Foreign Capital and Economic Growth

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*This presentation reflects the views of the authors only and not necessarily those of the IMF, its Board, or its management.

Outline

➢ **The Theory**

1. Capital should flow from low productivity countries to high productivity countries

2. Foreign capital should increase growth

➢ **The Evidence**

1. Does capital follow productivity? **Not quite, and less so in recent years**

2. Are net foreign capital inflows positively correlated with the growth of developing countries? **No, and the correlation is largely negative.**

Outline contd.

➤ Three possible explanations for the key correlation

➤ Foreign capital may not be needed: Correlation accounted for by domestic savings

➤ Foreign capital may not help: Little capacity to absorb foreign capital (although FDI may be an exception) given domestic financial system

➤ Foreign capital may harm:
  • Proneness to overvaluation (trade/mercantilism)
  • Volatility (?)

2. The Real Paradox of Capital Flows?

➢ Lucas paradox can be explained because low capital does not translate into high marginal product of capital (MPK): institutions, default etc (Reinhart et. al., 2003; Kraay et. al. 2005).

➢ Real paradox: why do fast growing (and thus typically high MPK) poor countries not get the most net foreign capital? The Allocation Puzzle (Gourinchas-Jeanne (2006))

- Not quite true of FDI
- Puzzle deepens in the 2000s

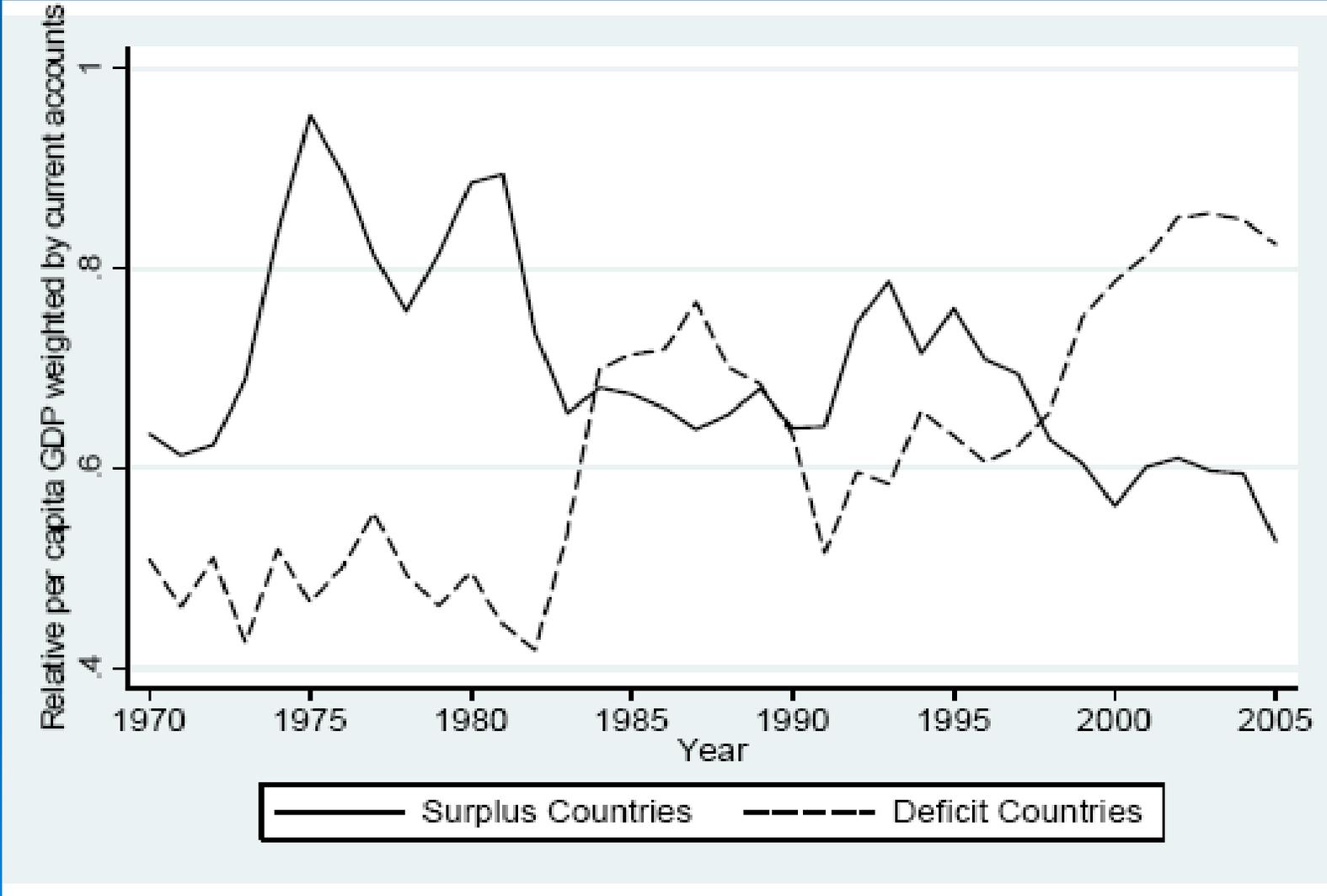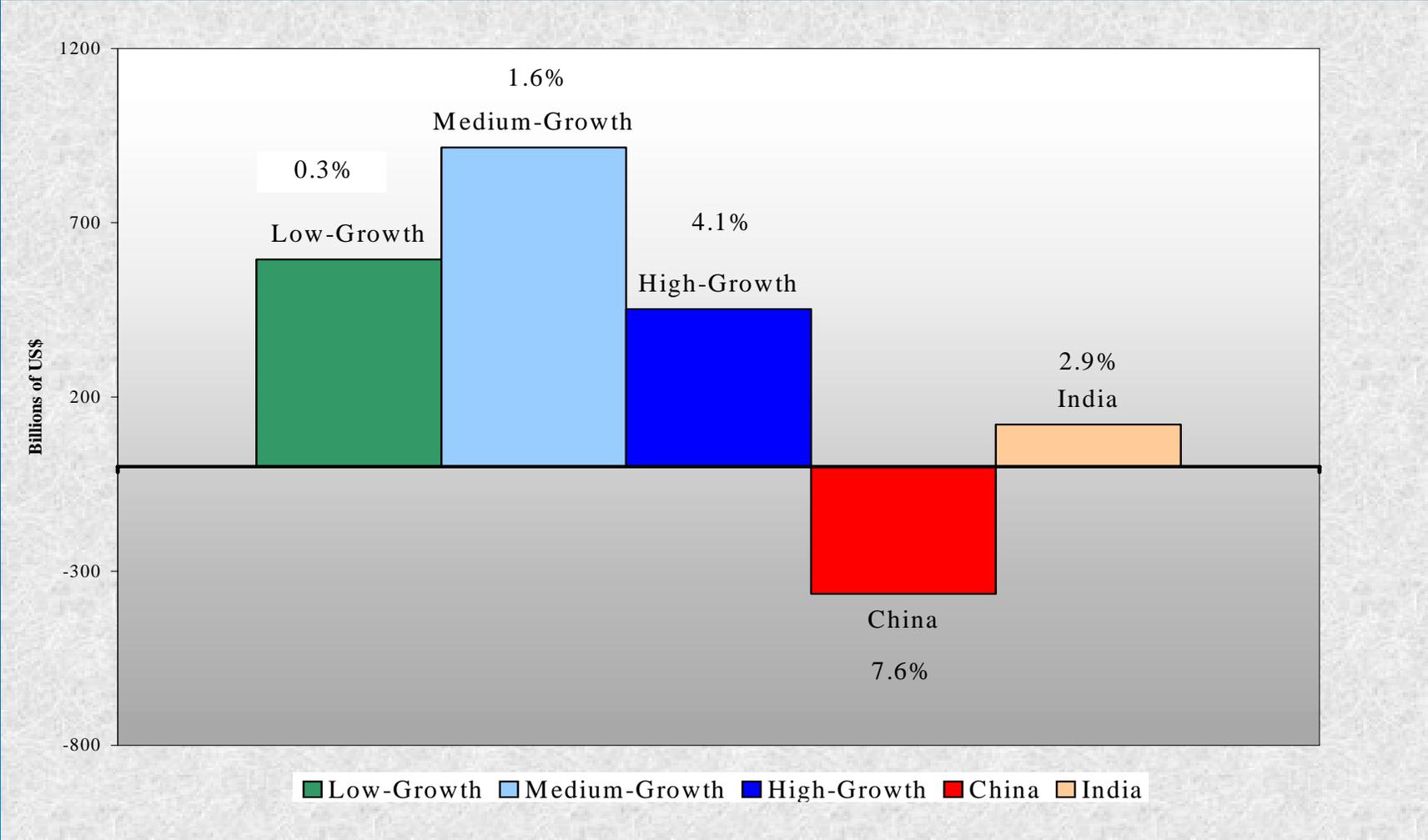# LUCAS PARADOX: Relative Income of Capital-Exporting (Surplus) and Capital-Importing (Deficit) Countries

