

# Patterns of International Capital Flows and Their Implications for Developing Countries<sup>1</sup>

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<sup>1</sup>Nieminen, M. 2017. Patterns of International Capital Flows and Their Implications for Developing Countries. UNU-WIDER Working Paper 2017/171.

## Description of the paper

This paper is *a review* which attempts to

- present *stylized facts* on the recent patterns of international capital flows and
  - put them in *a historical perspective*
  - summarize *potential explanations* for them
  - discuss their possible *implications* for developing countries

## Motivation for the paper

- Few phenomena have had such a huge impact on the global economic landscape as financial globalization (i.e. the rise of cross-border capital flows).

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<sup>1</sup>Lucas, R. E. Jr. 1990. Why doesn't capital flow from rich to poor countries? *American Economic Review, Paper and Proceedings* 80 (2), 92–96.

<sup>2</sup>Gourinchas, P-O, Jeanne, O. 2013. Capital flows to developing countries: the allocation puzzle. *Review of Economic Studies* 80 (4), 1484–1515.

## Motivation for the paper

- Few phenomena have had such a huge impact on the global economic landscape as financial globalization (i.e. the rise of cross-border capital flows).
- Standard economic theory: capital should flow from rich capital-abundant countries to poor capital-scarce countries.
- Reality:
  - Little capital has flowed to poor countries (Lucas paradox)<sup>1</sup>.
  - Negative correlation between capital inflow and productivity growth across developing countries (allocation puzzle)<sup>2</sup>.

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## The size of net capital flows

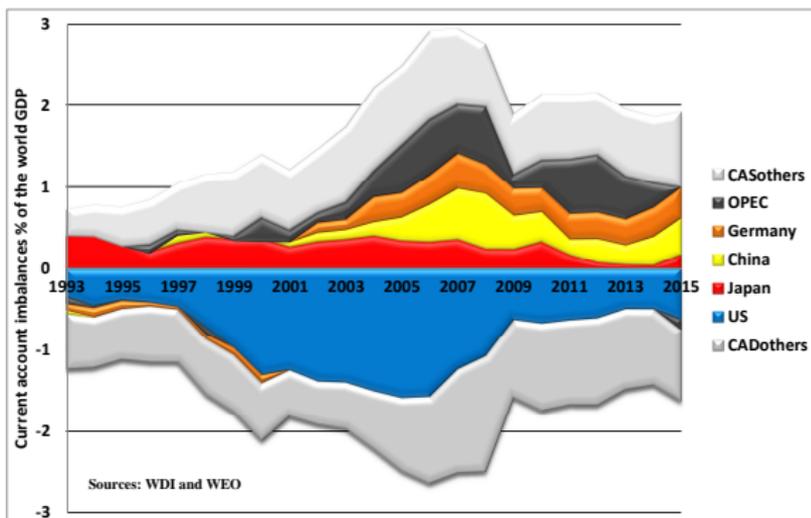


Figure: Global current account imbalances, 1993-2015

### Stylized fact 1

Global current account imbalances peaked in 2007. The U.S. has been the major capital importer.

