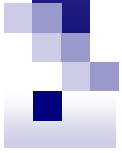


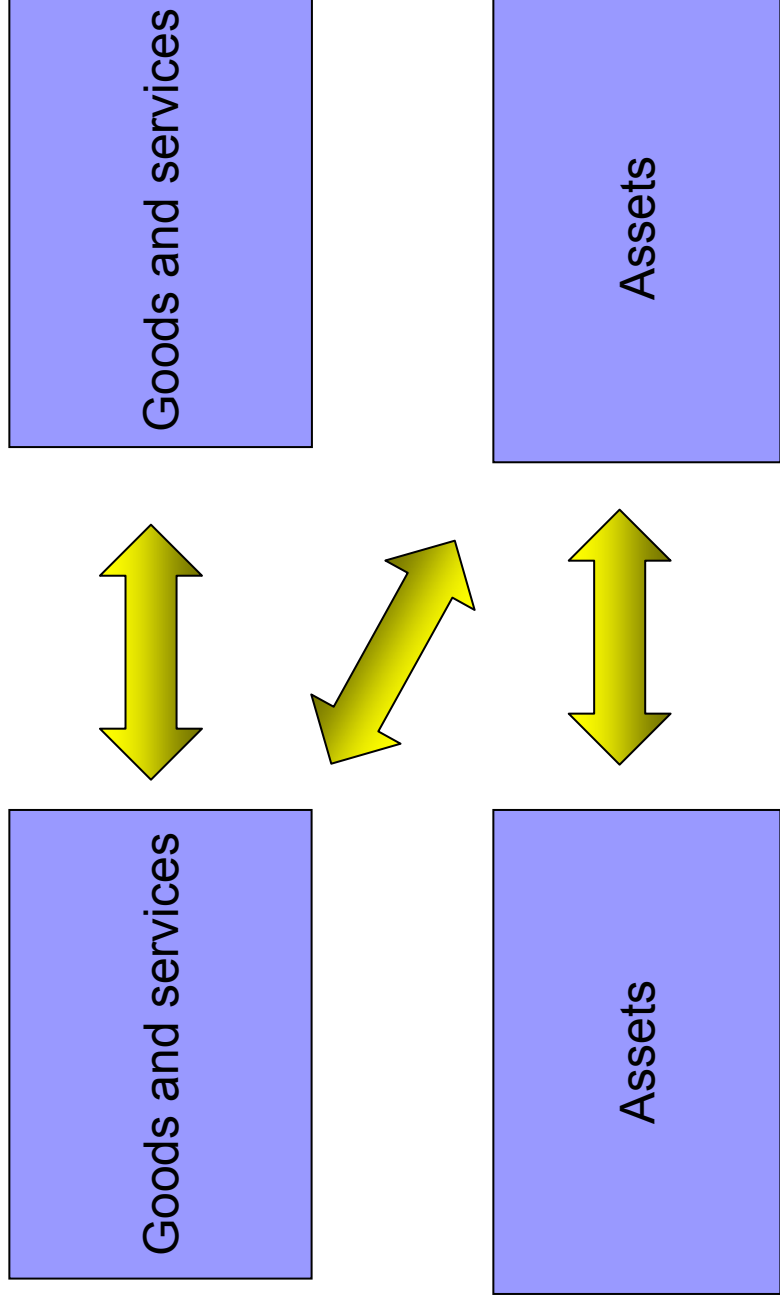
# Financial Globalization

Bilò Valentina

Maran Elena



# Three types of international transactions



# The Ricardian model of comparative advantage

- A country has a **comparative advantage** in producing a good if the opportunity cost of producing that good in terms of the other good is lower in that country than it is in other countries.

