

Dilemma not Trilemma: The Global Financial Cycle and Monetary Policy Independence

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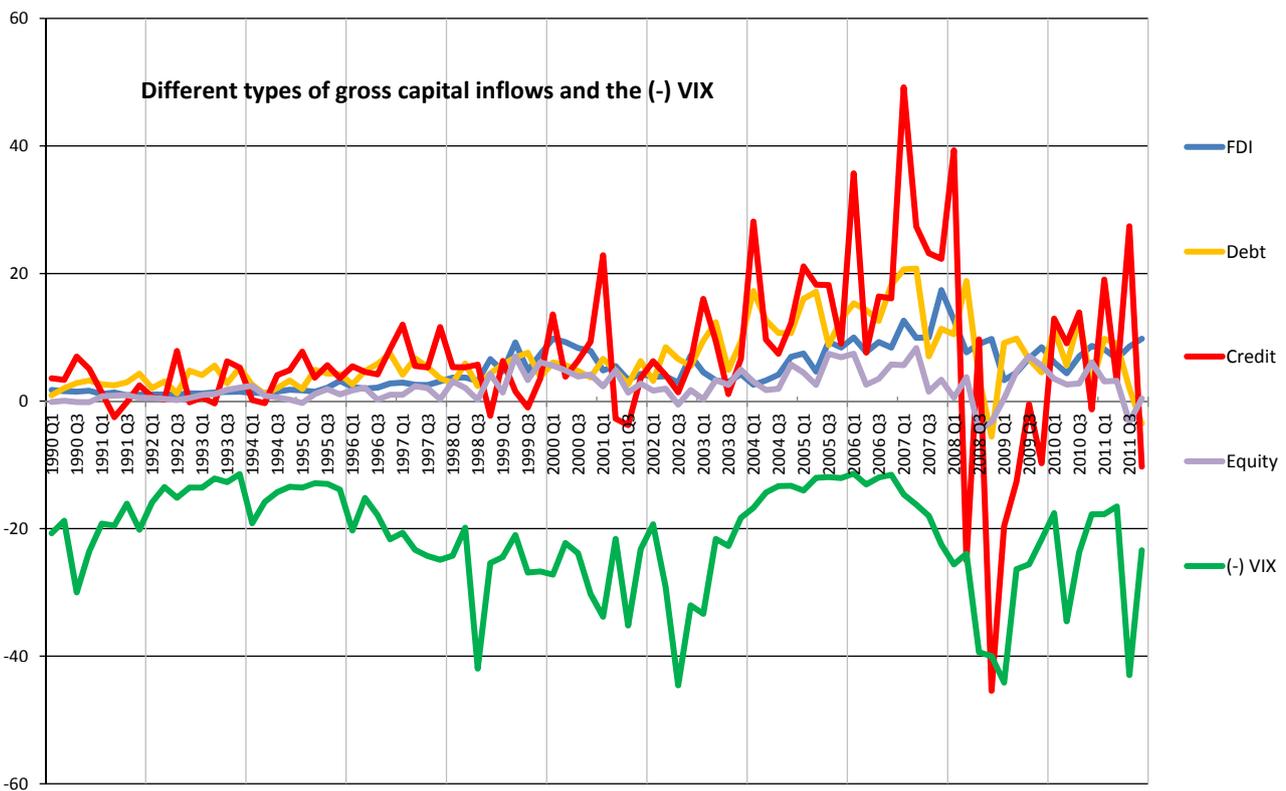
Global financial cycle: capital flows

- Strong commonality in gross capital inflows and outflows around the world
- Negative co-movements of these gross flows with the VIX, index of market risk aversion and uncertainty.
- Credit flows are especially pro-cyclical

Heatmap: correlations of capital inflows by asset classes into different geographical regions