## The direction of net capital flows

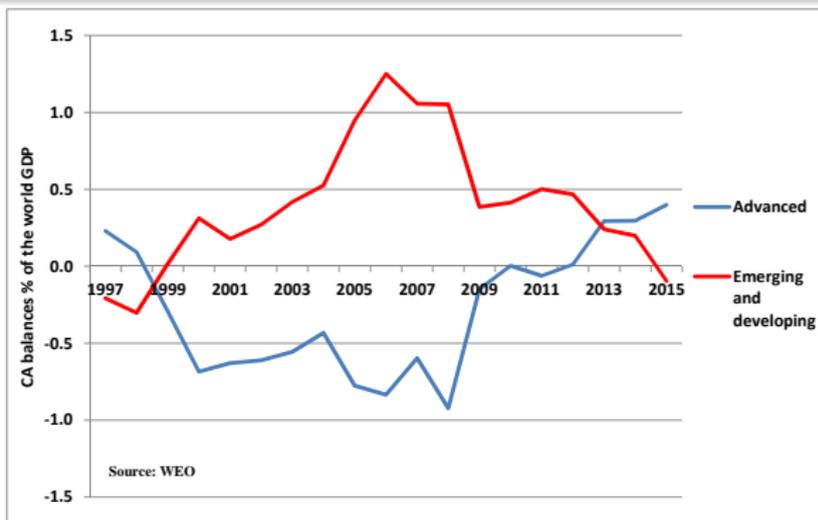
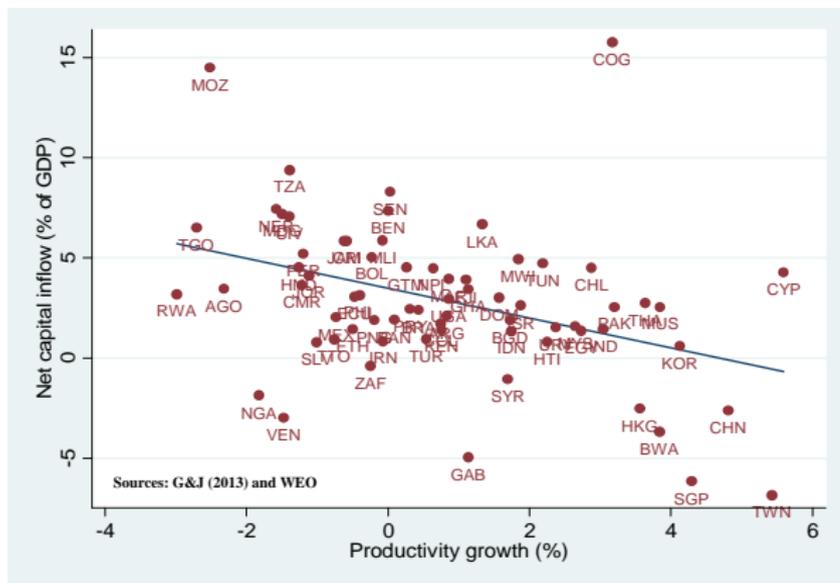


Figure: Current account balances, 1997-2015

### Stylized fact 2

During the first decade of the 21st century, capital flowed uphill from emerging market and developing economies to advanced economies. Since 2013 this flow has dried up.

## The allocation of net capital inflows across developing countries

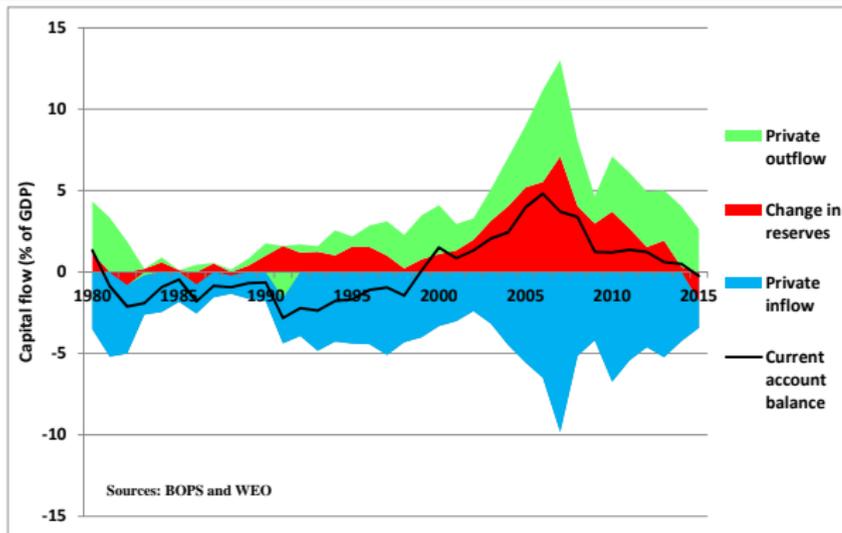


**Figure:** Average productivity growth and average net capital inflow for 68 developing countries between 1980-2000

### Stylized fact 3

There has been a negative correlation, if any, between net capital inflow and productivity growth across developing countries.

