CEE Growth & Development

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Lecture 13

Spring Term 2014

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Neoclassical assumptions insure simple explanation of economic growth

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- In addition, rule of diminishing returns of inputs insures that poor country has larger MP_k.

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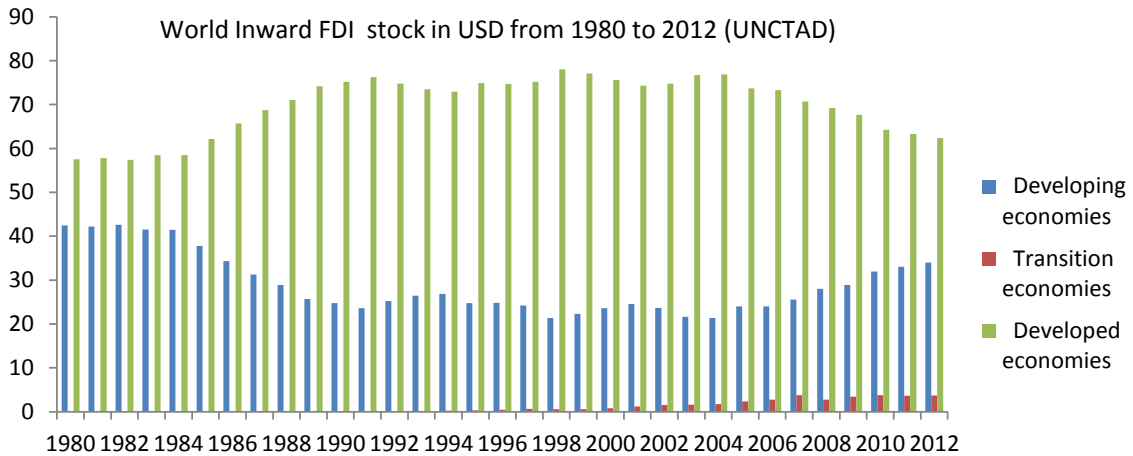
TE: How would you verify this argument in data?

Data illustration (UNCTAD)



Why doesnt capital move from rich to poor countries?(continued)

Example: $Y_{US} = 15$ times of Y_{India}

Where:

- Y is income per worker (Cob-Douglas)
- k is capital per worker
- Marginal product $MP_k = \alpha A k^{\alpha-1}$, and thus
- $r = \alpha A^{1/\alpha} y^{(\alpha-1)/\alpha}$

Why doesnt capital move from rich to poor countries? (continued)

Lets assume that:

- $\alpha = 0.4$ (Similar US and Indian capital shares)

Then, MP_k in India must be 58 times ($15^{1,5}$) the (MP_k) in the US. (!)

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These conclusions are not verified in the data. So, what is wrong with the model? What assumptions should be replaced? This is a central question for economic development.

Lucas (1990) offers three possible answers: I) Difference in Human Capital

Previous model ignores labor quality or human capital per worker.

- Krueger (1968) combines information on workers by level of education, age and sector and how these factors affect worker's productivity (relative wages)
- Estimates show that average worker in the US or Canada is five times more productive than Indian worker.

Lucas (1990) offers three possible answers: I) Difference in Human Capital (continued)

Using Krueger's finding, Lucas revises the model:

- y is then income per *effective* worker, then ratio of MP_k between US and India is $(15/5)^{1,5} = 5$

After the revision, five times difference in marginal return to capital is large enough to lead one to expect larger flows of capital to India of those we observe.

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In this case:

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Incorporating these factors in production function will significantly decrease differences between MP_k, but it will not eliminate them completely.

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The A-B relationship creates a pattern:

- I phase) goods flow from A to B
- II phase) goods from B flow to A forever.

For this pattern to continue there has to be constant reinforcement system where A continues to invest in B, otherwise the pattern stops once goods start flowing from B to A. Therefore A never starts lending.

Data illustration (Pogoda, 2012)