Suppose that  $a_{L1}/a_{L2} < a^*_{L1}/a^*_{L2}$   
 $a_{Li}$  unit labor requirements in the production of good  $i$

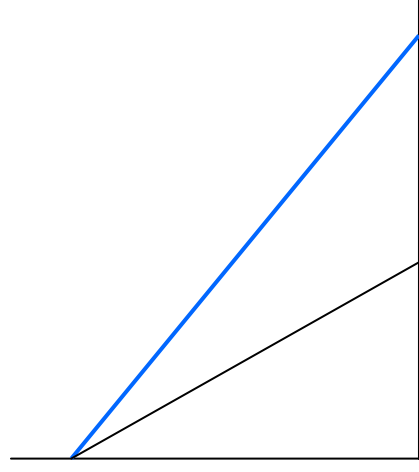
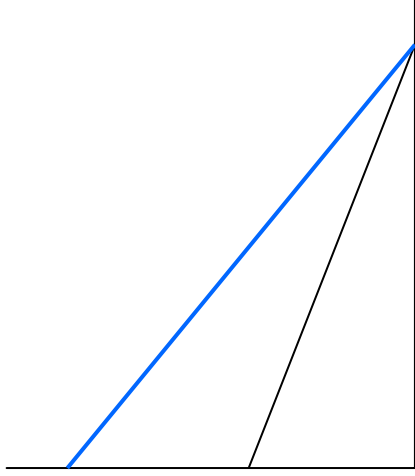
 Home has a comparative advantage in the production of good 1

 Trade between two countries can benefit both countries if each country exports the goods in which it has a comparative advantage.

# The Ricardian model of comparative advantage

- For each country we can draw a production possibility frontier given by

$$a_{L1}Q_1 + a_{L2}Q_2 \leq L$$



If each country specializes in the production of the good in which it has a comparative advantage, we can show that both countries derive gains from trade from this specialization.

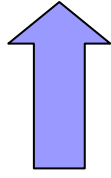
**NO TRADE:**

Consumption possibilities = Production possibilities

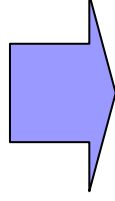
**INTERNATIONAL TRADE:** Possibility to consume anywhere within the lines which lie outside the countries' production possibility frontiers.

# International borrowing and lending

- The same idea of comparative advantage can be applied to **intertemporal trade**, the trade of current consumption for future consumption (consumption smoothing)



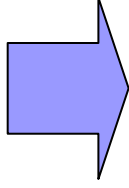
Intertemporal trade between two countries can benefit both countries if countries that borrow in the international markets are those where highly productive investment opportunities are available relative to current productive capacity, while countries that lend are those where such opportunities are not available domestically.



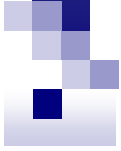
Capital should flow from capital-abundant to capital-scarce countries, which have higher returns on capital, until the returns are equalized.

# Gains from financial integration?

- More efficient international allocation of capital and consumption smoothing (comparative advantage model)
  - Poor countries can expand investment opportunities without being limited By the amount of domestic savings ( $S=I+CA$ )
- International risk sharing via portfolio diversification: it allows residents of all countries to reduce the variability of their wealth



GDP growth, consumption volatility reduction, cross country comovements of Macroeconomic aggregates.