Figure 5a. The Allocation of Capital Flows to Non-Industrial Countries 1970-2000

Figure 5b. The Allocation of Capital Flows to Non-Industrial Countries 1985-1997 and 2000-2004

Billions of US$

500

0

-500

0.2%
Low

1.7%
Medium

3.6%
High

3.7%
India

China
8.9%

1985 - 1997

0.3%
Low

2000 - 2004

Medium
2.4%

High
3.7%

China
8.5%

India
4.1%

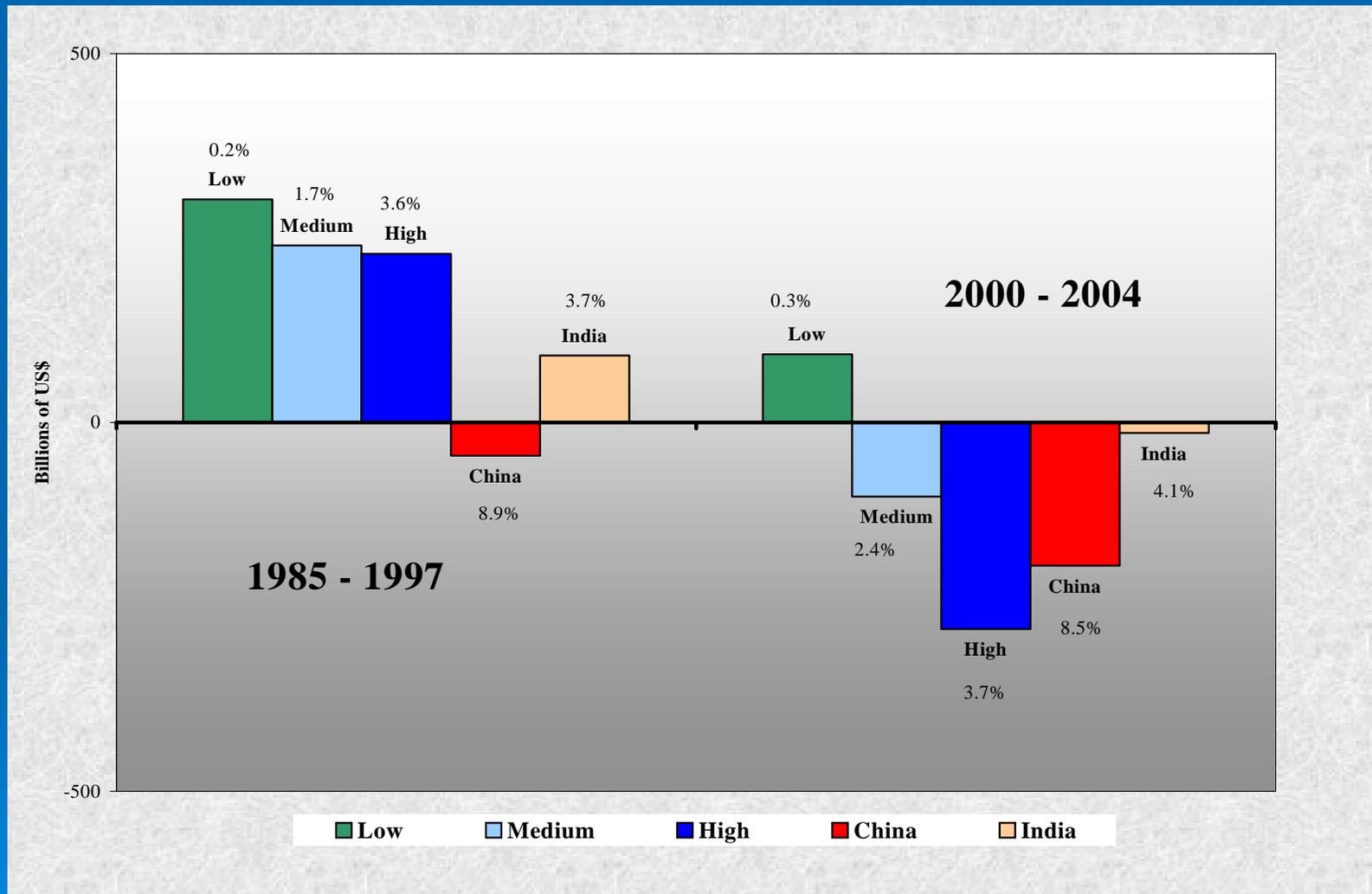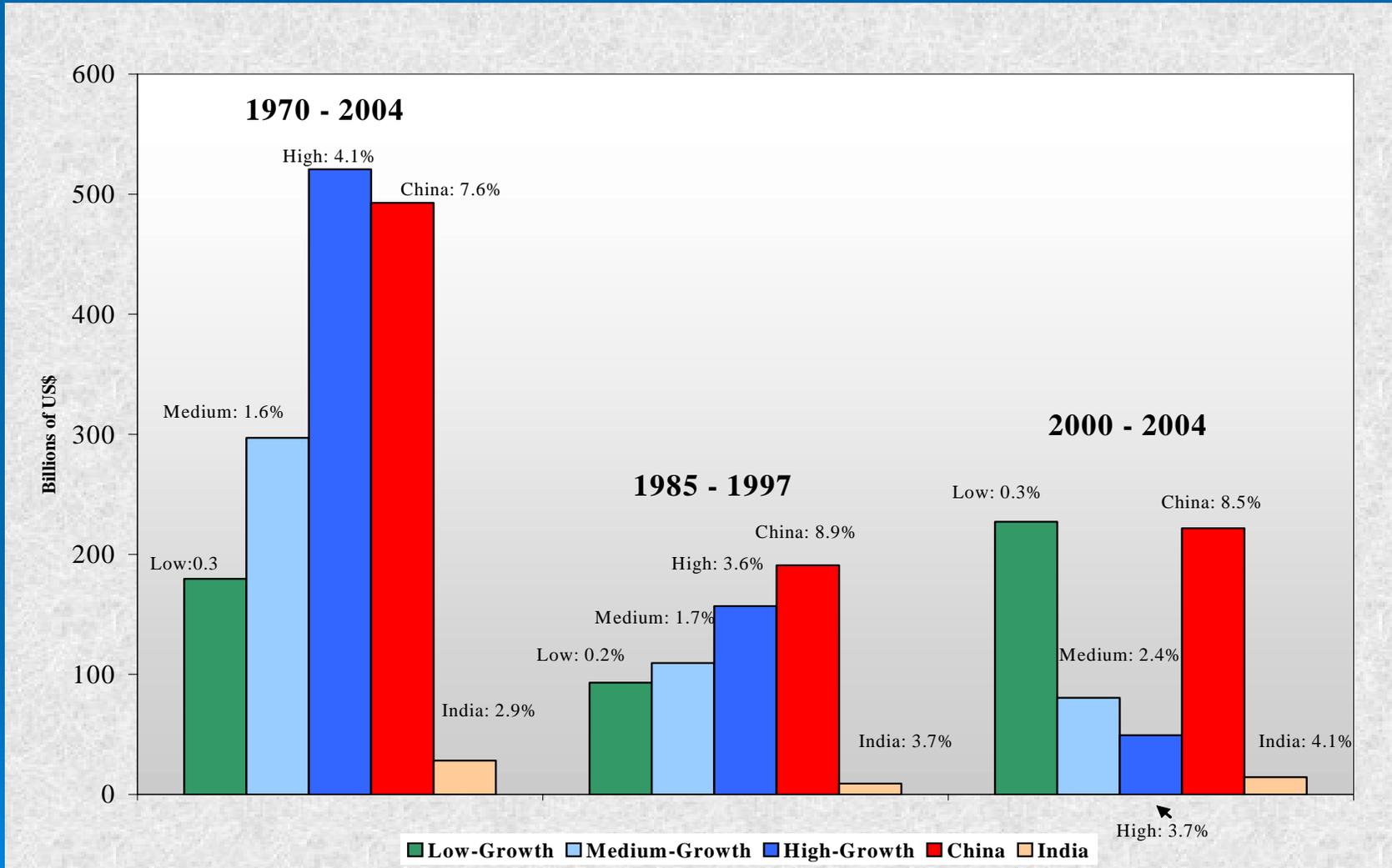■ Low   ■ Medium   ■ High   ■ China   ■ India