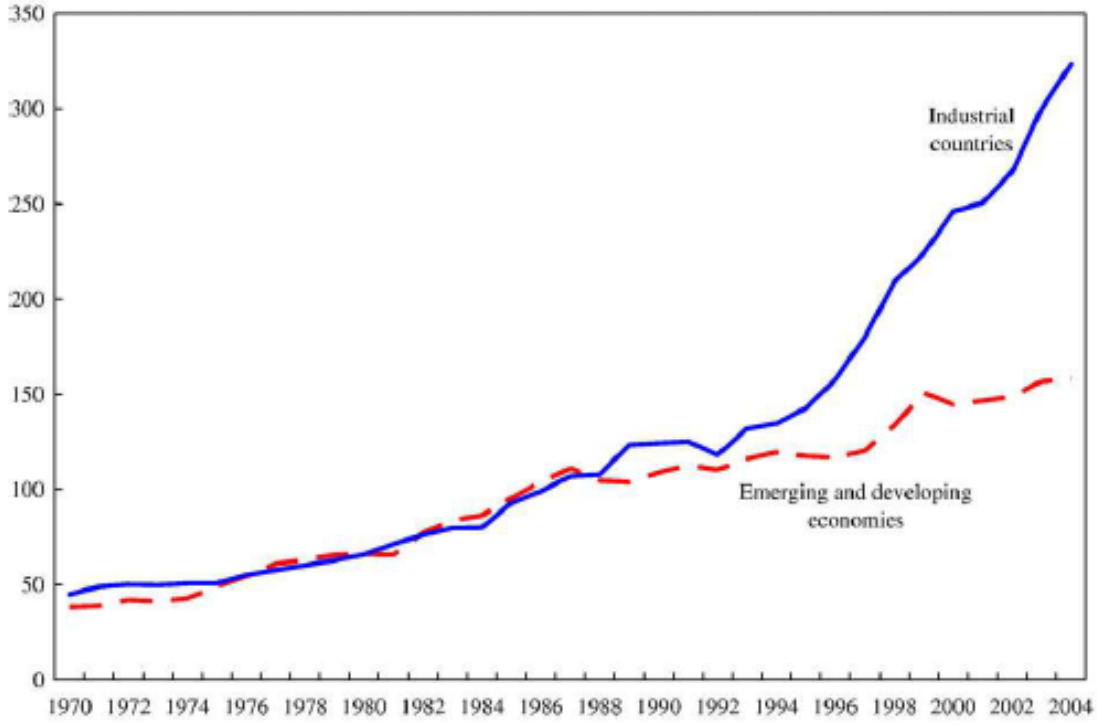

Figure 6: Ratio of sum of foreign assets and liabilities to GDP
Lane, Milesi-Ferretti, 2007

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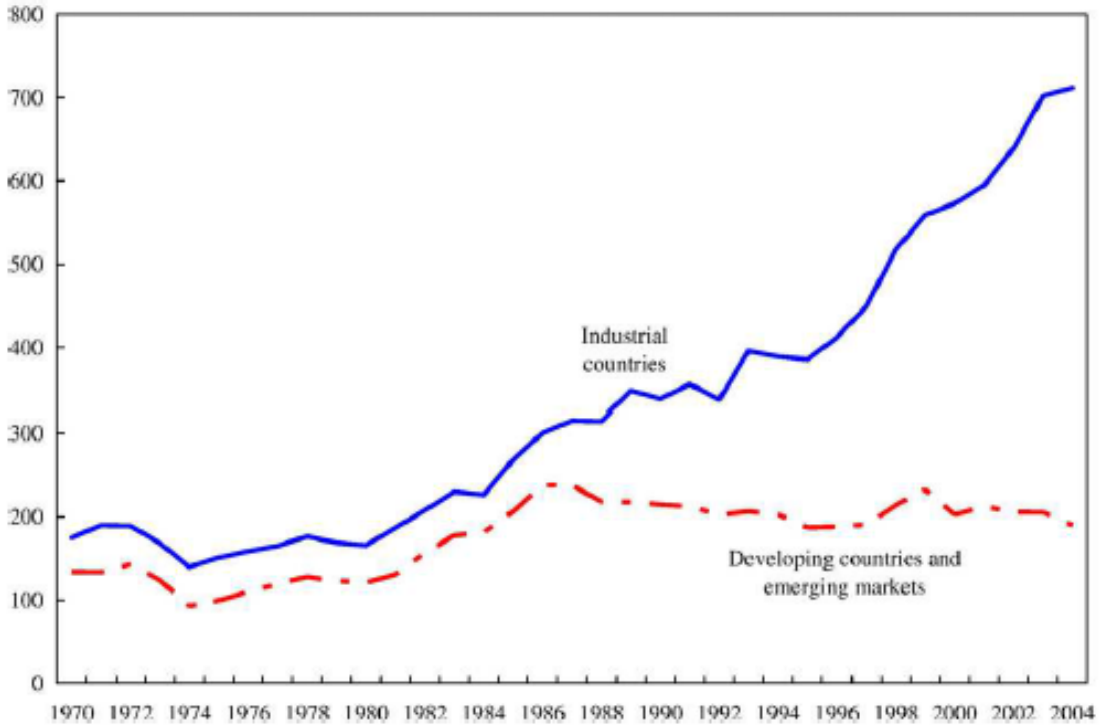

Figure 7: Sum of external assets and liabilities in percent of sum of exports imports
Lane, Milesi-Ferretti, 2007

Data illustration (Alfaro, 2008)

Table 6: OLS Regressions of Capital Inflows per capita II- IMF Flows Data

Dependent Variable is Average Capital Inflows per capita, 1970–2000

	Whole World (1)	Whole World (2)	Whole World (3)	Base Sample (4)	Base Sample (5)	Base Sample (6)	Base Sample (7)	Base Sample (8)
Log GDP per capita (PPP) in 1970	1.03*** (0.22)	0.99*** (0.17)	0.82*** (0.14)	1.14*** (0.24)	1.11*** (0.19)	0.91*** (0.16)	0.13 (0.18)	
Log GDP per capita (1996 $) in 1970								0.20 (0.15)
Average Institutional Quality, 1984–2000							0.65*** (0.15)	0.59*** (0.14)
Log Average Years of Schooling, 1970–2000	0.12 (0.16)			0.06 (0.18)			–0.10 (0.15)	–0.18 (0.19)
Log Average Distantness, 1970–2000		–0.68 (0.69)			–0.58 (0.72)		–0.29 (0.58)	–0.31 (0.60)
Average Restrictions to Capital Mobility, 1970–2000			–1.54*** (0.53)			–1.83*** (0.60)	–1.23*** (0.46)	–1.17*** (0.44)
R^2	0.39	0.38	0.42	0.39	0.40	0.45	0.55	0.55
Countries	92	98	97	81	81	81	81	81