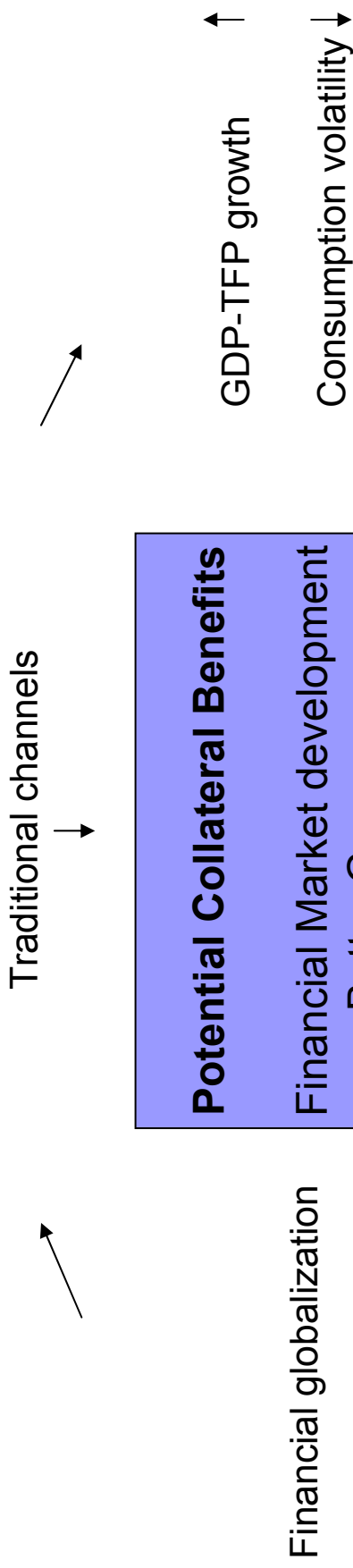


# Gains from financial integration?

- **GDP GROWTH:**
  - Direct benefits:
    - Complement to S
    - Technology spillovers and managerial expertise
  - Indirect benefits:
    - Sharing of income risk
    - Development of financial sector
    - Stable macroeconomic policies
- **VOLATILITY**
  - Possibility to use financial markets to insure against income risk allowing for a constant consumption level
- **COMOVEMENT**
  - Possibility to diversify away country-specific risk → comovement of major macroeconomic aggregates

# From the traditional view to a different perspective (Kose, Prasad, Rogoff, Wei)

- A different perspective:

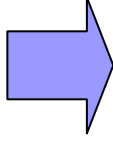


“Our perspective acknowledges the relevance of the traditional channels, but Argues that the role of financial globalization as a catalyst for certain collateral Benefits may be more important in increasing GDP-TFP growth and reducing Consumption volatility”



# From the traditional view to a different perspective (Kose, Prasad, Rogoff, Wei)

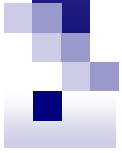
- ....But there are thresholds!



Financial market development  
Institutional quality  
Governance  
Macroeconomic policy  
Trade integration

Financial globalization can benefit countries just if certain threshold conditions are met.

- ! Remark: the listed thresholds almost coincide with the collateral benefits.

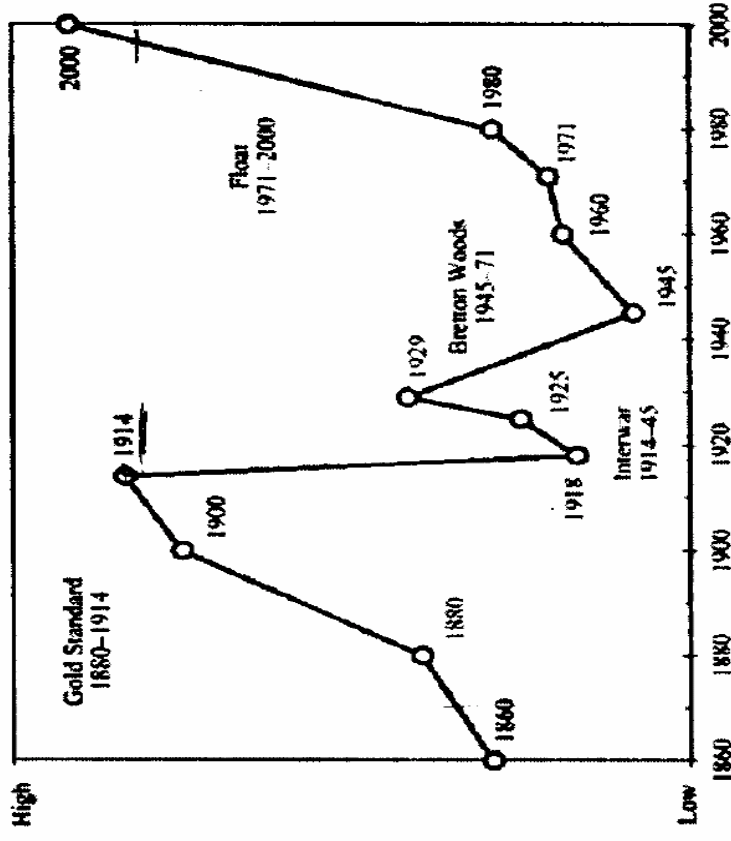


# The facts

- The evolution of financial globalization
- The composition of Capital Flows

# The evolution of Financial Globalization over time

- Myth 1: Financial Globalization is a **recent** phenomenon
- Myth 2: Financial Globalization is **irreversible**

