

International Capital Mobility in the 21st Century –

MIND THE GAPS

Joshua Aizenman

USC & NBER

Capital Flows to CESEE: Impact on Macro-Financial Stability and Policy Responses

November 4, 2016

Oesterreichische Nationalbank, Vienna



- I. **Overview of Global Developments 1970 –**
- II. **Overview of the challenges facing CESEE**

Key points:

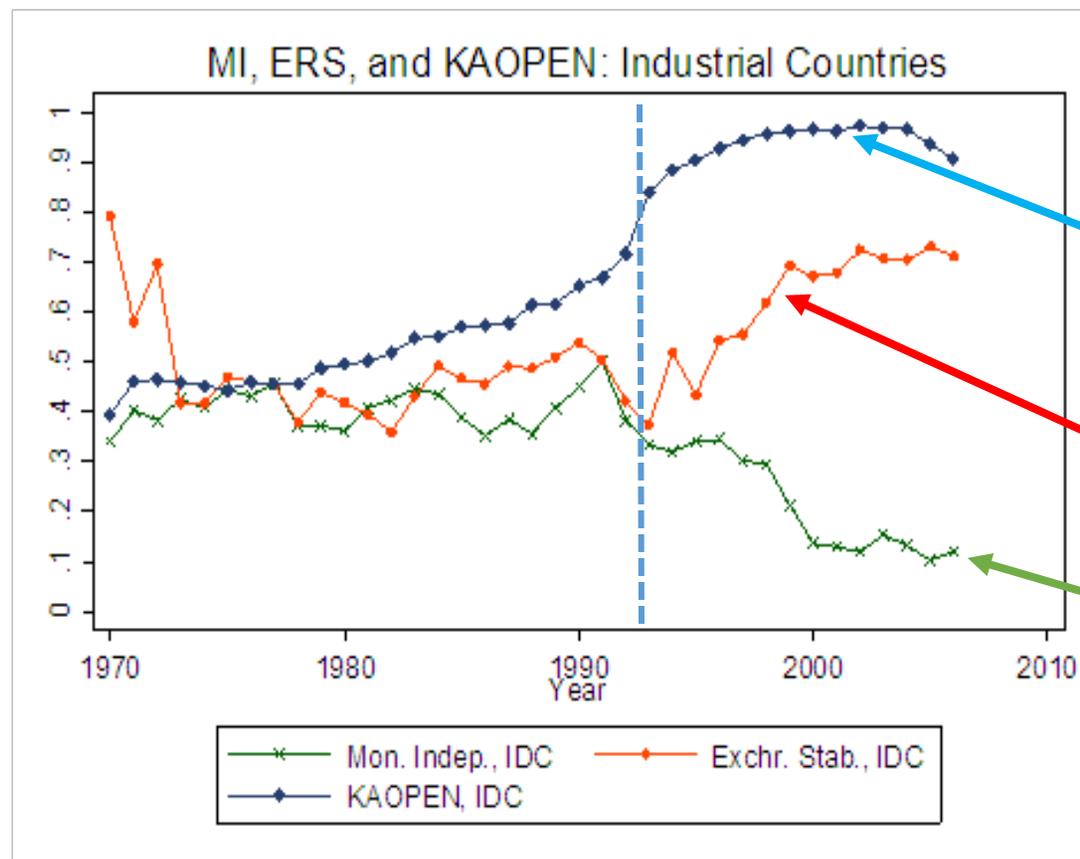
- The pre-GFC literature identified conditions under-which the gains from financial globalization are small. With pre-existing distortions, the net gain may be negative.
- The gains of financial liberalization of emerging markets tend to be front loaded, the costs are hidden and rising with the build-up of balance sheet vulnerabilities, until a financial crisis reveals them.
- Yet, deeper trade globalization induces, with a lag, deeper financial globalization.
- Leverage cycles generate excessive risk taking, deep and longer booms, triggering down the road prolonged balance-sheet recessions.

The GFC illustrated the risk of under regulated financial flows

1. Foreign currency over-borrowing in the presence of sovereign and exchange rate risks.
2. The 'too big to fail' concern induces moral hazard, where private risks are socialized, leading to public debt overhang that saddles the tax payer with underfunded liabilities, reducing growth.
3. Beware of balance sheet and maturity mismatches associated with debt instruments.
4. Under regulated hard-currency borrowing and deteriorating current accounts increase exposure to the risk of sudden-stop and capital flight crises, inducing financial / banking / exchange rate pressure crises, and prolonged balance-sheet recessions.
5. Prudential regulations may reduce the adverse effects of financial openness, though their net impact depends on the quality of regulations, institutions, governance, and may be diluted overtime due to arbitrage forces.

The history of financial openness, monetary and exchange rate policies is summarized in the following Trilemma charts:

The collapse of the BW system led to rapid increase in financial openness of Industrialized-countries (IDC) during the 1970s-1990s.