Figure 6. The Allocation of Net FDI Flows to Non-Industrial Countries

Does foreign capital matter for growth?

➢ Ceteris paribus, those who draw in foreign resources to finance more investment should grow more: The association should be positive (i.e. between current account balance and growth negative).

➢ Growth theory tells us what the effect of savings (foreign and domestic) on growth should be: the capital share (α) times output-capital ratio (Y/K)

$$\frac{\delta \gamma_y}{\delta (\frac{S}{Y})} = \alpha \frac{Y}{K} = 0.35 * 0.45 = 0.16$$

Data and key Results

➢ Data and sample: Bosworth and Collins (2003). Current account and capital flows data from WDI, WEO, and BOP

➢ Key results:

➢ The association between current account deficits (net foreign financing) and growth is not positive for developing countries.
  - Indeed, it is typically negative: Countries that use more foreign capital grow slower.
  - Domestic savings rather than investment is key

➢ The association between current account deficits and growth is positive for industrial countries.

Non-Industrial Versus Industrial Countries

Dependent Variable: Average Real Per Capita GDP Growth 1970-2000

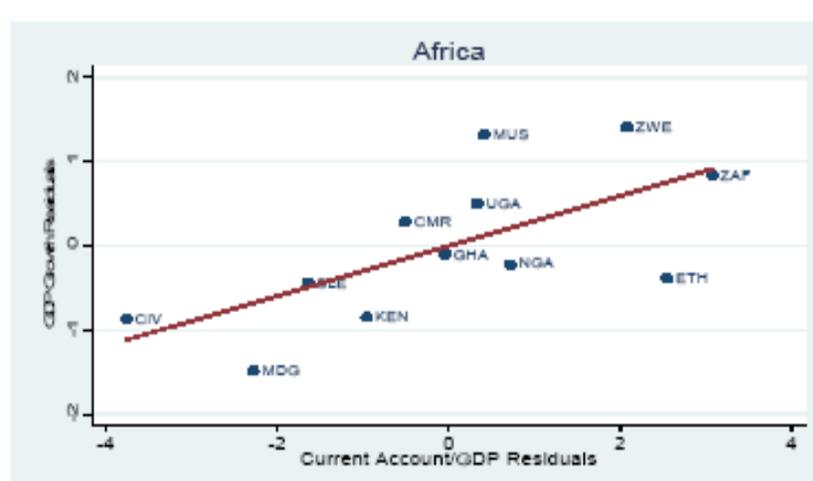|		
Current account/GDP	0.098 **	0.121 **
	(0.046)	(0.053)
Industrial countries * current account/GDP		-0.264 ***
		(0.078)
Emerging markets* Current account/GDP		-0.062
		(0.151)
Adjusted R-squared	0.741	0.735
Number of observations	60	82