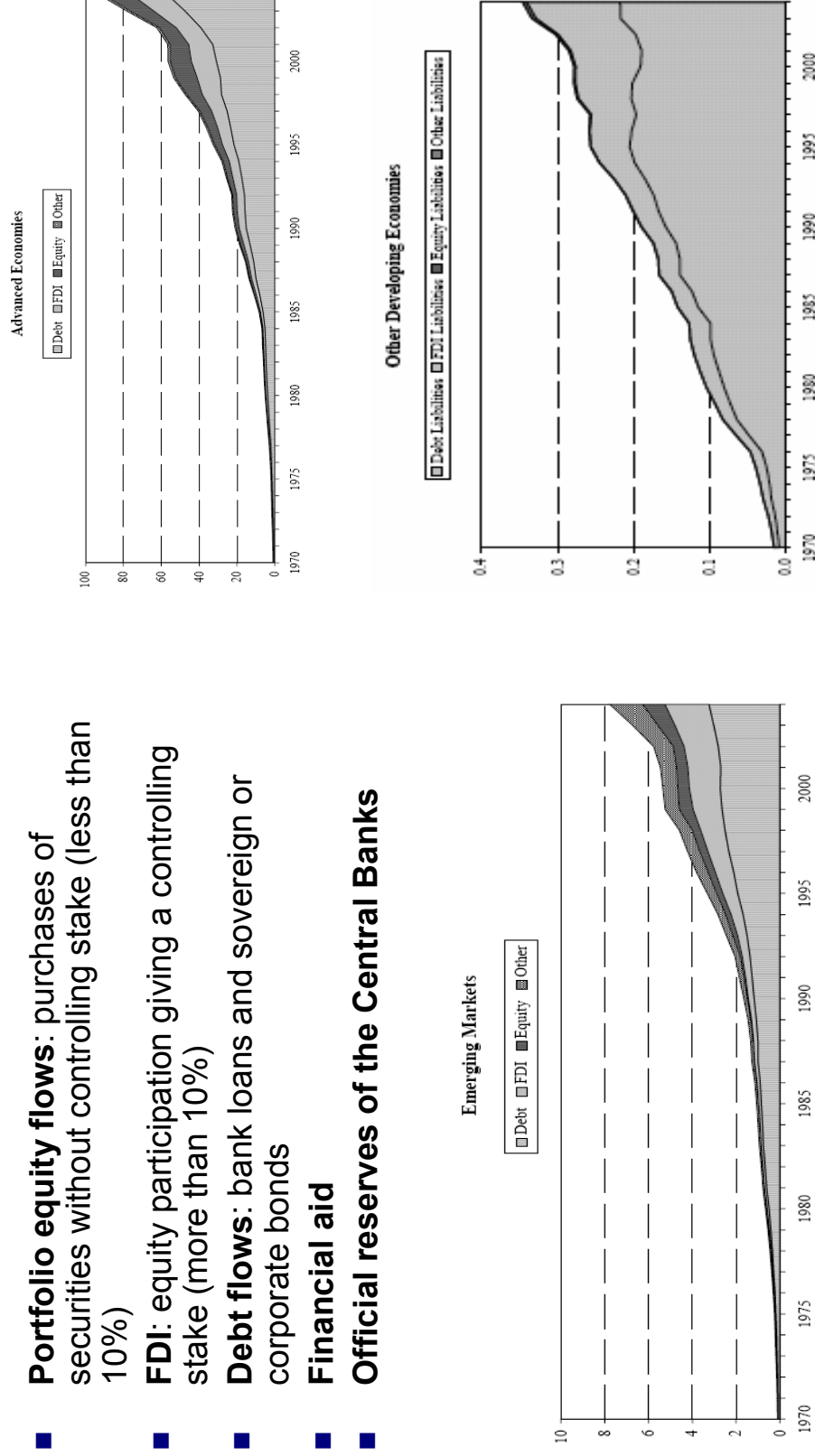


Source: Obstfeld and Taylor (01)

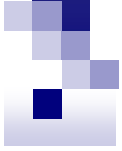
# The composition of Capital Flows

- **Portfolio equity flows:** purchases of securities without controlling stake (less than 10%)
- **FDI:** equity participation giving a controlling stake (more than 10%)
- **Debt flows:** bank loans and sovereign or corporate bonds
- **Financial aid**
- **Official reserves of the Central Banks**