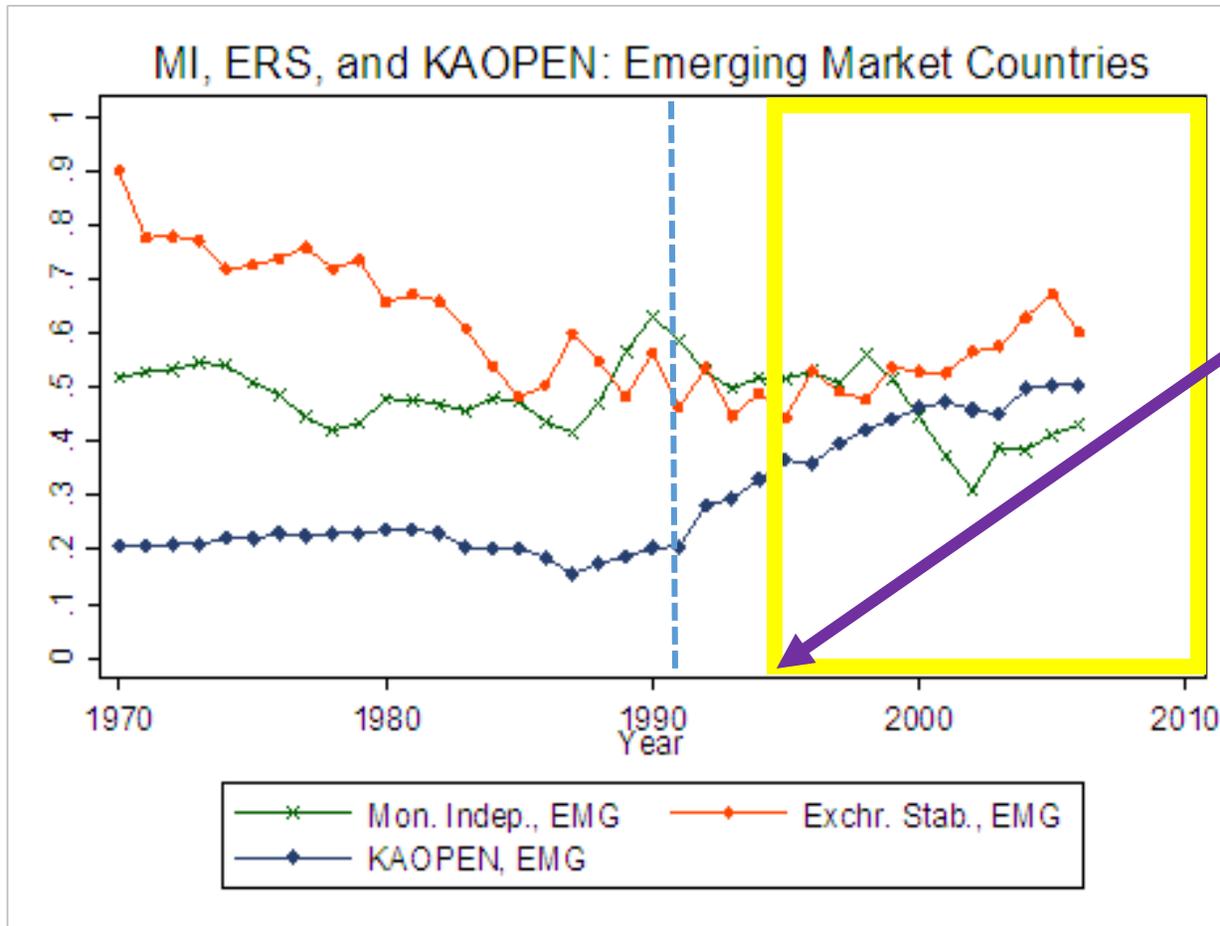


The 3 trilemma variables are normalized between 0 and 1; **KAOPEN** 1 = the absence of controls on financial flows, 0 = financial autarky. **Exchr. Stab.** = exchange rate stability. 1 = fixed 0 = pure float. **Mon. Indep.** 1 = full monetary independence, 0 = no independent monetary policy

Figure 1A

Source: Aizenman, Chinn, Ito http://web.pdx.edu/~ito/trilemma_indexes.htm
http://econbrowser.com/archives/2009/04/guest_blog_the_1

EMs increased overtime their exchange rate flexibility, embarked on greater but controlled financial integration in the 1990s, and by the 2000s converged to the middle ground of the Trilemma



EMs financial linearization in 1990s triggered sudden stop crises, Mexico, E.A., RU, BR, AR, TR, ...

The GFC & the euro crisis showed that all countries are vulnerable to 'sudden stops'

Figure 1B

Developing non EMs countries lagged these trends.