Figure 12. Current Account Balances and Growth in Non-Industrial Countries 1970-2000 - Excluding Countries with Aid/GDP>10 Percent
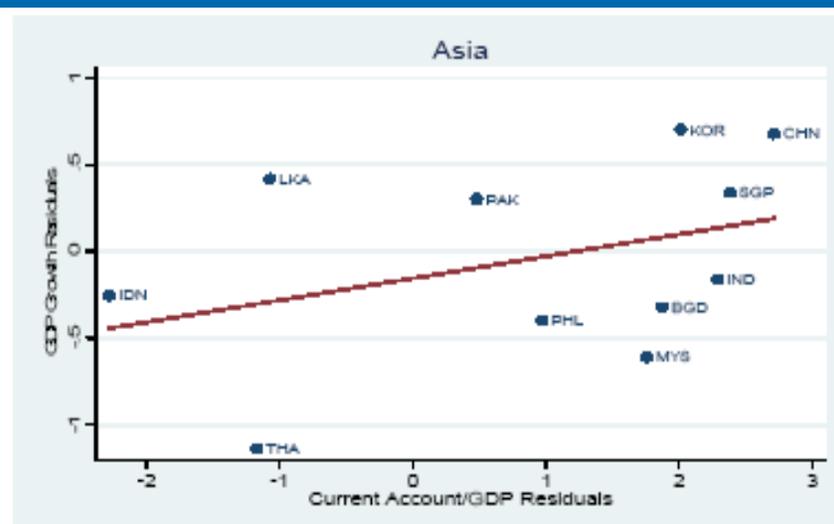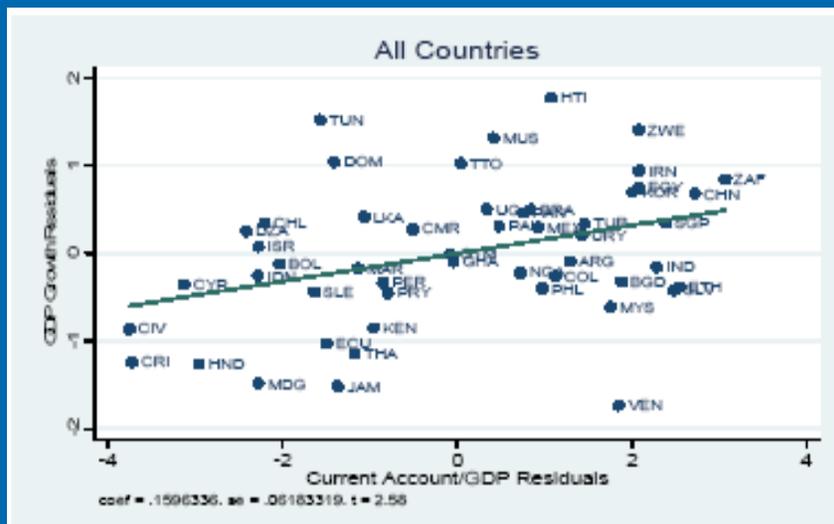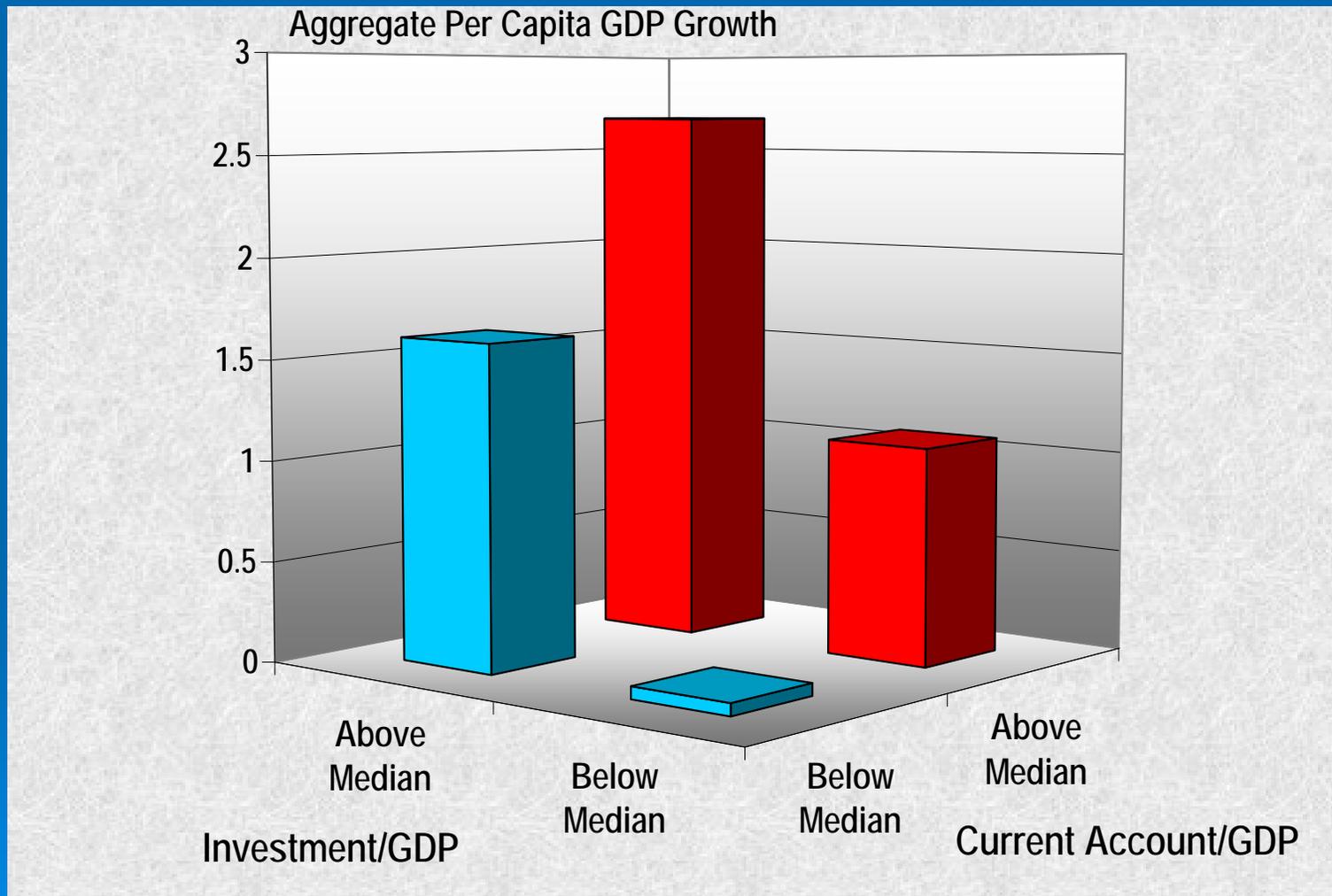

Slope= 0.127

Slope= 0.154

Slope= 0.298

Explanation 1: Foreign Capital Not Needed" Role of Savings

Explanation 1: Foreign Capital Not Needed?

Endogenously-generated savings is key driver: Correlation reflects endogeneity: growth drives savings and hence the correlation

- Theory (Kraay and Ventura, 2005, Gourinchas and Jeanne, 2006)
- Evidence more complicated because:
  - Different signs on industrial and non-industrial countries
  - Hence one possibility is endogeneity plus role of financial sector

Explanation 2: Foreign Capital May Not Help?

➢ Foreign capital may not help if financial system underdeveloped. Poor countries have low "absorptive" capacity for foreign capital. Domestic financial system is necessary to intermediate foreign capital

Role of Financial System: Macro-Evidence

Dependent Variable: Average Real Per Capita GDP Growth 1970-2000

	Baseline specification (1)	Financial Development	
		Above median (2)	Below median (3)
Current account/GDP	0.098**	0.084	0.143*
	(0.046)	(0.061)	(0.087)
Adjusted R-squared	0.741	0.800	0.690
Number of observations	60	30	30

Role of Financial System: Micro-Evidence

➤ The Rajan-Zingales specification

➤ *Growthij = Constant + country fixed effects+ industry fixed effects+ β (Domestic financial development of country j * Dependence of industry I on finance) + α (Openness to Capital Flows of Country j* Dependence of industry i on finance) + εij*

➤ Key coefficient is *α, especially for countries with low levels of financial development.*

Role of Financial System: Micro-Evidence

Dependent Variable: Average rate of growth of value added in sector i in country j

|	
Measures of domestic financial development* external dependence	Positive Significant
FDI liabilities/GDP* external dependence	**.098** **(.045)**
FDI liabilities/GDP* external dependence* below median financial development	-0.201** (.095)
Adjusted R-squared	**0.46**
Number of observations	909

Micro-evidence

➢ Foreign capital helps the relative growth of financially dependent industries, but only in countries with more developed financial systems.

➢ In countries with poorly developed financial systems, foreign capital has, at best, zero effect.

# Explanation 3: Foreign Capital may Harm: Overvaluation

➢ <u>Developing countries that rely on foreign capital are more prone to overvaluation.</u>

- Capital exports reduces overvaluation

➢ Overvaluation stunts the growth of the traded manufacturing sector, a key stepping stone to growth.