Figure 1. Gross International Financial Assets and Liabilities, 1970–2004  
(trillions of U.S. dollars)

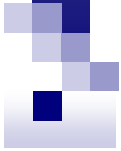


Source: Kose, Prasad, Rogoff, Wei (2006)

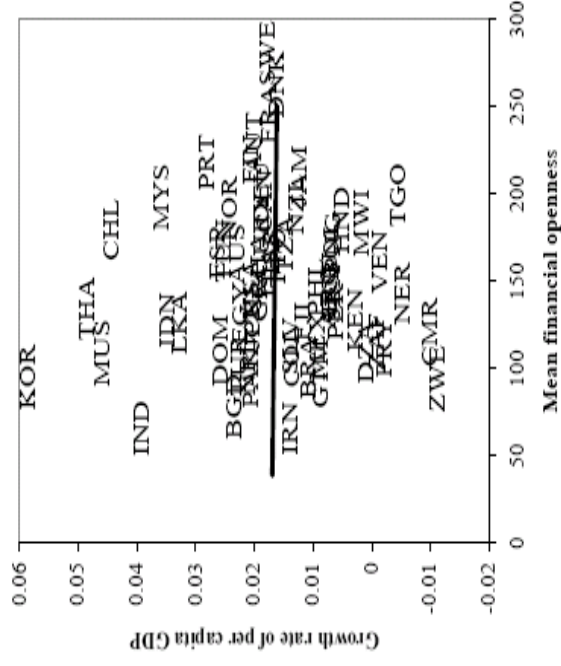


# Empirical evidence

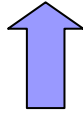
- Macroeconomic evidence on the effects of financial globalization:
  1. Effects on growth
  2. Effects on volatility
  3. Comovement
- Collateral benefits and thresholds
- Lucas paradox: does capital flow from rich to poor countries?
- Gourinchas-Jeanne: How big are the gains?



# Effects on growth 1



$$g_t(\text{GDP}) = \alpha + \beta F_t + u_t$$



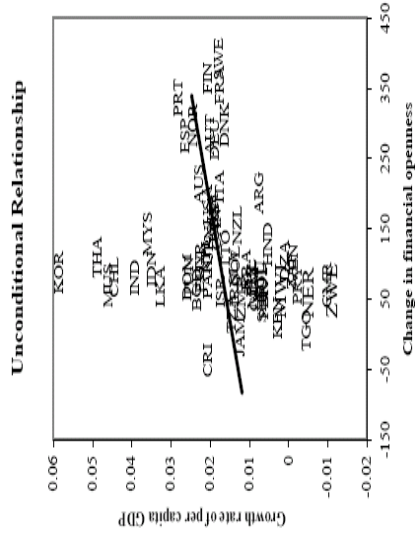
NO SYSTEMATIC RELATIONSHIP  
BETWEEN AVERAGE LEVEL  
OF FINANCIAL OPENNESS AND GROWTH

Source: Kose, Prasad, Rogoff, Wei (2006)

# Effects on growth 2

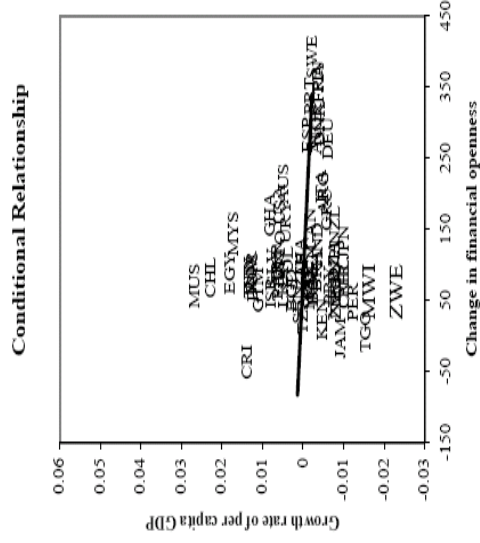
$$gt(GDP)=\alpha+\beta\Delta(Ft)+ ut \quad \uparrow$$