MI, ERS, and KAOPEN: non-EMG Developing Countries

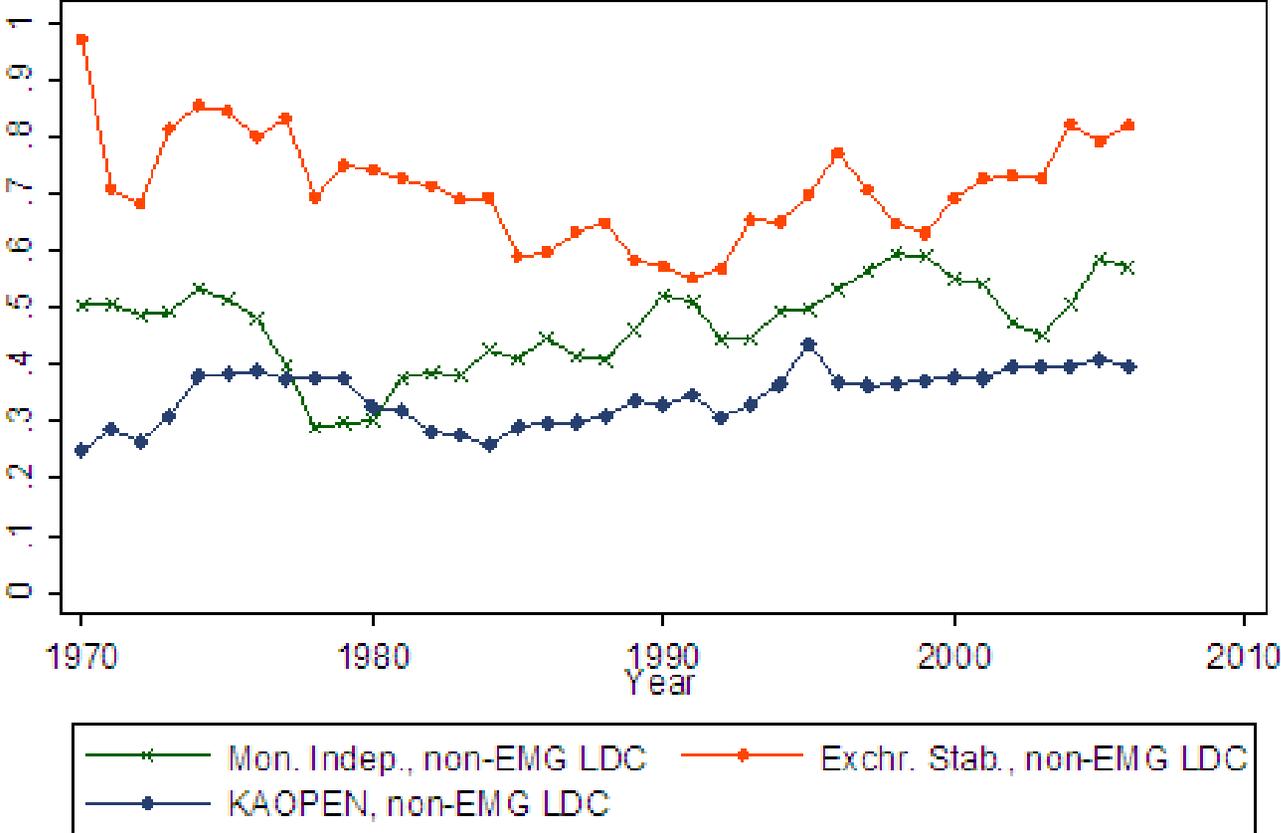
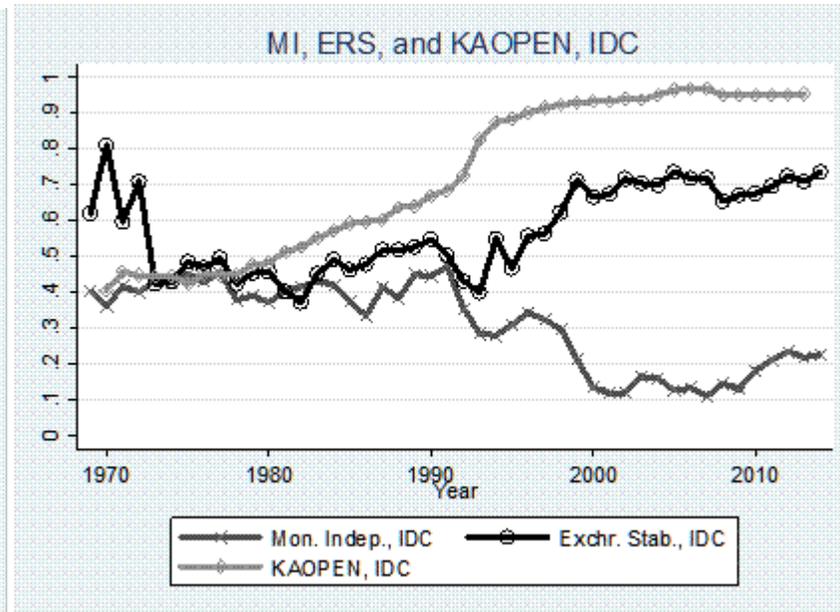
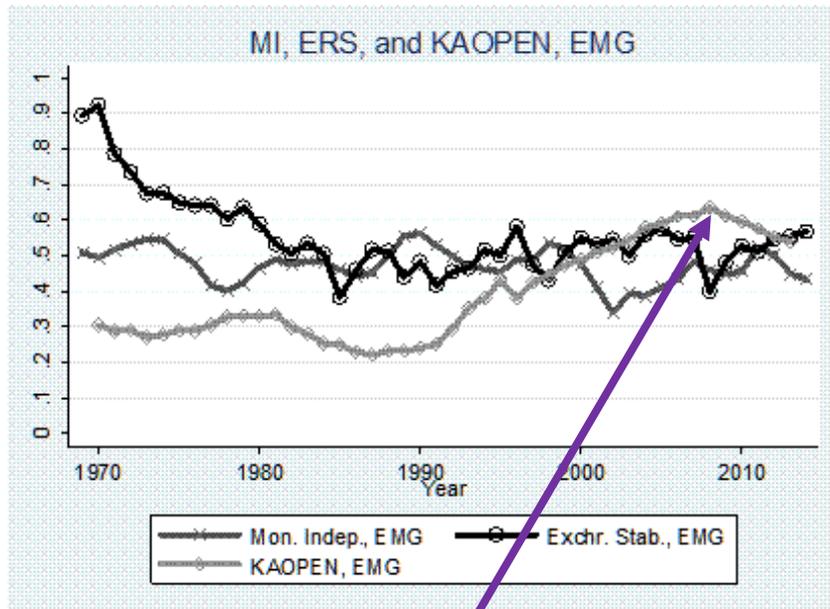


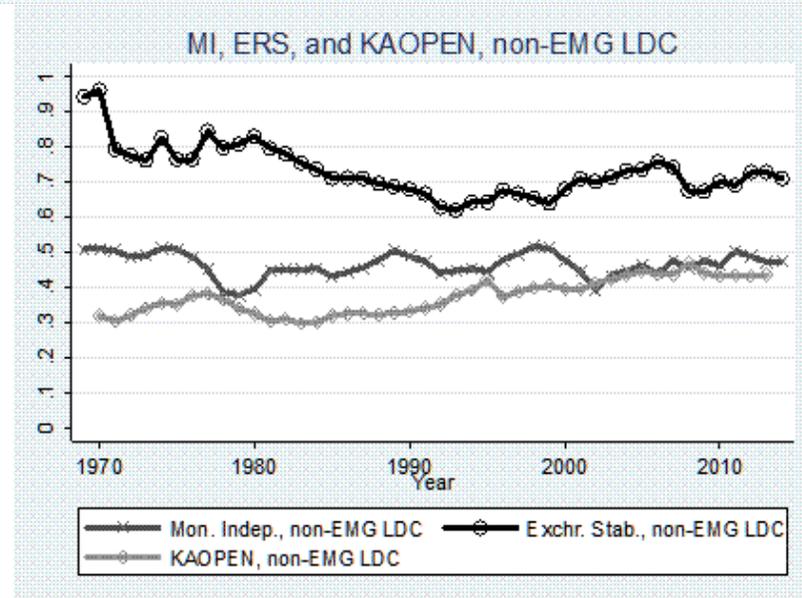
Figure 1C

The latest trends:



POST GFC: Retrenchments from financial globalization, Detected in EMs, to a lesser degree in IDC

Figure 2: 1970-2015

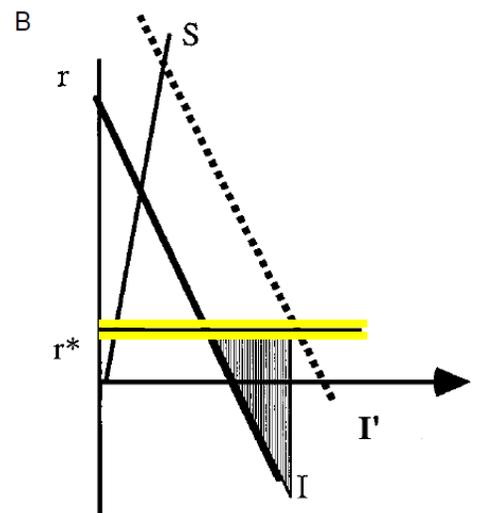
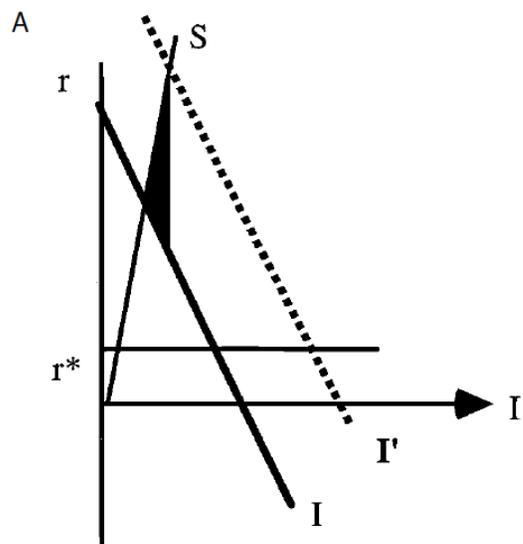


The debate about the gains from financial globalization and financial liberalization goes back to the 1990s [even earlier...].

- With pre-existing distortions, the sign of the welfare gains from financial liberalization are ambiguous, and may be small [the second best theorem of public finance].
- With financial integration, the gains are frequently front loaded, the costs are hidden, until a financial crisis reveals them.
- A possible mechanism is the build-up of hidden balance sheet vulnerabilities [hidden tail risk], revealed during a crisis [Rajan 2005].
- Moral hazard (M.H.) has been a prevalent distortion.
- M.H. arises when investors expect to be bailed out of bad investment by the taxpayers or other third parties [IMF, WB, CBs].

M.H. → taxpayers subsidize excessive risk taking:

Heads I win, Tails the Taxpayers Lose.



S and I, Financial autarky

S and I, Financial integration

M.H. shifts I to I' ; r^* = the global interest rate facing borrowers

Figure 3: Financial opening, moral hazard, and welfare

See McKinnon and Pill (1996); Corsetti, Pesenti, Roubini (1999); Hellmann, Murdock, and Stiglitz (2000), Aizenman (2004a)

With inelastic supply of saving, financial opening tends to reduce welfare in the presence of M.H. In financial autarky, domestic saving is a binding constraint. With globalization, the global supply of saving facing the economy is the binding constraint - see Iceland in the 2000s, Swiss Franc Mortgages in Poland, etc.

The Welfare Effect of Financial Opening	Explanation
Potentially large benefits	Financial opening may lead to large benefits stemming from better risk pooling, information collection, and maturity transformation, thereby providing deeper liquidity (Greenwood and Jovanovic 1990; Obstfeld 1994; Acemoglu and Zilibotti 1998).
Positive but small benefits from financial opening	Second-order magnitude gains from international diversification of output risk (Cole and Obstfeld 1991).
Ambiguous welfare effects	If production does involve learning by doing, opening capital markets does not necessarily improve welfare for the nation or for the world as a whole (Kohn and Marion 1992). Overborrowing due to moral hazard and euphoric expectations, leading to crises (McKinnon and Pill 1996; Corsetti, Pesenti, and Roubini 1999); overborrowing due to congestion externalities, where atomistic agents do not internalize the full effects of marginal borrowing on future welfare (Aizenman 1989); and overborrowing due to free-rider problems in economies short of international collateral, a condition generated by imperfections of the domestic capital market (Caballero and Krishnamurthy 2001). Emerging markets are more prone to financial crashes. This will be the case when financial market capitalization depends on the expectations of agents regarding aggregate investment in their economy. This gives rise to potential coordination failures, which may be exacerbated for low-income countries by financial globalization (Martin and Rey 2001).

The sudden stop crises of 1990s raised serious doubts about the welfare gains associated with financial integration of EMs.

- The welfare gains in switching from financial autarky to full capital mobility and financial integration in a calibrated neoclassical model equals about 1 % increase in domestic consumption for the typical non-OECD country [Gourinchas and Jeanne (2006, 2013)].
- Financial integration will have a significant impact on welfare only if it manages to close the gap between the *levels* of total factor productivity in poor and rich countries—which goes substantially beyond equalizing *growth rates* or the marginal returns to capital.
- Saving has been positively correlated with growth, to a degree that induced positive association between growth and current account surpluses/GDP. On average, 90% of the stock of capital in developing countries is self-financed. Hence, scarcity of saving has not been the obstacle preventing growth [Aizenman, Pinto, Radziwill (2007)].