➢ Not a problem for industrial countries

- Little correlation between capital inflows and overvaluation
- <u>Don't need stepping stones</u>

Overvaluation and Net Private Capital Flows, 1970-2000
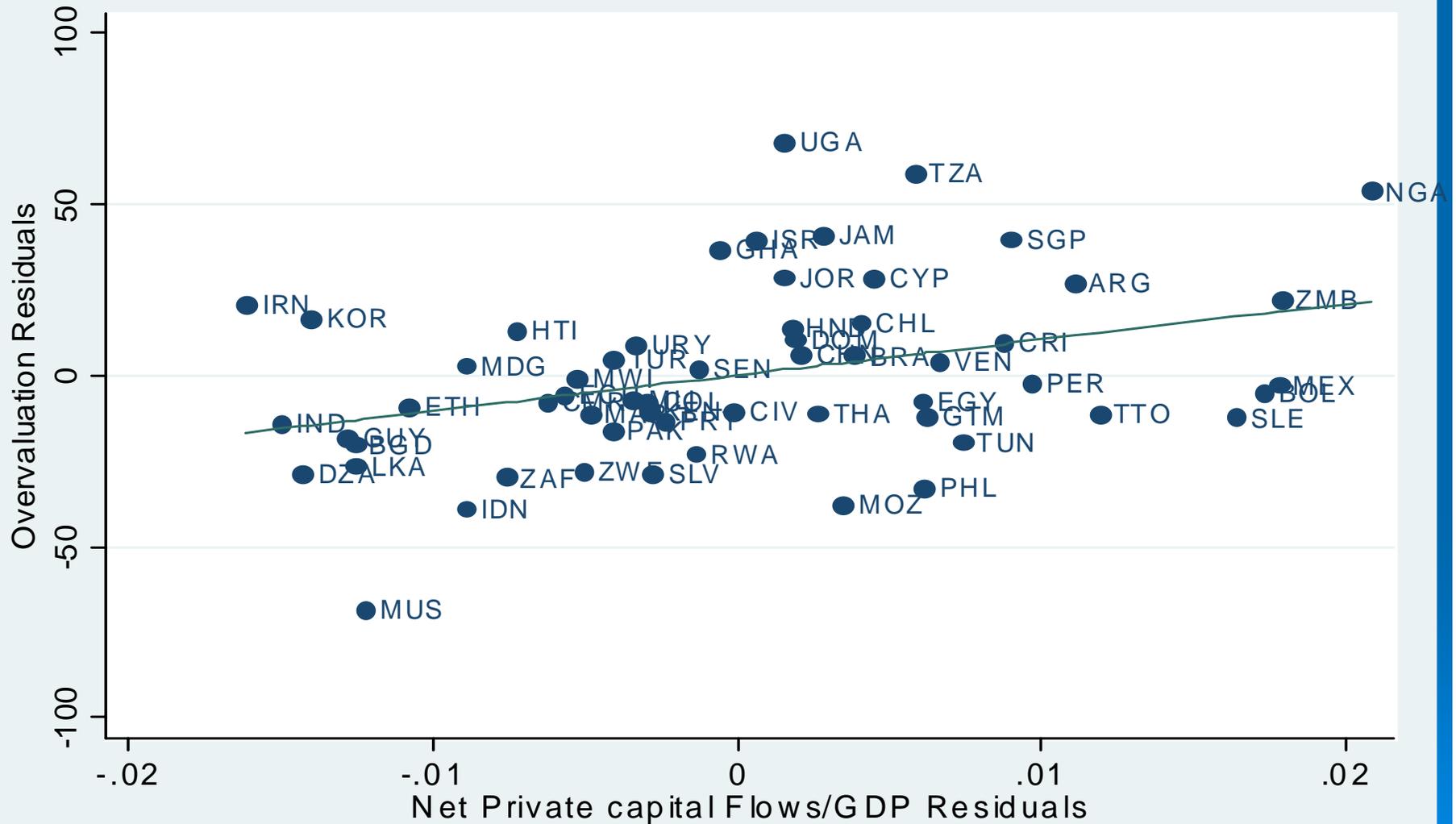
coef = 1041.6684, (robust) se = 372.4575, t = 2.8

Growth and Overvaluation

coef = -.01405588, (robust) se = .00438663, t = -3.2
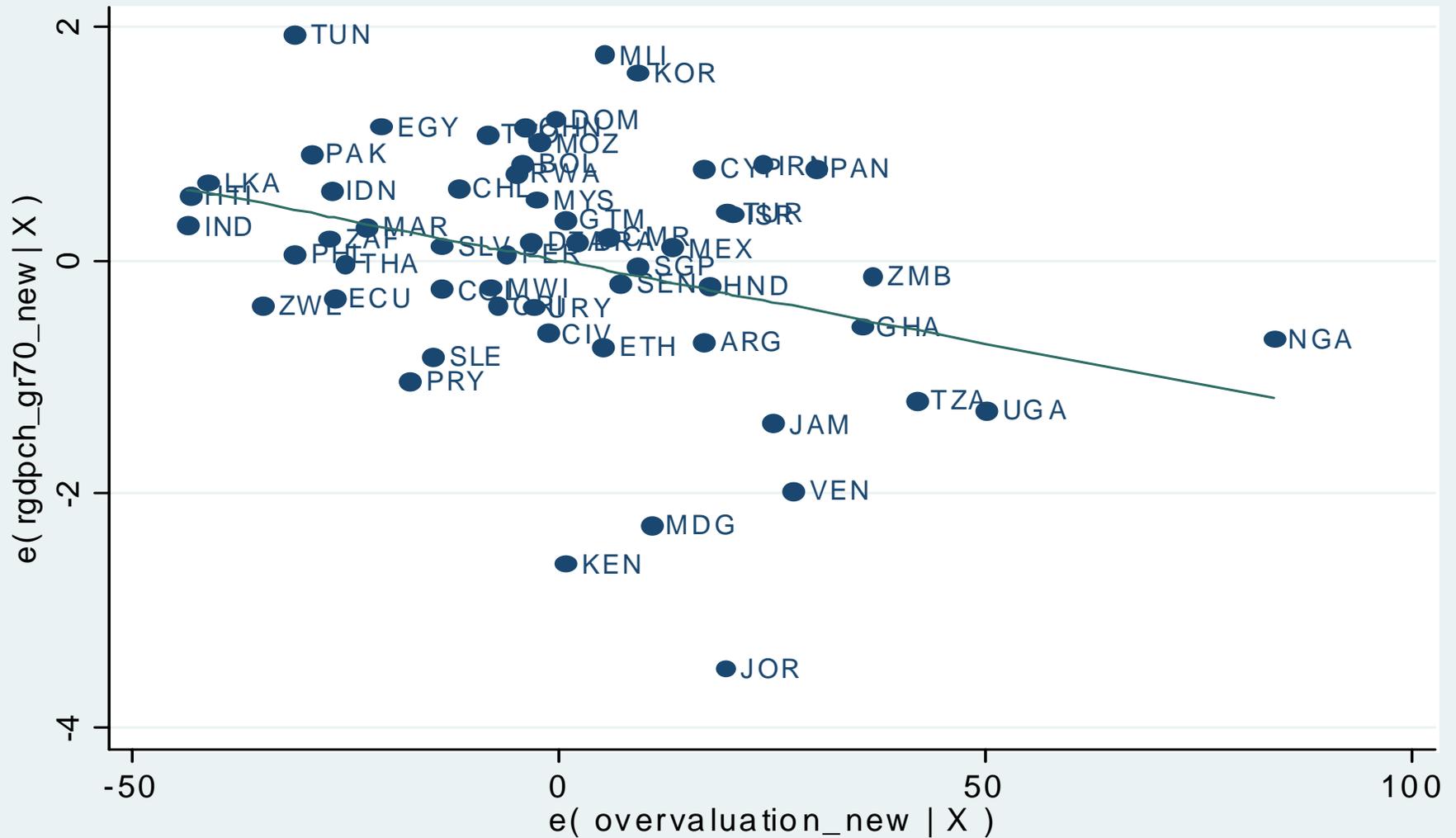
Implications

➤ Under both "may not need" and "may not help" underdeveloped financial system has a key role. Better financial system clearly would help even under "may not need" view.

➤ Opening up to capital inflows may not help much unless domestic financial sector and/or tradable sectors develop

➤ Dilemma: Is development the antidote?