WEAK POSITIVE ASSOCIATION BETWEEN CHANGE IN FINANCIAL OPENNESS AND GROWTH



$$gt(GDP)=\alpha+\beta_1\Delta(Ft)+ \beta_2Zt + ut \quad \uparrow$$

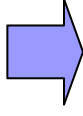
NO MORE EVIDENCE OF ASSOCIATION ONCE OTHER DETERMINANTS OF GROWTH ARE CONTROLLED FOR



Source: Kose, Prasad, Rogoff, Wei (2006)

# Effects on growth 3

- **Conclusion** from Kose, Prasad, Rogoff & Wei ( August 2006)  
Absence of robust evidence of a relationship between growth and financial openness, once other determinants of growth are controlled for (eg. Initial income, population growth, human capital, investment rate.)
- **By the way** different results in different studies! Why?
  1. Measures of financial integration (de jure VS de facto)
  2. Country coverage
  3. Time period
  4. Empirical methodologies (temporal effect, absence of multicollinearity, possible reverse causality)
  5. Choice of the dependent variable (GDP growth VS investment growth)



Studies using de facto/finer de jure measures, longer periods, interaction terms taking into account supportive conditions are more likely to find positive effects on growth.



# Effects on volatility and comovement

- **Volatility:**

1. *Does FI increase vulnerability to crises?*

Some evidence that countries with capital controls are more subject to crises  
BUT..... Selection effect → this evidence is not convincing enough.

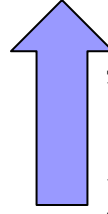
2. *Does FI reduce consumption volatility?*

No evidence that FI has improved international risk sharing and reduced the volatility of consumption.

$\sigma^2(\mathbf{g}(\mathbf{C})) / \sigma^2(\mathbf{g}(\mathbf{GDP}))$  ↑ for emerging economies

- **Comovement:**

Cross country correlation of major macroeconomic aggregates did not increase in the 1990s.

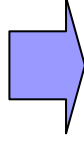


**CONCLUSION:** *In order to utilize the risk-sharing benefits of financial integration developing economies have to attain higher levels of financial integration.*

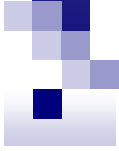


# Collateral benefits and thresholds: COLLATERAL BENEFITS

- **Financial sector development:** positive evidence of improved regulations, increased competition, reduction of the effects of capital flight, financial innovation;
- **Corporate and Public governance:** evidence of improved corporate governance and reduction of the cost of capital by mitigation of agency problems.  
Incentives for governments to improve public governance to attract FDI and portfolio equity inflows.
- **Macroeconomic Policies:** FI increases the cost of bad policies by increasing the exposure to sudden shifts in global investor sentiment FI as a commitment to better macroeconomic policies.
  1. Monetary policy: evidence of disinflationary trends
  2. Fiscal policy: not a strong evidence of budget deficit reductions.



The surveyed evidence points to a strong role for financial integration as a catalyst for financial sector and institutional development.



# Collateral benefits and thresholds: THRESHOLDS

- **Financial sector development:**
  1. prerequisite to enjoy the growth benefits of FDI and Equity flows
  2. influence volume and composition of capital flows
  3. impact on macroeconomic stability
  4. avoids excessive risk taking by financial institutions
- **Institutional quality and Governance:**

Important role in determining the outcome and level of de facto financial integration through effects on the *level* and *composition* of total flows.
- **Macroeconomic policies:**

Sound fiscal, monetary and exchange rate policy make FI more likely to be successful allowing to avoid crises.
- **Level of trade openness:**

Reduction of probability and cost of crises associated with financial openness →  
more open economies can achieve CA improvement with smaller depreciations.



# The Lucas Paradox

- Why doesn't capital flow from rich to poor countries, as theory would predict?

- **Assumptions of Neoclassical Model:**

$Y_t = A_t F(K_t, L_t) \rightarrow$  two production factors (K and L)

Constant and equal TFP ( $A_t$ ) across countries

- **Explanations:**
  1. Fundamentals: missing factors of production; government policies (capital controls and taxation); institutional quality and TFP (differences in  $A_t$ );
  2. International capital market imperfections : asymmetric information and sovereign risk.



