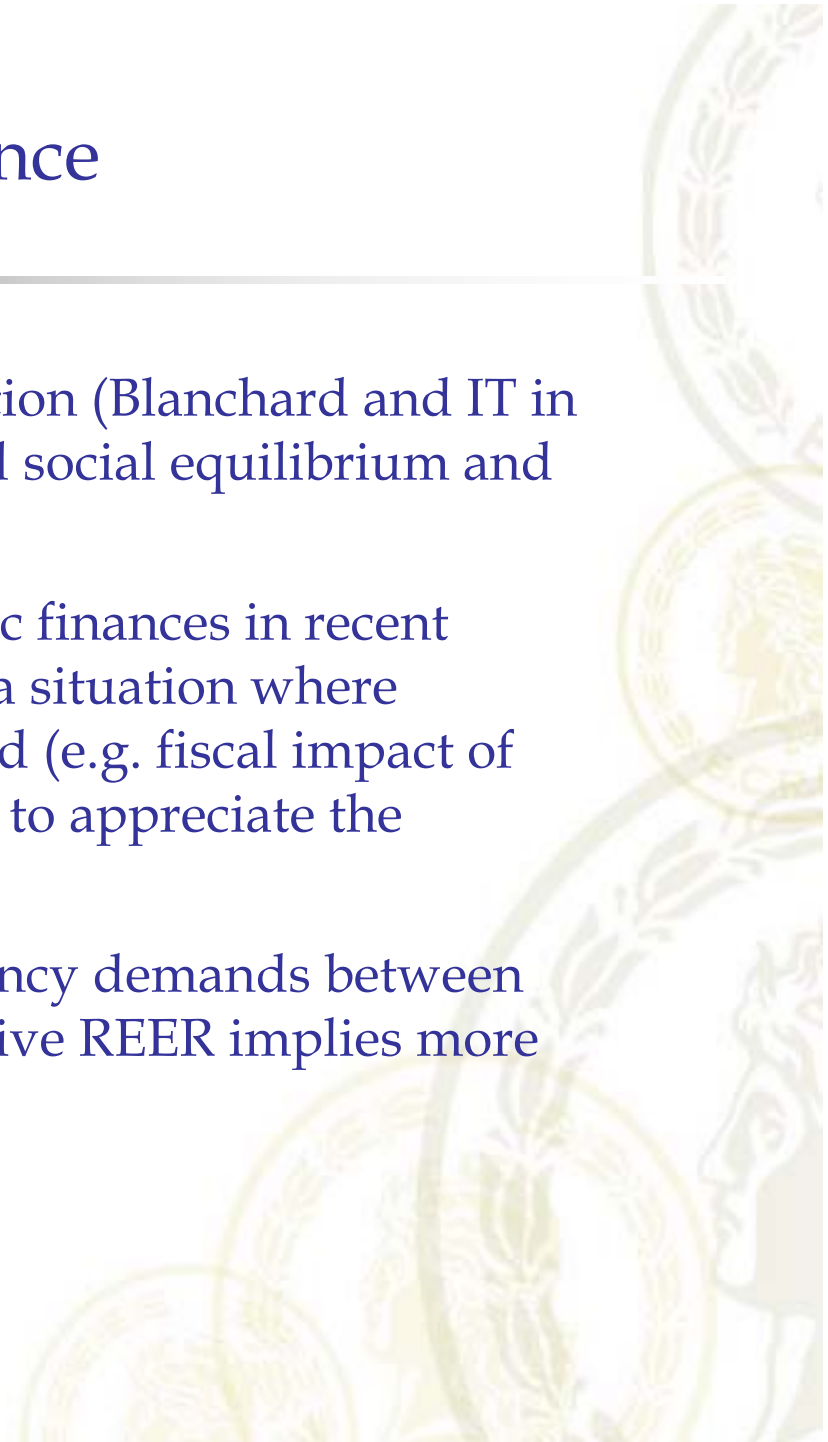
3. Current policy Dilemmas

- The economic structure is changing and there is no satisfactory model that describe well the economic functioning
- Low monetary policy effectiveness to regulate aggregate demand: transmission mechanism are weak and unknown
- This does not imply room for discretionary policy nor econometric nihilism; on the contrary, this just justify the adoption of a prudent and gradualism approach, and an intense learning process
- Additionally, and even the monetary transmission would work better, there other factors that reduce the degree of freedom of monetary policy and condition monetary management