## Gross capital flows

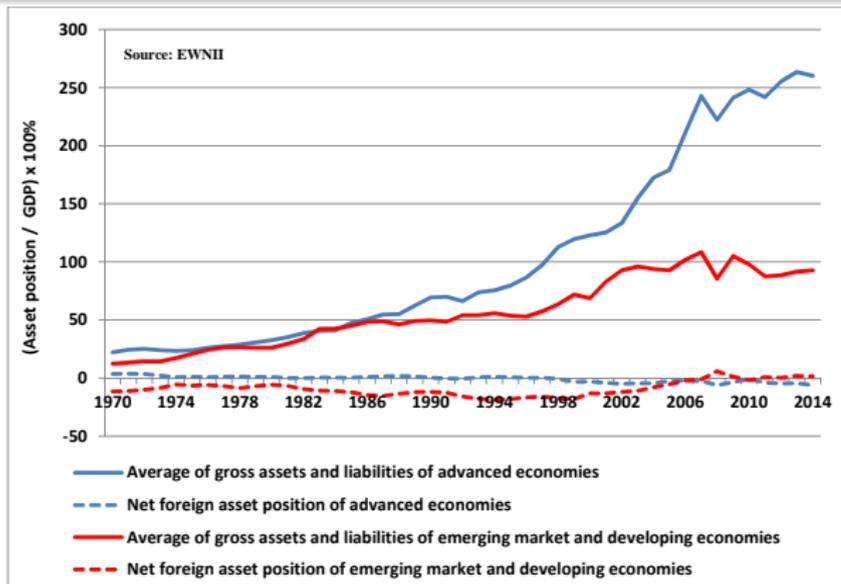


**Figure:** Private capital inflow, private capital outflow and change in reserves for emerging market and developing economies, 1980-2015

### Stylized fact 4

During the first decade of the 21st century, the net capital flow between emerging market and developing economies and advanced economies was dominated by the reserve accumulation by central banks in emerging market and developing economies (especially China).

## Gross foreign assets and liabilities and net foreign asset positions

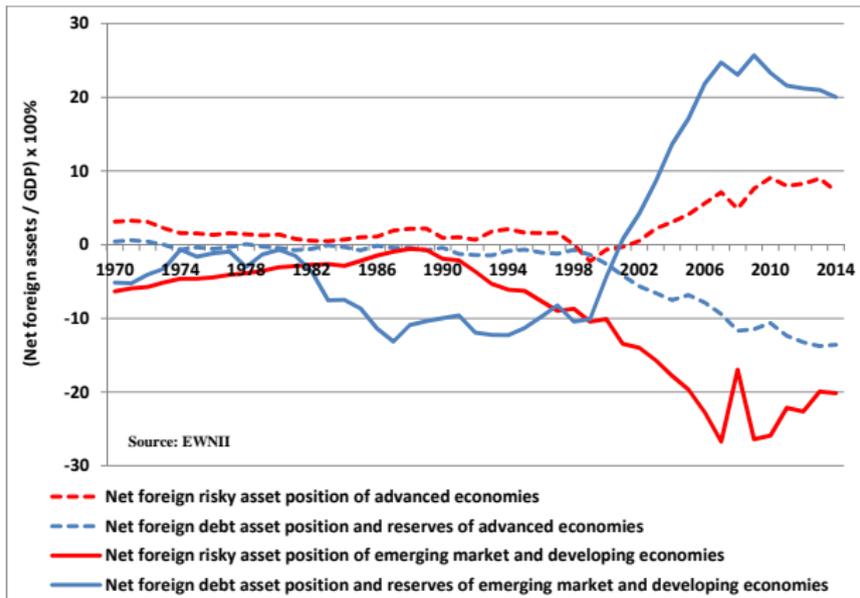


**Figure:** Average of gross foreign assets and liabilities and net foreign asset positions, 1970-2014

### Stylized fact 5

Gross foreign assets and liabilities are much larger than net foreign asset positions or net capital flows. This is also true for emerging market and developing economies although in these countries the increase in gross foreign assets and liabilities has not been as massive as in advanced economies.

## Composition of external balance sheets



### Stylized fact 6

On aggregate level, the net foreign assets position of developing countries is close to zero, but the composition of their external assets and liabilities differ quite a bit. They have a positive net international investment position in debt assets and foreign exchange reserves but a negative net position in risky assets.

## Comparison of the current period (1973 onwards) with the first period of financial globalization (1870-1914)

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<sup>1</sup>They consider both quantity and price indicators on globalization in capital markets. See Obstfeld, M., Taylor, A. M. 2004. Global capital markets: integration, crisis, and growth. Cambridge University Press, New York (NY).

## Comparison of the current period (1973 onwards) with the first period of financial globalization (1870-1914)

### Similarities:

- According to Obstfeld and Taylor (2004)<sup>1</sup>, the current degree of international capital mobility is comparable to the degree that existed in 1914.