Green : positive correlation; red: negative correlation

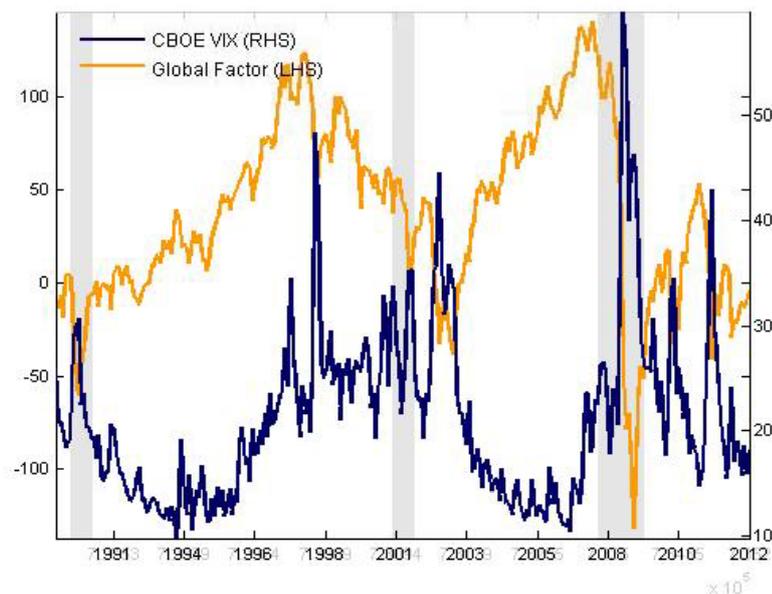
Liability	Equity N. Am	Equity LatAm	Equity CE. EU	Equity W. EU	Equity Em. As	Equity Asia	Equity Africa	FDI N. Am	FDI LatAm	FDI CE. EU	FDI W. EU	FDI Em. As	FDI Asia	FDI Africa	Debt N. Am	Debt LatAm	Debt CE. EU	Debt W. EU	Debt Em. As	Debt Asia	Debt Africa	Credit N. Am	Credit LatAm	Credit CE. EU	Credit W. EU	Credit Em. As	Credit Asia	Credit Africa	
Equity N. Am	1.00																												
Equity LatAm	0.39	1.00																											
Equity CE. EU	0.52	0.49	1.00																										
Equity W. EU	0.63	0.35	0.50	1.00																									
Equity Em. As	0.37	0.24	0.28	0.47	1.00																								
Equity Asia	0.24	0.31	0.28	0.40	0.31	1.00																							
Equity Africa	0.41	0.22	0.26	0.55	0.34	0.26	1.00																						
FDI N. Am	0.54	0.06	0.07	0.45	0.52	-0.07	0.22	1.00																					
FDI LatAm	0.41	0.10	0.08	0.29	0.32	-0.07	0.04	0.68	1.00																				
FDI CE. EU	0.46	0.11	0.08	0.18	0.23	-0.12	0.09	0.61	0.65	1.00																			
FDI W. EU	0.57	0.21	0.19	0.38	0.35	0.01	0.16	0.61	0.59	0.75	1.00																		
FDI Em. As	0.47	0.24	0.16	0.34	0.36	-0.04	0.04	0.65	0.77	0.69	0.64	1.00																	
FDI Asia	0.36	0.16	0.03	0.29	0.30	-0.17	0.05	0.60	0.70	0.57	0.51	0.69	1.00																
FDI Africa	0.33	0.01	0.10	0.18	0.03	-0.16	-0.19	0.31	0.36	0.35	0.35	0.34	0.27	1.00															
Debt N. Am	0.42	0.17	0.32	0.51	0.29	0.21	0.31	0.40	0.39	0.55	0.51	0.48	0.37	0.08	1.00														
Debt LatAm	0.20	0.40	0.55	0.16	0.15	0.00	-0.05	0.16	0.55	0.13	0.05	0.51	0.26	0.06	0.10	1.00													
Debt CE. EU	0.37	0.42	0.50	0.43	0.13	0.17	0.19	0.14	0.35	0.14	0.12	0.47	0.21	0.04	0.37	0.52	1.00												
Debt W. EU	0.49	0.05	0.33	0.50	0.23	0.27	0.47	0.29	0.10	0.44	0.27	0.25	0.02	0.10	0.58	-0.13	0.28	1.00											
Debt Em. As	0.40	0.58	0.65	0.35	0.20	0.23	0.20	0.13	0.24	0.25	0.37	0.35	0.15	0.02	0.32	0.38	0.53	0.14	1.00										
Debt Asia	0.16	0.18	0.24	0.22	0.16	-0.04	0.16	0.35	0.31	0.30	0.30	0.45	0.26	0.14	0.45	0.27	0.42	0.19	0.39	1.00									
Debt Africa	0.26	0.27	0.39	0.18	0.07	0.14	0.09	0.12	0.21	0.10	0.01	0.41	0.21	0.07	0.21	0.46	0.61	0.15	0.44	0.32	1.00								
Credit N. Am	0.29	-0.02	0.21	0.38	0.15	-0.01	0.32	0.20	0.02	0.19	0.20	0.12	0.09	0.04	0.37	0.14	0.23	0.25	0.23	0.25	0.03	1.00							
Credit LatAm	0.41	0.34	0.21	0.26	0.12	0.04	0.22	0.38	0.35	0.42	0.27	0.48	0.35	0.24	0.35	0.25	0.41	0.30	0.29	0.46	0.28	0.22	1.00						
Credit CE. EU	0.42	0.25	0.27	0.28	0.32	0.15	0.21	0.54	0.38	0.72	0.55	0.47	0.36	0.28	0.54	0.14	0.13	0.56	0.25	0.48	0.12	0.17	0.55	1.00					
Credit W. EU	0.19	-0.03	0.24	0.31	0.19	-0.16	0.26	0.27	0.08	0.20	0.30	0.19	0.13	0.15	0.45	0.20	0.25	0.33	0.26	0.45	0.16	0.63	0.30	0.34	1.00				
Credit Em. As	0.25	0.54	0.39	0.21	0.10	0.16	0.05	0.22	0.16	0.30	0.29	0.38	0.24	0.00	0.40	0.31	0.33	0.15	0.56	0.51	0.27	0.24	0.45	0.48	0.28	1.00			
Credit Asia	0.08	-0.03	0.02	-0.01	0.00	-0.40	-0.12	0.23	0.23	0.32	0.24	0.31	0.23	0.25	0.32	0.18	0.17	-0.01	0.13	0.37	0.08	0.43	0.35	0.23	0.52	0.37	1.00		
Credit Africa	0.11	0.06	0.01	0.15	0.01	-0.20	0.12	0.40	0.30	0.35	0.33	0.24	0.37	0.18	0.32	0.11	0.00	0.13	0.03	0.34	-0.02	0.24	0.30	0.40	0.36	0.30	0.31	1.00	