- Even successful developing countries have limited absorptive capacity for foreign resources, either because their financial markets are underdeveloped, or because their economies are prone to overvaluation caused by rapid capital inflows. Prasad, Rajan, and Subramanian (2007).
- The strongest argument for financial opening may be the pragmatic one. Like it or not, greater trade integration erodes overtime the effectiveness of restrictions on capital mobility. Aizenman (2004b)
 - A frequent mechanism facilitating capital flight is trade mis-invoicing. The scale and ease of these activities is proportional to the commercial openness of the economy. Thus, greater trade openness increases the effective financial openness, providing more prevalent opportunities for illicit capital flows.

WEO Oct. 2008, chapter 6 provided the pre-crisis IMF position on capital mobility, reflecting conflicting views on capital mobility in EMs

“The divergent current account patterns in emerging Asia and Europe have revived the long-standing debate over the connection between economic development and capital flows—the Lucas paradox (Lucas, 1990).”

“In emerging Europe, the liberalization of the financial sector and the process of integration into the EU are the main drivers of the large current account deficits.”

“Based on past experience, the very lengthy deficit episodes in emerging Europe can be partly explained by high growth prospects, highly open capital accounts, financial liberalization, and high initial net foreign asset positions.”

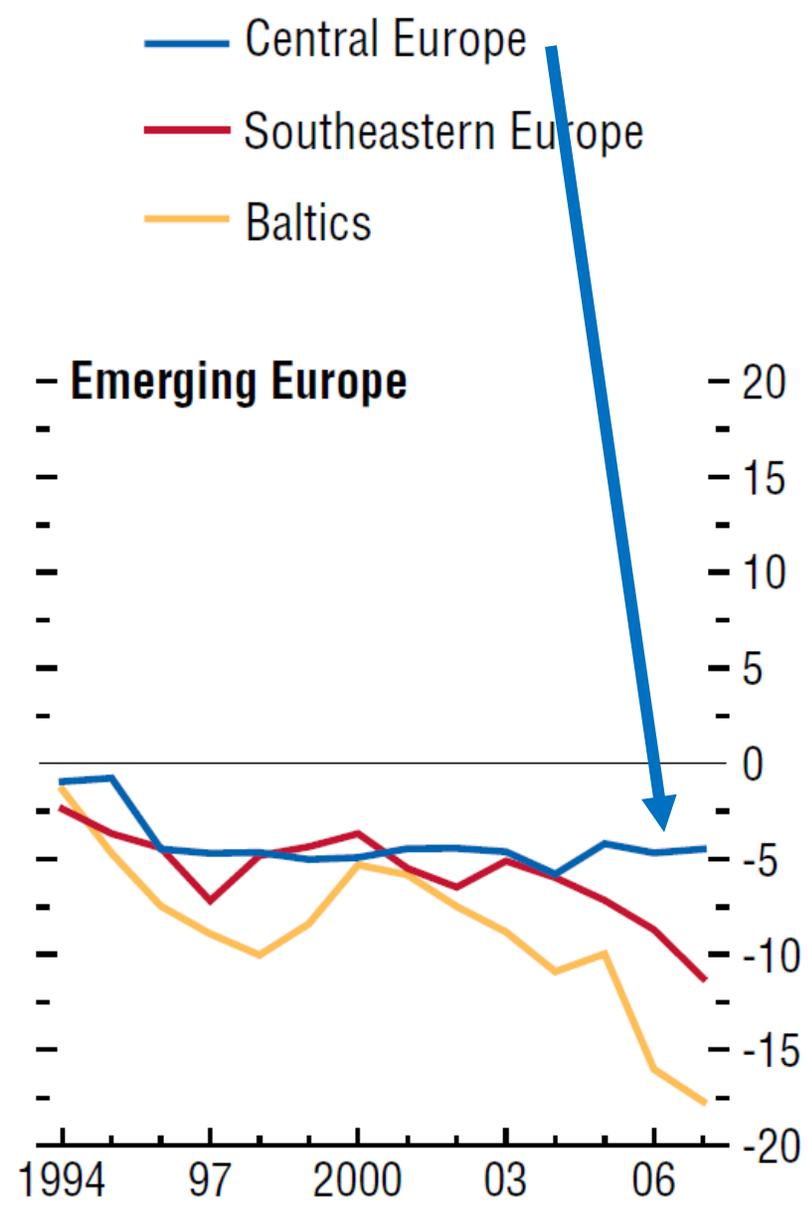
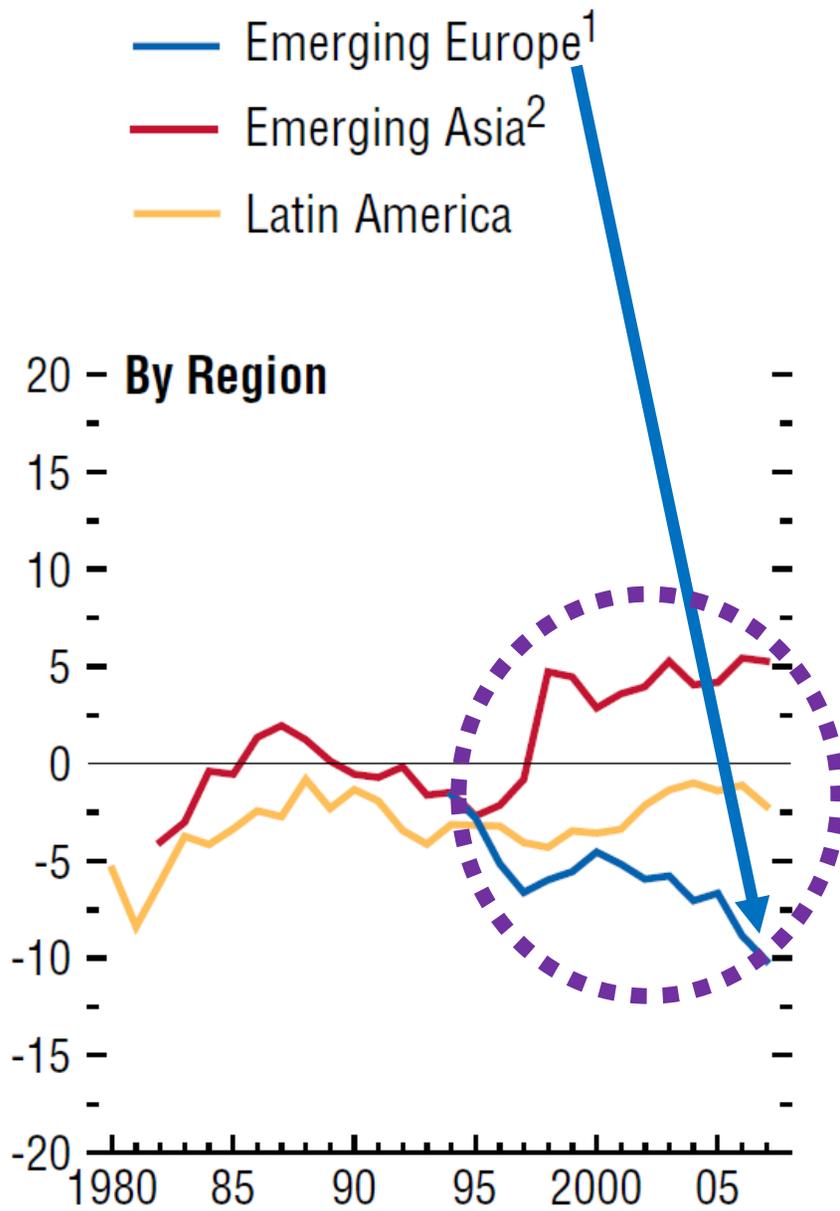