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### Differences:

- 1 During the pre-1914 period the size of global current account imbalances was larger.
- 2 During the pre-1914 period the most dominant country was the major capital exporter, whereas now the most dominant country is the major capital importer.
- 3 During the pre-1914 period the relative size of gross foreign assets and liabilities to net capital flows was much smaller.

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### In sum:

- A shift from “development finance” to “diversification finance”.

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# Lucas paradox and the assumptions of the neoclassical growth theory

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<sup>1</sup>Caselli and Feyrer [Quarterly Journal of Economics 122 (2) (2007)] construct a measure for MPK by calculating the share of capital income of total income and the value of total capital stock. Their main finding is that MPKs are essentially equalized across countries.

## Lucas paradox and the assumptions of the neoclassical growth theory

- Standard economic theory with some simplifying assumptions proposes that there should be one-way capital flow from rich capital-abundant countries to poor capital-scarce countries.

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## Lucas paradox and the assumptions of the neoclassical growth theory

- Standard economic theory with some simplifying assumptions proposes that there should be one-way capital flow from rich capital-abundant countries to poor capital-scarce countries.
- However, if we take into account that rich countries are rich partly because compared to poor countries they have both
  - more human capital
  - a higher level of technology

the hypothesis that marginal product of capital (MPK) is higher in poorer countries than in rich countries might not hold true anymore.<sup>1</sup>

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## Financial integration and financial development

What are the consequences of financial integration (i.e. international capital mobility)?

- Financial integration implies that the riskless interest rates will be equalized.
- Will also the marginal products of capital be equalized?

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<sup>1</sup>Mendoza, E., Quadrini, V. and Ríos-Rull, J.-V. 2009. Financial integration, financial development and global imbalances. *Journal of Political Economy* 117 (3), 371–416.

## Financial integration and financial development

What are the consequences of financial integration (i.e. international capital mobility)?

- Financial integration implies that the riskless interest rates will be equalized.
- Will also the marginal products of capital be equalized?
  - Due to the capital market imperfections and heterogeneity in financial development, marginal products of capital will not be equalized.

"In short, financial integration was a global phenomenon, but financial development was not." (Mendoza et al. 2009, p. 372)<sup>1</sup>

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## Heterogeneity in financial development

- There is a vast theoretical literature that considers differences in financial development as the main driver of global current account imbalances.<sup>1</sup>
  - In sum, these theoretical papers suggest that capital market imperfections and heterogeneity in financial development are central to explaining stylized facts 1, 2 and 6.

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<sup>1</sup>Gertler, M. and Rogoff, K. 1990. North-South lending and endogenous domestic capital market inefficiencies. *Journal of Monetary Economics*; Caballero, R., Farhi, E. and Gourinchas, P.-O. 2008. An equilibrium model of "global imbalances" and low interest rates. *American Economic Review*; Mendoza, E., Quadrini, V. and Ríos-Rull, J.-V. 2009. Financial integration, financial development and global imbalances. *Journal of Political Economy*; Angeletos, G.-M., Panousi, V. 2011. Financial integration, entrepreneurial risk and global dynamics. *Journal of Economic Theory*; Benhima, K. 2013. Financial integration, capital misallocation and global imbalances. *Journal of International Money and Finance*; von Hagen, J., Zhang, H. 2014. Financial development, international capital flows, and aggregate output. *Journal of Development Economics*.

<sup>2</sup>Alfaro, L., Kalemli-Ozcan, S., Volosovych, V. 2008. Why doesn't capital flow from rich to poor countries? An empirical investigation. *The Review of Economics and Statistics*; Papaioannou, E. 2009. What drives international financial flows? Politics, institutions and other determinants. *Journal of Development Economics*; Forbes, K. J. 2010. Why do foreigners invest in the United States? *Journal of International Economics*; Vermeulen, R., de Haan, J. 2014. Net foreign asset (com)position: Does financial development matter? *Journal of International Money and Finance*.

<sup>3</sup>Azémar, C., Desbordes, R. 2013. Has the Lucas Paradox been fully explained? *Economics Letters*; Göktan, M. G. 2015. On the explanations of the Lucas Paradox. *Economics Letters*.