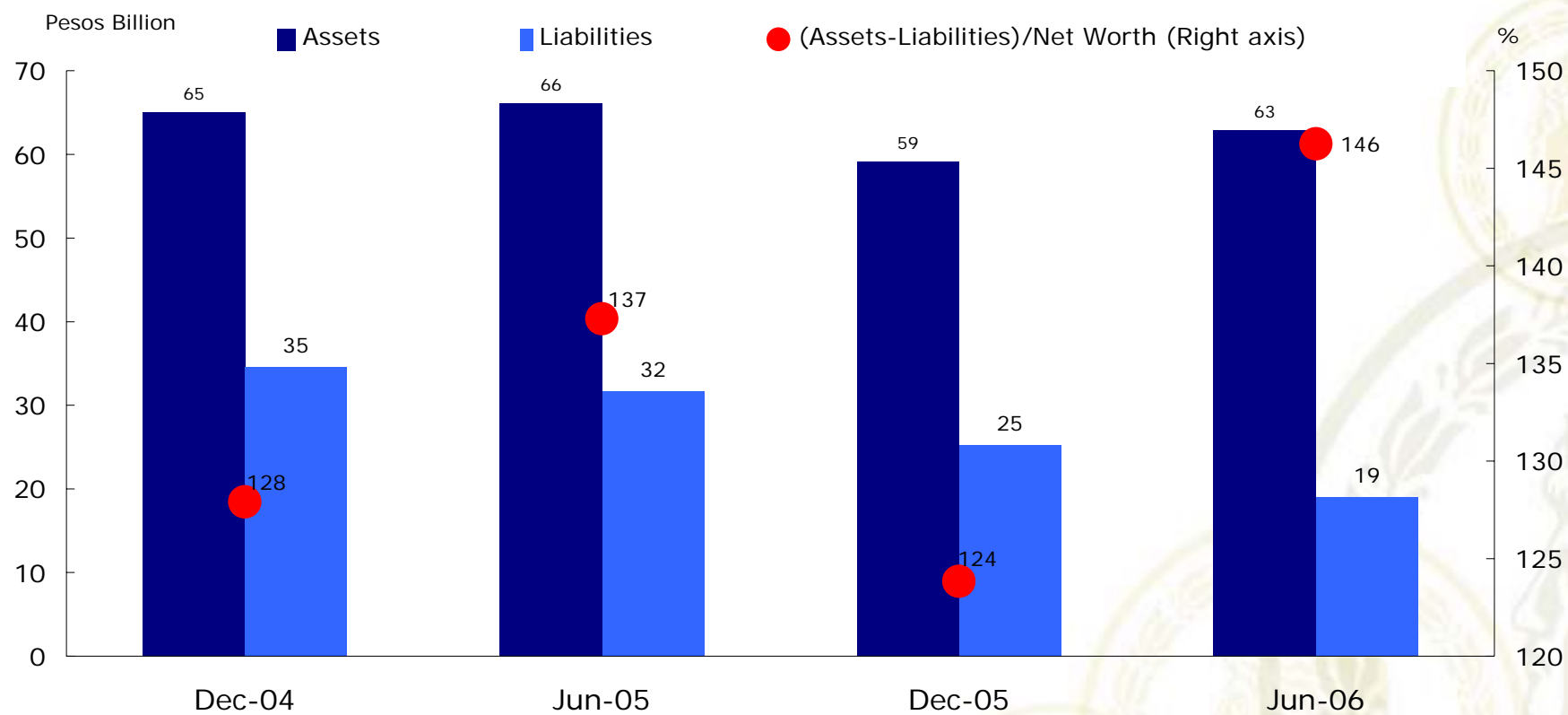
3. Argentina: fiscal dominance

- Causality can go in the reverse direction (Blanchard and IT in Brazil, tensions between external and social equilibrium and fiscal discipline)
- In spite of big improvement on public finances in recent years, there potential interactions in a situation where sustainability it is not well established (e.g. fiscal impact of monetary actions if that means trend to appreciate the currency)
- At the same time, important consistency demands between fiscal and monetary policy (competitive REER implies more real resources to that goal)