# An econometric model to solve the paradox (Alfaro, Ozcan, Volosovych, 2005)

- $F_i = \alpha + \beta_1 \log(Y_i) + \beta_2 X_1 + \dots + \beta_n X_n + u_i$

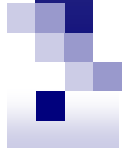
Where:

**dependent variable** ( $F_i$ ) = average inflows of direct and portfolio equity investment per capita

**independent variables** ( $\log(Y_i), X_1, \dots, X_n$ ) = log of GDP per capita in 1970, average institutional quality, log average years of schooling, log average distantness, average restrictions to capital mobility

**GOAL**

finding out which of the explanatory variables removes the paradox, making  $\beta_1$  insignificant when included in the regression.



# An econometric model to solve the paradox (Alfaro, Ozcan, Volosovych, 2005)

OLS Regressions of Capital Inflows per Capita- KLSV Flows Data

|   | 1    | 2    | 3    | 4     | 5     | 6     |
|---|------|------|------|-------|-------|-------|
| Dependent Variable: Average Capital Inflows per Capita, 1970-2000 |      |      |      |       |       |       |
| Observations: 58 countries  |      |      |      |       |       |       |
| Log GDP per capita  | 4,87 | 0,85 | 3,09 | 4,53  | 3,65  | 0,36  |
|   | 6,49 | 1,02 | 3,68 | 4,77  | 5,07  | 0,43  |
| Average institutional quality                                     |      | 2,54 |      |       |       | 2,16  |
|   |      | 5,91 |      |       |       | 4,15  |
| Log average years of schooling                                    |      |      | 3,84 |       |       | 0,85  |
|   |      |      | 2,86 |       |       | 0,69  |
| Log average distantness   |      |      |      | -3,54 |       | -1,6  |
|   |      |      |      | -0,91 |       | -0,48 |
| Average restrictions to capital mobility                          |      |      |      |       | -6,17 | -2,73 |
|   |      |      |      |       | -2,84 | -1,34 |
| R <sup>2</sup>  | 0,48 | 0,64 | 0,51 | 0,49  | 0,52  | 0,65  |
| Notes: T-Statistics are below coefficients                        |      |      |      |       |       |       |
| Source: Alfaro, Kalemli-Ozcan, Volosovych (2005)                  |      |      |      |       |       |       |

# An econometric overview

T-test

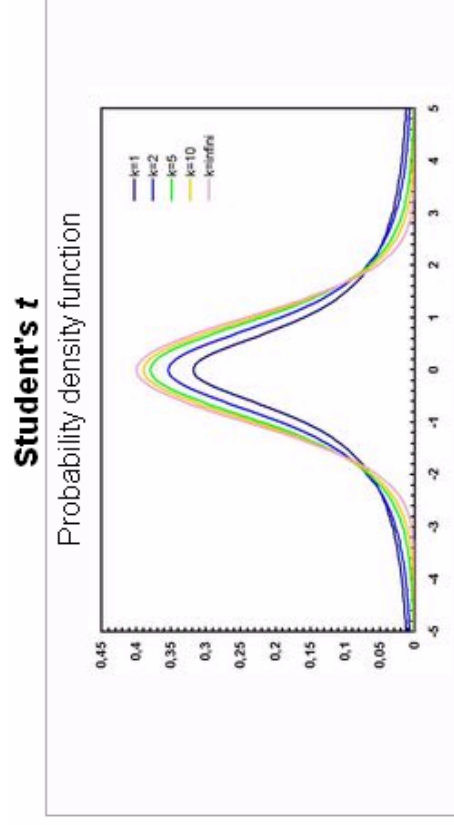
$H_0: \beta=0$

$H_1: \beta \neq 0$

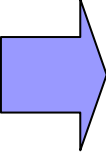
Test statistic:  $(\hat{\beta} - 0) / \hat{\varepsilon}_{\hat{\beta}}$  Under  $H_0$   $t \sim$  Student's  $t$ -distribution with  $n-k$  d.f.