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  - In sum, these theoretical papers suggest that capital market imperfections and heterogeneity in financial development are central to explaining stylized facts 1, 2 and 6.
- Several empirical studies support this view.<sup>2</sup>
  - The question of whether or not the recognition of differences in financial development fully explains the Lucas paradox is open to dispute.<sup>3</sup>

<sup>1</sup>Gertler, M. and Rogoff, K. 1990. North-South lending and endogenous domestic capital market inefficiencies. *Journal of Monetary Economics*; Caballero, R., Farhi, E. and Gourinchas, P.-O. 2008. An equilibrium model of "global imbalances" and low interest rates. *American Economic Review*; Mendoza, E., Quadrini, V. and Ríos-Rull, J.-V. 2009. Financial integration, financial development and global imbalances. *Journal of Political Economy*; Angeletos, G.-M., Panousi, V. 2011. Financial integration, entrepreneurial risk and global dynamics. *Journal of Economic Theory*; Benhima, K. 2013. Financial integration, capital misallocation and global imbalances. *Journal of International Money and Finance*; von Hagen, J., Zhang, H. 2014. Financial development, international capital flows, and aggregate output. *Journal of Development Economics*.

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## Allocation puzzle and reserve accumulation

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## Allocation puzzle and reserve accumulation

- Aguiar and Amador (2011)<sup>1</sup> were *the first ones* to show that the allocation puzzle (i.e. the negative relationship between net capital inflow and productivity growth across developing countries) is driven by the net foreign asset position of the public sector.

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- Gourinchas and Jeanne (2013)<sup>2</sup> confirm the importance of public flows for the allocation puzzle and note that in actuality, it is *international reserves* which dominate.

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- Alfaro et al. (2014)<sup>3</sup> find that the relation between net capital inflow and productivity growth is *sample-specific* and confirm that private and public flows behave differently. They show that when sovereign-to-sovereign flows (i.e. public and publicly guaranteed debt from official creditors, official aid grants, and the IMF credit, net of reserves) are subtracted from the total, net capital inflows are on average *positively* correlated with productivity growth.

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These observations raise at least two questions:

- ① What are the motives for reserve accumulation?
- ② Why do private flows not offset the effect of these public flows?

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## Why have developing countries been stockpiling international reserves?

The following three motives for reserve accumulation are often mentioned<sup>1</sup>:

- Precautionary saving motive (e.g. as a result of the Asian financial crisis)
- Mercantilist motive (export-led growth supported by undervalued currency)
- Exchange rate stabilization motive (relatively inflexible exchange rate regimes have remained very important)

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<sup>1</sup>See, e.g., Aizenman, J., Lee, J. 2007. International reserves: precautionary versus mercantilist view, theory and evidence. *Open Economies Review*; Aizenman, J., Cheung, Y-W, Ito, H. 2015. International reserves before and after the global crisis: is there no end to hoarding? *Journal of International Money and Finance*; Ghosh, A. R., Ostry, J. D., Tsangarides, C. G. 2016. Shifting motives: explaining the buildup in official reserves in emerging markets since the 1980s. *IMF Economic Review*; Ilzetzki, E, Reinhart, C. M., Rogoff, K. S. 2017. Exchange arrangements entering the 21st century: Which anchor will hold? NBER Working Paper No. 23134. 

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However, the reasons for the average rise in EME reserves or the dispersion among them are not fully understood. This is not to say that reserve accumulation would not be rational behavior.

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## Why do private flows not offset the effect of public flows?

- Choi and Taylor (2017)<sup>1</sup> document that the effects of reserve accumulation on real exchange rates are different from that of private assets and that capital controls are behind this difference.
  - In financially open economies the effect of reserve accumulation on the real exchange rate is close to zero whereas in financially closed economies it is negative (i.e. reserve accumulation is associated with real exchange rate depreciation).

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Implication: Private flows do not offset the effect of public flows because capital controls prevent this from happening.

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## Lucas paradox and capital account restrictions

- Reinhardt, Ricci and Tressel (2013)<sup>1</sup> argue that capital account restrictions solve the Lucas paradox.

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<sup>1</sup>Reinhardt, D., Ricci, L. A., Tressel, T. 2013. International capital flows and development: financial openness matters. *Journal of International Economics* 91 (2), 235–251.

## Lucas paradox and capital account restrictions

- Reinhardt, Ricci and Tressel (2013)<sup>1</sup> argue that capital account restrictions solve the Lucas paradox.
  - In countries with no capital account restrictions there is a positive correlation between the net capital outflow and GDP per capita.
  - The study confirms the prediction of the standard neoclassical theory.