3. Argentina: Financial dominance

Real Interest Rate Mismatch
CPI adjusted



3. Argentina: external dominance

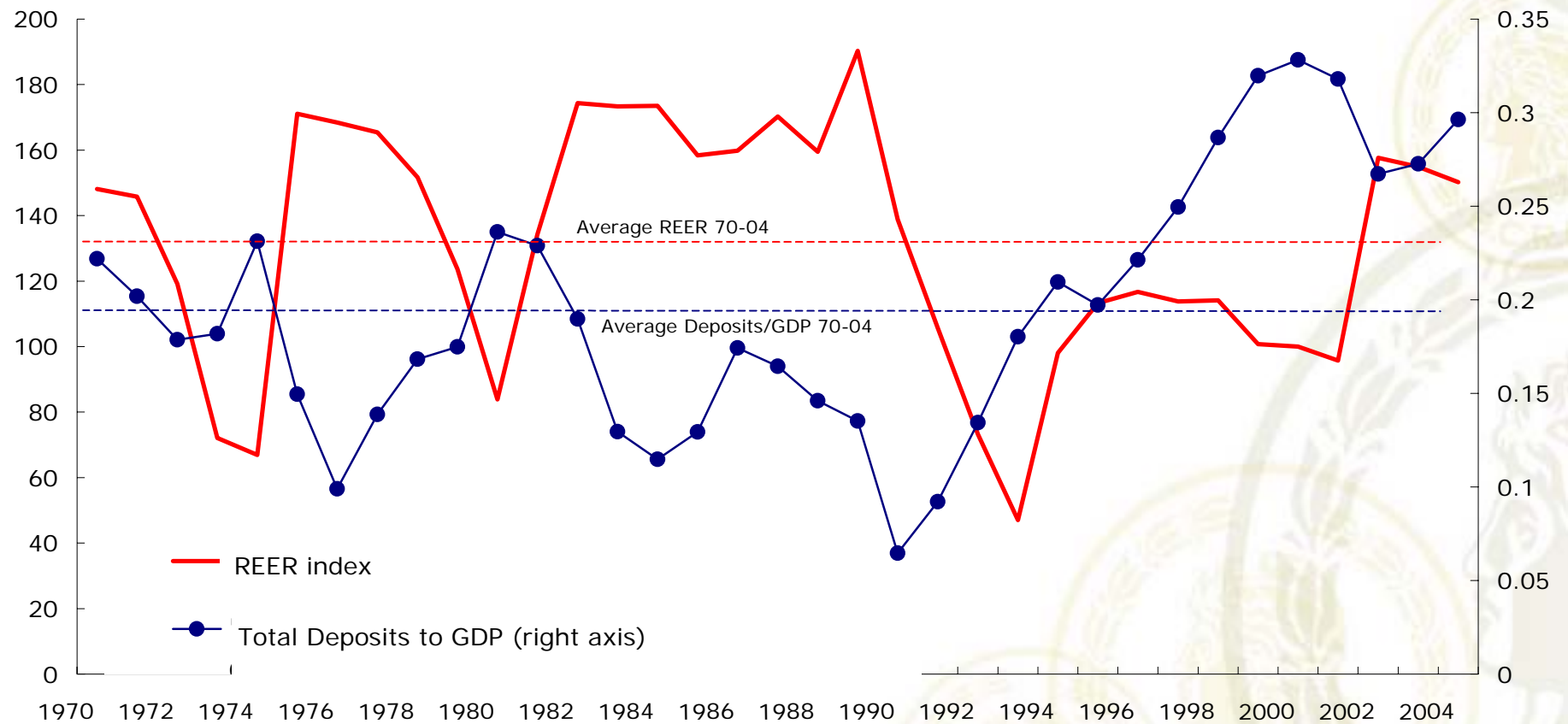
- Non neutrality of exchange rate regimes: two basic forms A) mean and variance of the stochastic process that governs REER and; B) the different dynamic paths associated with alternative nominal regimes
- A) Fear To float and regimes better suited to accommodate fluctuations (consequence in term of equilibrium price risk)
- B) Two polar alternative dynamic paths. Different dangers. Error type I and error of type II

Preliminary Concluding remarks

- The final election of the optimal regime depends not only on the objective character of trade off but too on the restriction and opportunities perceptions by the public and policy makers
- There is no optimal policy for every place and time
- The importance of consistency and lack of dominances

Argentina: challenges

Real Effective Exchange Rate and Total Deposits to GDP





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