➤ But domestic financial sector may not develop without threat of foreign competition
  - Future commitment on opening?
    - Chinese banking and the WTO
  - Controlled opening to outflows?
    - China, India

Other Explanations: Volatility

➢ Does foreign capital cause crises that sets back the growth of countries that rely on it (e.g., Stiglitz (2000))?

➢ Would explain why industrial/financially developed countries have a less negative correlation between foreign financing and growth.

- Little correlation between crises and capital inflows/integration (Kose, et al. (2006))

Final Thought on Global Imbalances

➢ How do you explain rise in savings especially in countries that did not experience a financial crisis?

➢ One possibility is that recent decade shock is not just US-centered but a global productivity shock,

➢ US and other trading partners with strong financial systems runs deficits

➢ Countries with weak financial systems (especially post a crisis driven by indiscriminate investment) run surpluses

Implications

➢ Imbalances reflective of deep structural deficiencies, but given deficiencies, are an equilibrium outcome.

➢ Imbalances could come down as productivity growth slows in US and investment & consumption pick up elsewhere, helped by financial sector reform.

➢ Equilibrium ≠ Stable ≠ Sustainable

Figure 11. Savings-Investment Balances around Growth Spurts: Non-Industrial Countries 1970-2000
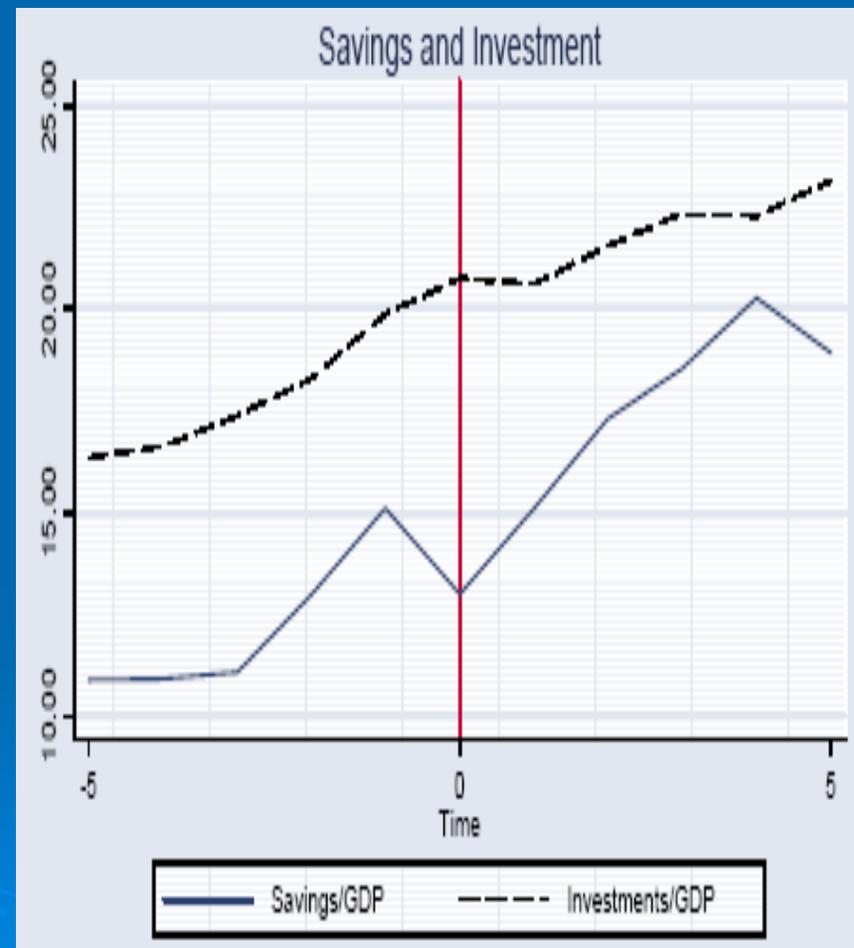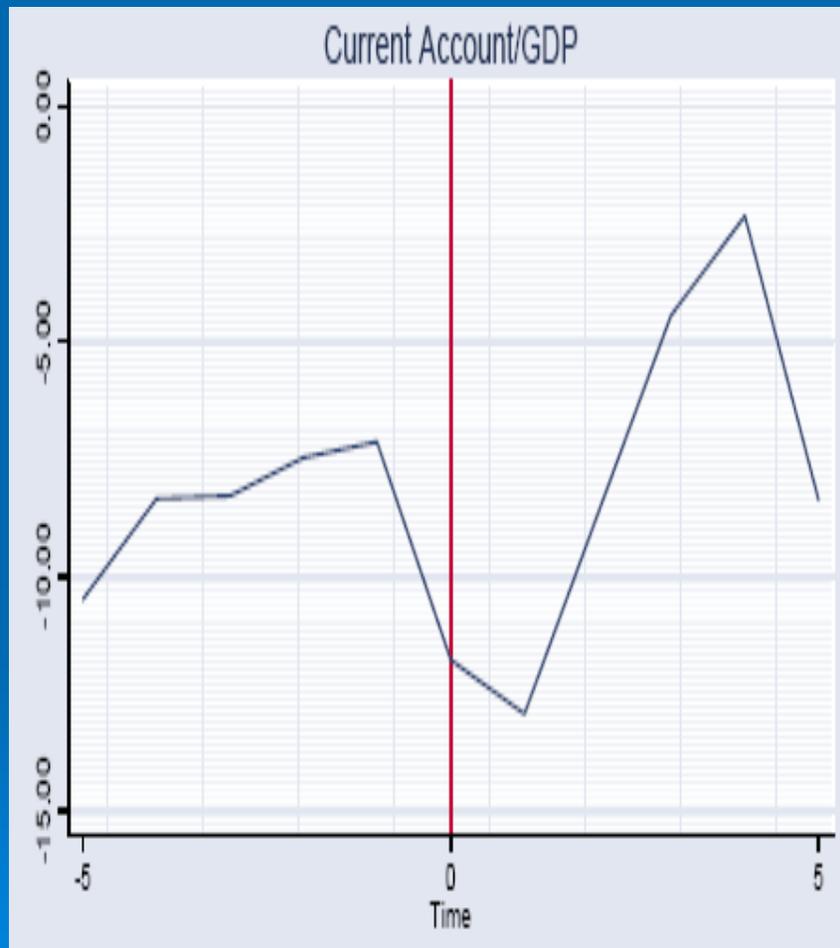
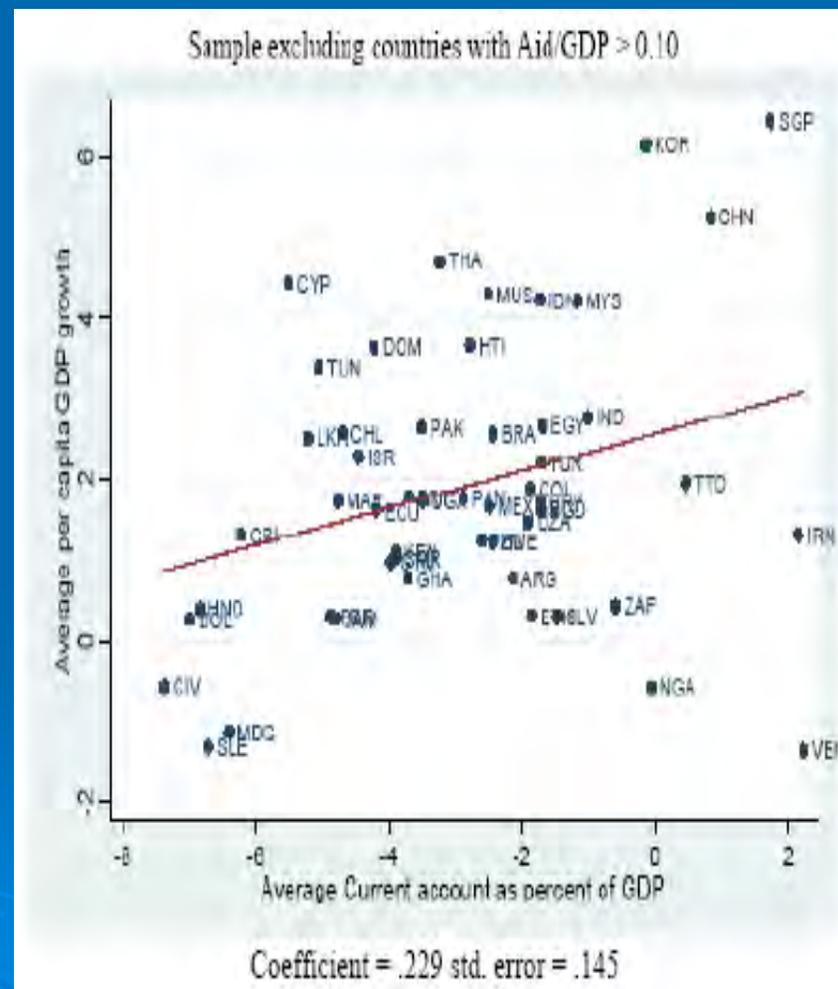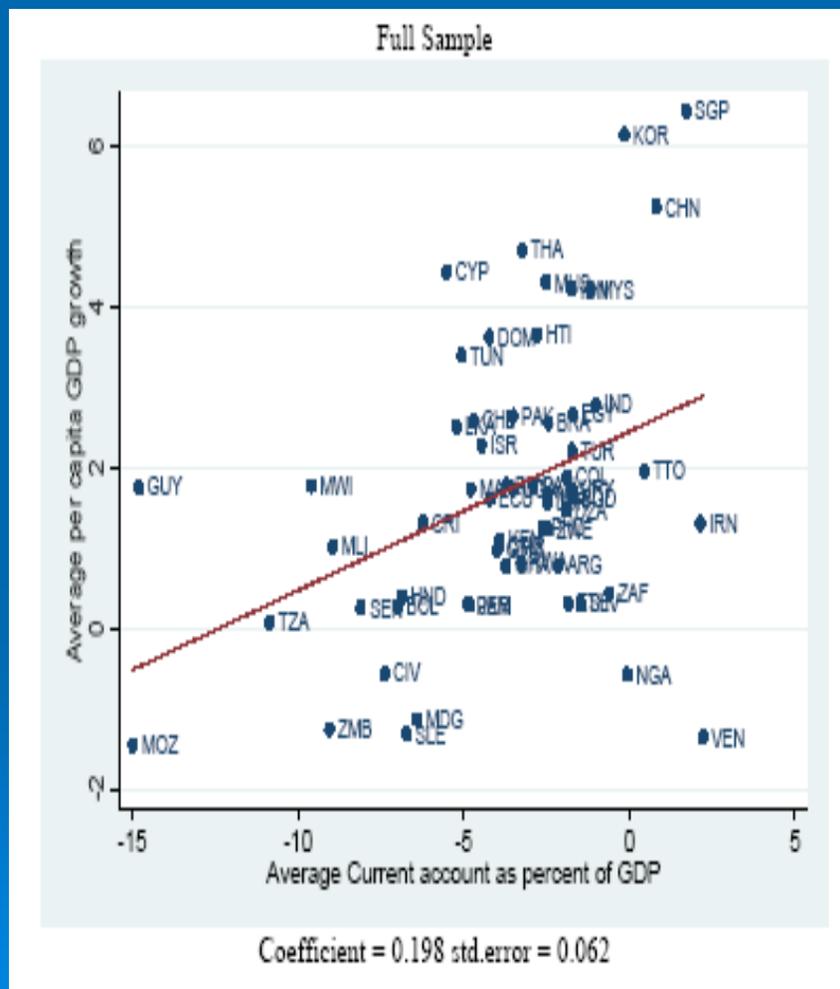# Figure 9. Current Account Balance and Growth in Non-Industrial Countries 1970-2000: Unconditional Relationship