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<sup>1</sup>Reinhardt, D., Ricci, L. A., Tressel, T. 2013. International capital flows and development: financial openness matters. *Journal of International Economics* 91 (2), 235–251.

## Is the Lucas paradox really a paradox?

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- 2 Capital market imperfections and heterogeneity in financial development explain why capital tends to flow from poor to rich countries and why developing countries are short in risky assets.

## Is the Lucas paradox really a paradox?

- 1 Marginal product of capital is not necessarily higher in poor capital-scarce countries.
- 2 Capital market imperfections and heterogeneity in financial development explain why capital tends to flow from poor to rich countries and why developing countries are short in risky assets.
- 3 Combination of mercantilist, precautionary and exchange rate stabilization motives (i.e. motives other than seeking the highest return) have contributed to reserve accumulation in developing countries which explains why capital has flowed from poor to rich countries and why these countries are long in non-risky assets.

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- 4 Capital controls have prevented private flows from offsetting the effect of reserve accumulation.

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- 4 Capital controls have prevented private flows from offsetting the effect of reserve accumulation.

⇒ Perhaps the Lucas paradox is not a paradox after all.

# What are the possible implications of these developments for developing countries?

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<sup>1</sup>This implies neither that foreign aid is not needed nor that capital controls are always bad.

<sup>2</sup>Hausmann, R., Panizza, U. 2011. Redemption or abstinence? Original sin, currency mismatches and counter cyclical policies in the new millennium. *Journal of Globalization and Development* 2 (1), Article 4. 

## What are the possible implications of these developments for developing countries?

- 1 There is no such thing as the Lucas *paradox*.
  - 2 There is a positive correlation between private capital inflow and productivity growth (no allocation puzzle).
- ⇒ As developing countries progress in financial development, they should receive more private capital unless capital controls prevent this from happening.<sup>1</sup>

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- ⇒ As developing countries progress in financial development, they should receive more private capital unless capital controls prevent this from happening.<sup>1</sup>
- 1 Gross foreign assets and liabilities are nowadays much larger than net foreign asset positions or net capital flows. This is also true for emerging market and developing economies.
  - 2 Most developing countries are still not able to borrow in their domestic currency (the so-called original sin) (Hausmann and Panizza 2011)<sup>2</sup>.
- ⇒ Valuation changes, for example, due to a devaluation of domestic currency, may have larger deterioration effects on their net foreign asset positions than ever before.

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## Economic growth and foreign capital

- In terms of economic development it would seem desirable that savings from rich countries would finance much-needed investments in poor countries.

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<sup>2</sup>Furceri, D., Loungani, P. 2015. Capital account liberalization and inequality. *IMF Working Paper WP/15/243*.

<sup>3</sup>See "The IMF's approach to capital account liberalization: evaluation report" for an evaluation on the IMF's approach to capital account liberalization.

<sup>4</sup>International Monetary Fund. 2012. The liberalization and management of capital flows: an institutional view.

## Economic growth and foreign capital

- In terms of economic development it would seem desirable that savings from rich countries would finance much-needed investments in poor countries.
- However, the empirical evidence on the relationship between economic growth and foreign capital is mixed.<sup>1</sup>

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- However, the empirical evidence on the relationship between economic growth and foreign capital is mixed.<sup>1</sup>
  - The effects of financial liberalization on economic growth depend on country-specific circumstances.

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<sup>1</sup>see, e.g., Henry. 2007. Capital account liberalization: theory, evidence, and speculation. *Journal of Economic Literature*; Kose, Prasad, Rogoff, Wei. 2009. Financial globalization: a reappraisal. *IMF Staff Papers*; Obstfeld. 2009. *International finance and growth in developing countries: what have we learned?* NBER WP

<sup>2</sup>Furceri, D., Loungani, P. 2015. Capital account liberalization and inequality. *IMF Working Paper WP/15/243*.

<sup>3</sup>See "The IMF's approach to capital account liberalization: evaluation report" for an evaluation on the IMF's approach to capital account liberalization.

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  - Hence, it is not surprising that there is hardly any consensus on the merits of financial globalization.

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  - Hence, it is not surprising that there is hardly any consensus on the merits of financial globalization.
  - Traditionally IMF has promoted capital account liberalizations.<sup>3</sup> More recently, however, the IMF has adopted a more cautious view and supports the use of capital controls (or “capital flow management measures”) in certain circumstances (see International Monetary Fund (2012)<sup>4</sup>).

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