Figure 4, Current account/GDP

- The transition countries of Central and Eastern Europe were the recipients of massive inflows of capital from abroad, mostly from Western Europe. Between 2003 and 2008 capital inflows reached very high levels averaging more than 12 per cent of GDP.



What seemed to be the exception to the Lucas Paradox (i.e., large net inflows from the Rich to the Relatively Poor in 1995-2008) morphed into another falling domino in the row of sudden stop emerging market economies crises.

- The under-regulated inflows induced growing balance sheet exposure, overheating the economy, leading to banking crises, and balance-sheet recessions.
- Financial opening leads to inflows that at first were “explained by high growth prospects, highly open capital accounts, financial liberalization.” [IMF WEO 2008].

- Overtime, these inflows magnify pre-existing distortions, leading down the road to calamitous financial crisis inducing massive loses and protracted recessions.

Emerging Europe financial crises illustrate conditions magnifying the initial inflows, and the ultimate crisis costs

1. Debt flows and external borrowing in hard currencies are much riskier than equity flows in countries having a sovereign national currency. The large depreciation propagated by sudden stop and capital flight crises raised massively the cost of serving external debt, leading to deeper defaults. This has been vividly illustrated in the Swiss and euro mortgage crises in Hungary and Poland.
2. Debt flows and external borrowing matters even in euro countries borrowing in euro. Greek's and Spain's external borrowing in euro implies debt overhang that can't be inflated away as the euro is not the currency under the control of these countries.
3. Moral hazard has been prevalent in Emerging Euro.

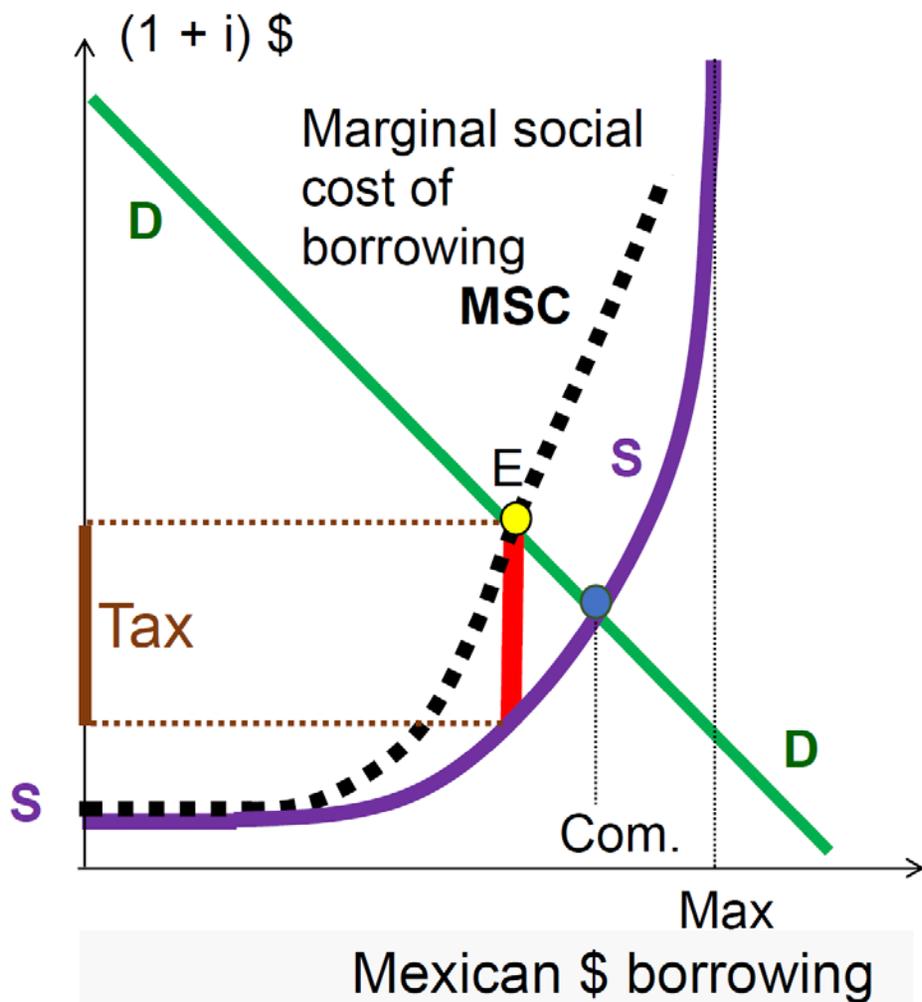
- a. The over-borrowing in foreign currency may reflect bailing out expectations and the tendency of some borrowers to ignore tail risks.
- b. The presumption that Greece, Spain and the like are too important to default may explain their long spell of external borrowing, presuming that the ECB and other institutions will bail out the lenders in case of systemic default.