Full Sample

Coefficient = 0.198 std.error = 0.062

Sample excluding countries with Aid/GDP > 0.10

Coefficient = .229 std. error = .145

The Evidence
1. Direction of Flows

➢ Lucas Paradox: Capital does not flow in requisite quantities to poor countries.

➢ Lucas Paradox-Plus: Capital travels "uphill" – from poor to rich countries

- Average incomes of countries exporting capital (running current account surpluses) has been falling while the average income of countries using capital (running current account deficits) has been rising.
  - This is not new
  - It is not just because of the U.S.
  - Pattern for FDI is different from overall flows, but is similar in most recent period.

Figure 3. Relative Income of Capital-Exporting and Capital-Importing Countries - Excluding the United States

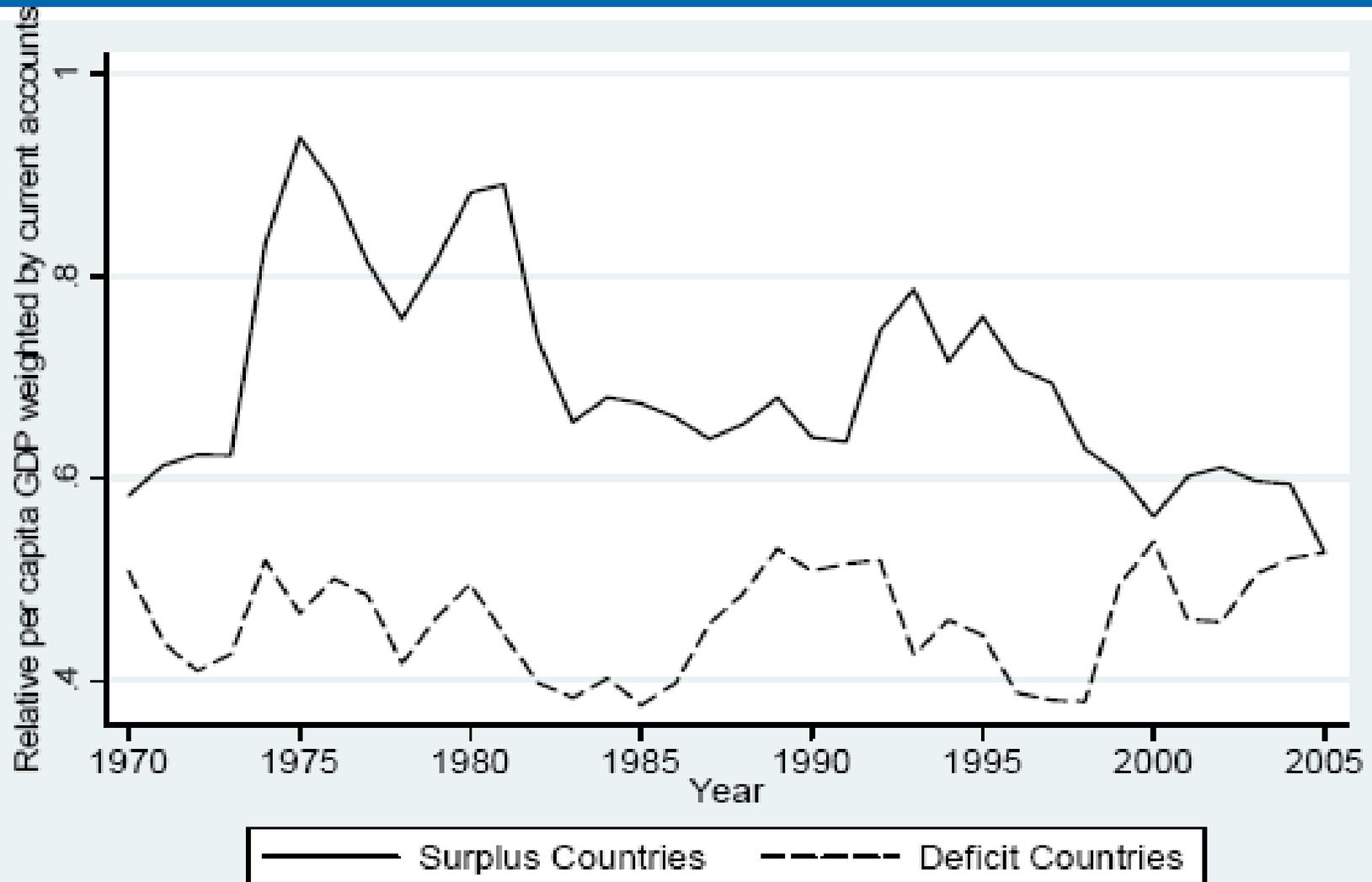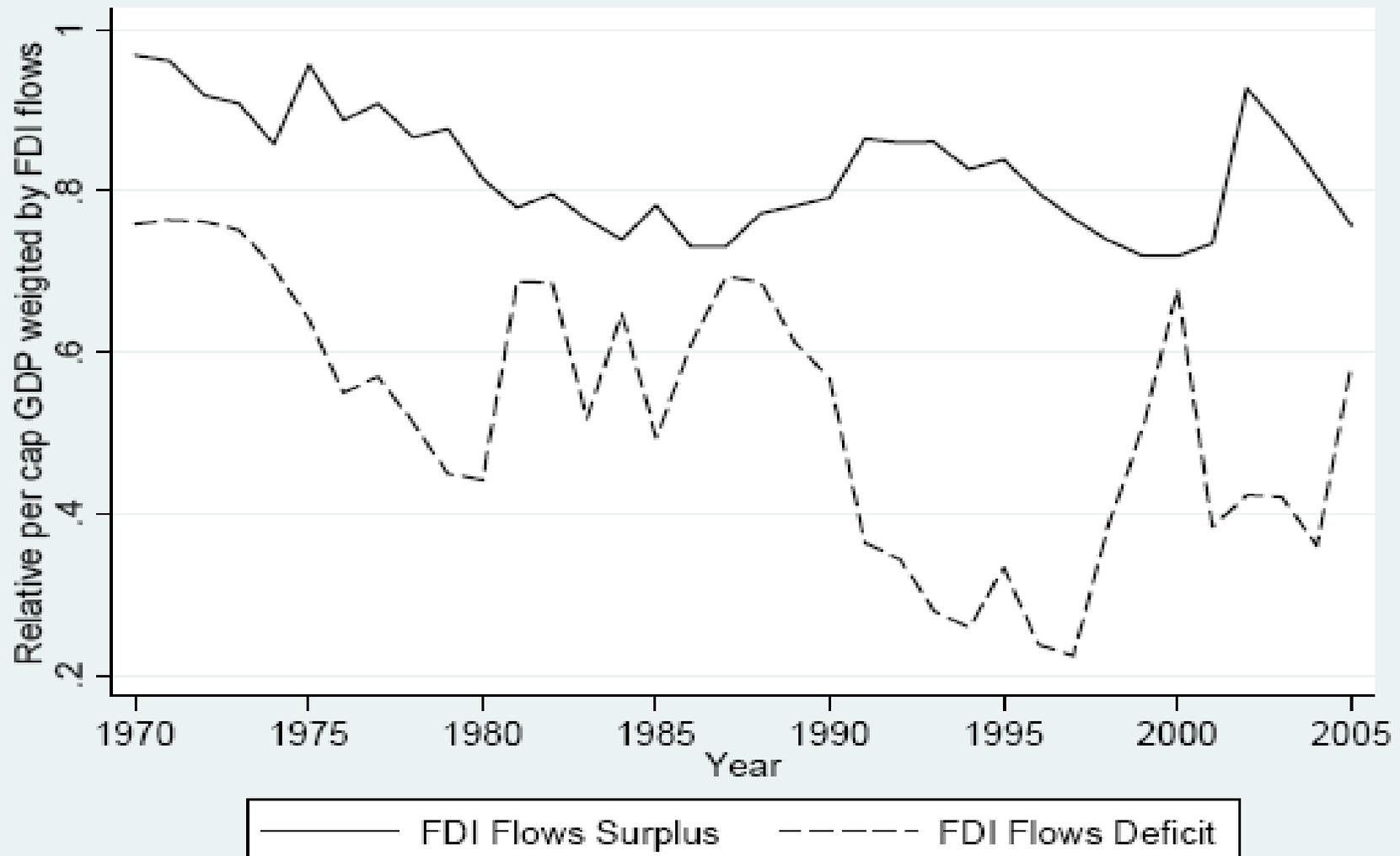Figure 4. Relative Income of Countries that are Net Exporters and Importers of FDI

Savings matter!

➢ Controlling for domestic savings eliminates the positive association between the current account and growth.

➢ Controlling for domestic investment does not.

➢ But why are domestic savings such an important correlate with growth in non-industrial countries (conditional on investment) but not in industrial countries?

Determinants of Overvaluation

➤ Dependent variable is overvaluation

Share of working age population	-2.46 *** (0.93)
Net FDI inflows/GDP	754.7*** (278.5)
Adjusted R-squared	0.34
Number of observations	60

Table 2 (2). Current Account Deficits and Growth: Cross-Section Regressions for Non-Industrial Countries

Dependent Variable: Average Real Per Capita GDP Growth 1970-2000

Current account/GDP	**0.098**	**
	(0.046)	
Initial income	-1.257	***
	(0.203)	
Initial life expectancy	0.032	*
	(0.024)	
Sachs-Warner Index	1.879	***
	(0.649)	
Fiscal balance/GDP	0.023	
	(0.044)	
Institutional quality	4.252	***
	(1.533)	
Adjusted R-squared	0.741	
Number of observations	60	

It's Savings Not Investment

Dependent Variable: Average Real Per Capita GDP Growth 1970-2000

Current account/GDP	0.098 **	-0.002	0.112 ***
	(0.046)	(0.062)	(0.044)
Savings/GDP		0.089 ***	
		(0.033)	
Investment/GDP			0.076 **
			(0.032)
Adjusted R-squared	0.741	0.773	0.758
Number of observations	60	60	60

Exogenous Savings

Current account/GDP	0.082*
	(0.048)
Share of Working age Population	0.15***
	(0.054)
Adjusted R-squared	0.790
Number of observations	60
Estimation	OLS

Robustness

- Holds for full sample of 61 non-industrial countries and within regions
- Holds when countries with aid/GDP>10 percent are dropped
- Holds for growth spurts cases
- Concern that we are picking up a time-series rather than cross-sectional result. But:
  - Holds for middle income countries
  - Holds for shorter period:1985-97 ("golden era" of financial globalization)
- Alternative measures of current accounts

Endogenous Savings Plus Financial Development

Dependent Variable: Average Real Per Capita GDP Growth 1970-2000

	Baseline specification (1)	Financial Development	
		Above median (2)	Below median (3)
Current account/GDP	0.098**	0.084	0.143*
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