Critical value:  $t^*_{n-k} (\alpha/2)$  where  $\alpha$ =significance level

Decision rule: reject  $H_0$  if  $|t| > t^*$  and conclude that  $\beta$  is significantly different from 0 at the level  $\alpha$

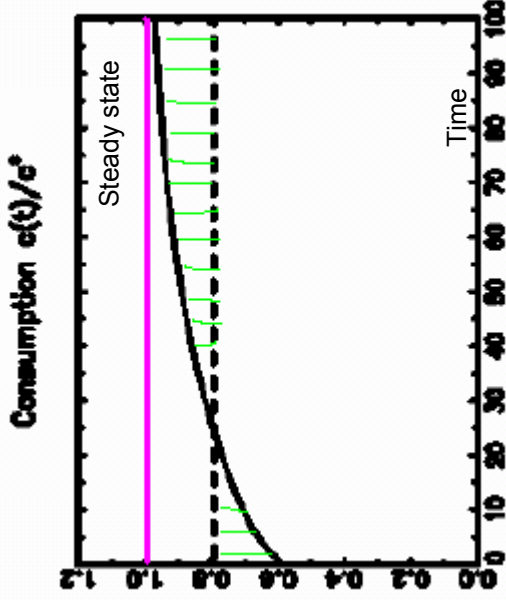


# Results

- Main finding: Institutional quality is the variable that explains the Luca's paradox
  - Column 1 → Capital flows to rich countries (Luca's paradox)
  - Column 2 → We add index of institutional quality → The paradox disappears (index of Institutions: *significant* (1%), Log GDP: *not significant*)
  - Columns 3-4-5 → We add other explanatory variables and they are all *significant* (1%), Log GDP remains *significant* → These variables cannot account for the paradox
  - Column 6 → In the multiple regression (all variables included) Institutional quality is the explanation for the Capital Inflows, Log GDP per Capita becomes *insignificant*
- 
- Only in the regressions where the index of institutions is included Log GDP per Capita becomes insignificant; Restrictions to Capital mobility is also an important determinant but it cannot account for the paradox.



# The gains from FI: Gourinchas-Jeanne (2005)



How big the gains are depends on the initial Capital gap: FI removes temporary distortions and Accelerates the level countries will eventually achieve

$$\frac{y_0}{y_0^{*,us}} = \frac{\tilde{y}_0}{\tilde{y}^*} \cdot \frac{A'_0}{A_0^{us}}$$

LHS: Development gap

RHS:

First term: Convergence gap

Second term: Distortions (Physical and Human Capital)

Third term: Productivity gap

# The gains from FI: Gourinchas-Jeanne (2005)

*Development Accounting 1995*

|                     | Development    |                         | Convergence      |               | Distortions |                 | Productivity |  |
|---------------------|----------------|-------------------------|------------------|---------------|-------------|-----------------|--------------|--|
|                     | $y_o/y_o^{MS}$ | $\tilde{y}/\tilde{y}^*$ | Physical Capital | Human Capital | Total       | $A'_o/A_o^{MS}$ | Obs.         |  |
| Non-OECD countries  | 0.11           | 0.73                    | 0.83             | 0.63          | 0.53        | 0.27            | 65           |  |
| Low Income          | 0.07           | 0.72                    | 0.73             | 0.59          | 0.43        | 0.23            | 24           |  |
| Lower Middle Income | 0.11           | 0.72                    | 0.90             | 0.64          | 0.57        | 0.26            | 23           |  |
| Upper Middle Income | 0.24           | 0.81                    | 0.86             | 0.76          | 0.66        | 0.45            | 13           |  |
| High Income         | 0.44           | 0.70                    | 1.20             | 0.91          | 1.09        | 0.59            | 5            |  |

- The opening of the Capital Account accelerates convergence, but it does not affect Distortions and Productivity
- The most significant improvements can be done on the Distortions and Productivity Sides



# Issues for further research

- Identification of key reforms priority for a particular country in order to meet the threshold conditions needed to reap the gains of FI
- Measuring Financial Openness
- Identifying the effects of different kind of flows
- Improving the research based on micro-level (firm-level) data

# Our Conclusions

- We find that empirical evidence on the importance of collateral benefits and threshold effects is the most convincing
  - We re-establish the link between TRADE OPENNESS and FINANCIAL OPENNESS, interpreting trade openness as a threshold condition for FI:
- FI without trade openness could lead to capital misallocation, thus violating the principle of comparative advantage.