Policies

- The GFC put to the fore the risks of under-regulated banking, and international capital flows.
- The GFC discredited (again) the views that private flows should not be regulated as they reflect the risk tolerance of the private sector.
- Correlated private risks and “too big to fail” imply that at times of peril, fears of the systemic collapse of financial intermediation induce massive bailouts, socializing private losses, saddling the tax payers with the costs of private losses and debt overhang.

- Leverage cycles generate excessive risk taking, deep and longer booms, triggering down the road prolonged balance-sheet recessions. Banks relied heavily on external wholesale funding and the rapid credit expansion took place against very limited equity capital in the corporate sector. The onset of the crisis caused a sudden stop in external financing. Exposed countries were caught in a vicious cycle of reduced credit availability, deleveraging, rising non-performing loans, and a cutback in corporate investment and output. Borio and Lowe (2002), Jordà et al. (2015)
- Public finance considerations imply tendency of external hard currency over-borrowing, as the atomistic borrower is price taker, overlooking the impact of the borrowing on raising the probability of costly sovereign default. This leads to an externality akin to 'congestion,' ending up with excessive debt overhang.
- These considerations led observers to advocate prudential regulations, inducing the private sector to internalize the impact of external borrowing on the tax payer.

Over-borrowing and congestion externality: Aizenman EJ (1989)



Korinek (2010), Aizenman (2011),
Mendoza and Bianchi (2010).

Externalities and Sovereign debt

Consider Mexico's sovereign borrowing: selling \$ bonds yielding interest rate $1 + i$. The interest rate i reflects the probability of a costly Mexican default. Higher Mexican debt tends to increase the risk of default, and thereby the interest rate.

Key insight: the market underprices default risk.

The optimal policy: tax given by the red (brown) Tax line.

- Equity exposure is less risky than debt exposure.
- Yet, EMs with underdeveloped financial systems find it easier to borrow using external debt than equity instruments.

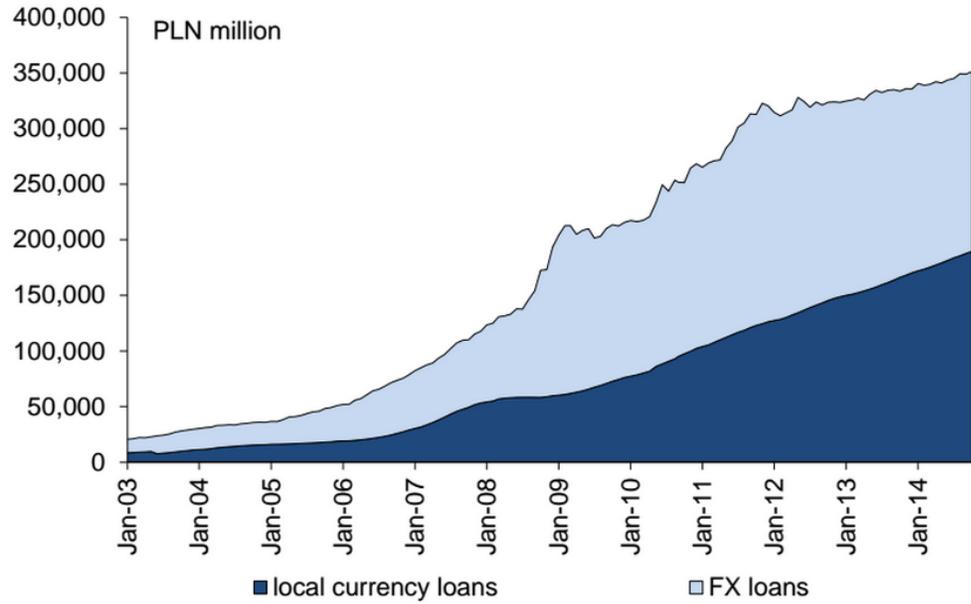
This is in line with Lane and McQuade (2014) “Domestic credit growth in European countries is strongly related to net debt inflows but not to net equity inflows. This pattern also holds for an extended sample of 54 advanced and emerging economies.”

Proposed Prudential regulation include wide array of policies:

1. Regulations prohibiting or limiting funding mortgages in foreign currency, as it exposes the borrowers to currency risks. *Half of Poland's mortgages are denominated in foreign currencies, and 80% of those foreign currency mortgages are denominated in Swiss Francs.*

Exhibit 2

Poland: Almost 50% of Housing Loans Are in FX (Mostly CHF)



<http://www.businessinsider.com/poland-investigating-banks-after-swiss-national-bank-decision-2015-1>

2. Taxes on external borrowing in hard currency.
 - A lesson articulated by Hyun-Song Shin (serving as the chief economic advisor to President Lee, 2009-2010) are policies inducing the private sector to internalize the social costs of external hard currency borrowing, possibly by relying on Pigovian taxes.
 - Bruno and Shin (2014) credited these policies with the decrease of the sensitivity of capital flows into South Korea to global conditions in the period following the introduction of macro-prudential policies.

3. Admati and Hellwig (2014): cap the leverage by raising the capital ratio, to about 25%

<http://www.economist.com/news/business-books-quarterly/21576072-important-argument-safer-banks-undermined-its-tone-safety>

The case against it: Charles Calomiris argued that “equity ratios relative to asset risk are what matter, not equity ratios per se,” Voxeu.