Global financial cycle: asset prices, credit growth and leverage

- An important part of the variance of a large cross section of 858 risky asset prices (stocks, corporate bonds, commodities) distributed on five continents is explained by one single global factor
- This global factor is closely related to the VIX (negatively)
- Stock markets more sensitive to the global factor if in countries with more credit inflows
- Credit growth and, for most areas, leverage and leverage growth co-move negatively with the VIX

Global factor in risky asset prices and the VIX



Source: Miranda-Agrippino and Rey (2012)

Feedback loop

- Global banks raising funds in particular in the US (dollar is the main currency of global banking).
- Surges in credit flows associated with increases in leverage worldwide
- Procyclicality: Credit creation when measured risks are low, asset prices pushed up further, spreads compressed, healthy looking balance sheets etc, measured risks lower etc...

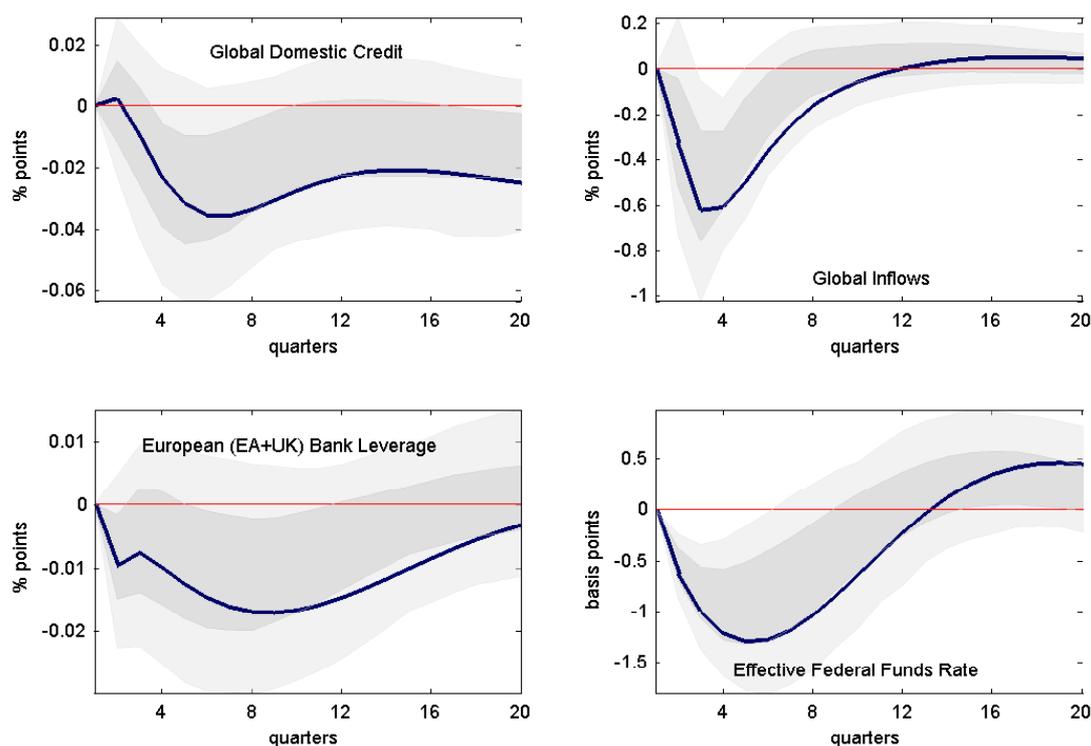
Excess credit growth is linked to crises