The case for it: measuring leverage is much easier than measuring and controlling risk exposure... Jordà et al. (2015)



“Only when the tide goes out do you discover who's been swimming naked” Warren Buffett

The European Banking Authority August 2016 Report on the Leverage Ratio's position echoes Admati and Hellwig's argument, though it advocates a substantially lower capital ratios:

“The overarching aim of the leverage ratio (LR) regulation is to limit the build-up of leverage to the degree that financial institutions do not end up with excessive leverage while maintaining comfortable risk-based capital measures.”

[https://www.eba.europa.eu/documents/10180/1360107/EBA-Op-2016-13+\(Leverage+ratio+report\).pdf](https://www.eba.europa.eu/documents/10180/1360107/EBA-Op-2016-13+(Leverage+ratio+report).pdf)



History and Development Challenges: Center versus periphery in the CESEE context

Allen et al. (2011) “Cross-Border Banking in Europe: Implications for Financial Stability and Macroeconomic Policies”, CEPR book

Important differences between Western Europe and Central and Eastern Europe: “The ownership transformation of the banking system, from a state owned, mono-bank system towards a privately owned, market-based financial system, was key to achieving macroeconomic stability in the late 1990s. Foreign-owned banks provide 90% of the credit to non-bank residents in ‘emerging’ Europe compared to 30% in ‘developed’ Europe.”

- Regulators and supervisors reacted inadequately due to a lack of an appropriate resolution framework.

Three alternative policy options to address the interconnectedness:

1. Change banking structures
2. Ring-fence through subsidiaries
3. Share the financial stability risks

Cross-border banking brings important stability benefits...

The assets of cross-border banks will be less exposed to country-specific shocks.

...but also costs!

Foreign capital, however, is likely to be more mobile than domestic capital. In a crisis situation, foreign banks may simply decide to 'cut and run'.

- The largest banking centers in Europe are well balanced but integration in the new member states is not.
- There is a need for a macro-prudential approach to regulation – especially in Europe.

Lane (2013)

“Extraordinary boom-bust cycles in both gross flows and net flows since 2003. The reversal in net capital flows during the crisis has been very costly in terms of macroeconomic and financial outcomes for the high-deficit countries.”



References

- Admati, A., & Hellwig, M. (2014). *The bankers' new clothes: What's wrong with banking and what to do about it*. Princeton University Press.
- Aizenman, Joshua, Brian Pinto, and Artur Radziwill. (2007) "Sources for financing domestic capital—Is foreign saving a viable option for developing countries?" *Journal of International Money and Finance* 26.5: 682-702.
- Aizenman, Joshua (2004a) "Financial Opening: Evidence and Policy Options, Joshua Aizenman. in *Challenges to Globalization: Analyzing the Economics*, Baldwin and Winters. University of Chicago Press.
- Aizenman, Joshua (2004b) "Financial Opening and Development: Evidence and Policy Controversies," *American Economic Review*, 94(2), 65-70.
- Aizenman (2011) "Hoarding International reserves versus a Pigovian Tax-Cum-Subsidy Scheme: Reflections on the deleveraging crisis of 2008-9 and a Cost Benefit Analysis," *Journal of Economic Dynamics and Control*, 35(9) pp.1502-1513.
- Allen, F. (2011). *Cross-border banking in Europe: implications for financial stability and macroeconomic policies*. CEPR.
- Borio, Claudio EV, and Philip William Lowe. (2002) "Asset prices, financial and monetary stability: exploring the nexus." (2002).
- Bruno, V., & Shin, H. S. (2014). Assessing macroprudential policies: case of South Korea. *The Scandinavian Journal of Economics*, 116(1), 128-157.
- Caballero, R., and A. Krishnamurthy. (2001) "International and domestic collateral constraints in a model of emerging market crises." *Journal of Monetary Economics* 48 (3): 513–48.
- Corsetti, G., P. Pesenti and N. Roubini. (1999): "Paper Tigers?", *European Economic Review* (43)7.
- Gourinchas, Pierre-Olivier, and Olivier Jeanne. "The elusive gains from international financial integration." *The Review of Economic Studies* 73.3 (2006): 715-741.

- Gourinchas, P. O., & Jeanne, O. (2013). Capital flows to developing countries: The allocation puzzle. *The Review of Economic Studies*.
- Hellmann, T., Murdock, K., and Stiglitz, J.E. (2000): "Liberalization, Moral Hazard in Banking and Prudential Regulation?" *American Economic Review*, 90 (1), 147- 165.
- Jordà, Ò., Schularick, M., & Taylor, A. M. (2015). Leveraged bubbles. *Journal of Monetary Economics*, 76, S1-S20.
- Korinek, A. (2010) "Excessive Dollar Borrowing in Emerging Markets: Balance Sheet Effects and Macroeconomic Externalities", manuscript.
- Lane, Philip R., and Peter McQuade. (2014) "Domestic credit growth and international capital flows." *The Scandinavian Journal of Economics* 116.1: 218-252.
- Lane, Philip R. (2013) "Capital flows in the euro area."
- Lucas, Robert (1990), "Why doesn't Capital Flow from Rich to Poor Countries?" *American Economic Review* 80, 92–96.
- McKinnon R. I.; and H. Pill. (1996): "Credible Liberalizations and International Capital Flows: The Overborrowing Syndrome." In Ito T. and A. O, Krueger, eds. *Financial deregulation and integration in East Asia*. NBER-East Asia Seminar on Economics, vol. 5. Chicago and London: University of Chicago Press, pp. 7-42.
- Mendoza Enrique and Javier Bianchi (2010). "Overborrowing, financial crises and macro-prudential taxes," Proceedings, Federal Reserve Bank of San Francisco, issue Oct.
- Prasad, E. S., Rajan, R. G., & Subramanian, A. (2007). Foreign capital and economic growth (No. w13619). National Bureau of Economic Research.
- Rajan, R. G. (2005). Has financial development made the world riskier? (No. w11728). National Bureau of economic Research.