- The global financial cycle is not aligned with countries' specific macroeconomic conditions.
- Symptoms can go from benign to large asset price bubbles and excess credit creation, which are among the best predictors of financial crises.

Driver of the global financial cycle

- A VAR analysis suggests monetary policy in the centre country is an important determinant of the global financial cycle
- When the Federal Funds rate goes down, the VIX falls, banks' leverage rises, as do gross credit flows.
- A fall in the VIX leads to an increase in global domestic credit.
- Estimates suggest that between 10 and 30% of the variance of the VIX is explained by shocks to fed funds rate (1990-2007)

Responses to 1% increase in VIX



The problem with the trilemma

- “Trilemma”: with free capital mobility, independent monetary policies are feasible if and only if exchange rates are floating (dominant paradigm in international finance).
- Whenever capital is freely mobile, cross-border flows and leverage of global financial institutions transmit monetary conditions globally, even under floating exchange-rate regimes.
- Gross credit flows are key for transmission

Dilemma not trilemma

- The global financial cycle transforms the trilemma into a “dilemma” or an “irreconcilable duo”: independent monetary policies are possible if and only if the capital account is managed, directly or indirectly.
- So should policy restrict capital mobility?

Benefits of international capital flows

- Evidence based on calibrated models: gains elusive
- Panel data and event studies: robustness?
- Tough measurement issues

- We cannot take benefits for granted.

Policy options

- a) impose targeted capital controls;
- b) act on one of the sources of the financial cycle itself: the monetary policy of the Fed and other main central banks;
- c) act on the transmission channel cyclically by limiting credit growth and leverage during the upturn of the cycle using macro-prudential policies;
- d) act on the transmission channel structurally by imposing stricter limits on leverage for all financial intermediaries.

- a) Capital controls: excessive credit growth being the main issue of concern, capital controls should be viewed as partial substitute for macroprudential tools.
- b) Internalisation of the global spillovers of the centre's monetary policy. A small group of systemically significant central banks to meet regularly under the auspices of the BIS Committee on the Global Financial System, issue report on global monetary conditions. But may conflict with the domestic mandates of central banks. Historical record not encouraging.

- c) Muting the transmission channel of the global cycle by taking cyclical measures (additional capital buffer, loan-to-value ratios ,debt-to-income ratios, macro-prudential levy). Tools are institution- and market-specific: a centralized repository of knowledge gathered so far by supervisors and central bankers would be highly valuable. Timing of intervention is key: based on rules or aggressive stress testing. Stress tests improve the knowledge of supervisors; give constructive challenges to the internal risk monitoring of institutions; may reveal failures in corporate governance where incentives are not aligned to keep risk in check or where information is not available or inadequately centralized.

d) Muting the transmission channel structurally by dampening the amplification capacity of financial intermediaries: tougher limits on leverage. Credit is excessively sensitive to financing costs. Straightforward tool: helps make complex macro prudential policies more robust. Errors of judgement by supervisors, Chief Risk Officers, CEOs and boards are possible and even likely in our excessively complex financial and regulatory environment. Tougher leverage ratios are a sensible way to decrease the (verifiably huge) cost of these errors, without imposing large costs, if any, on the real economy.

Conclusion

The right policies to deal with the “dilemma” should aim at the main source of concern: excessive leverage and credit growth. This seems to require a convex combination of a well thought out implementation of macroprudential policies guided by aggressive stress-testing (c) and tougher leverage ratios (d). Depending on the source of financial instability and institutional settings, the use of capital controls (a) as a partial substitute for macroprudential measures should not be discarded.