7. Monetary and financial policies

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The Washington Consensus helped forge a world view in which opening borders to capital flows was seen as an important way to increase economic efficiency. In the past decades, evidence accumulated of the shortcomings of a largely unmanaged financial system in which the volatility of capital flows was still seen as an exogenous feature of the world economy. This chapter sets the stage by discussing the characteristics of the global financial cycle (GFC) and the role of the United States Federal Reserve, to then discuss the influence of this cycle on the pass-through of domestic monetary policy to market rates for emerging markets (EMs) and advanced economies. It then sets out the implications of limited monetary policy pass-through for the validity of the trilemma in international finance. The chapter calls for the systematic use of macroprudential policy tools in advanced and EMs alike to complement credible monetary policy frameworks. It also emphasises the importance of the development of local currency bond markets. In some cases, capital controls may also be useful.

I. Introduction

The Washington Consensus helped forge a world view in which opening borders to capital flows was seen as an important way to increase economic efficiency. A parallel was drawn between the efficiency benefits of trade in goods and those of trade in assets – supported by certain economic theories that neglected to model frictions in capital markets. That parallel went relatively unchallenged in the 1980s and the 1990s. The International Monetary Fund (IMF) even considered changing its articles of agreements to push for deregulation of the financial account in 1997 – but then capital suddenly began to flow out of Thailand and other Asian economies. The events that followed, culminating in what would be called the 'Asian financial

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crisis of 1997', cut short the planned overhaul of the international financial system towards more liberalisation.

Nonetheless, the lingering wisdom held that free capital flows remained desirable, and insuring against their volatility was mainly the responsibility of debtor countries. As a result, some EMs, especially in Asia, went on to accumulate large stocks of foreign exchange reserves to help insulate their domestic monetary and financial conditions from hot money flows. In parallel, important progress was made in terms of macroeconomic frameworks, with more countries adopting inflation targeting, letting their exchange rate float, and enhancing the credibility of their central banks. This was a step in the right direction and improved resilience. Little by little, however, researchers began to analyse the shortcomings of a largely unmanaged financial system in which the volatility of capital flows was still seen as an exogenous feature of the world economy.

Evidence accumulated that the system was not sustainable. We went from a long stretch with no financial crises after 1944, under Bretton Woods, where financial flows and exchange rates were heavily managed and banks in the financial centre tightly regulated, to a rapid succession of major financial disasters following liberalisation and deregulation[1]: the Latin American debt crisis of the 1980s; the Mexican peso crisis of 1994–95; the Asian financial crisis of 1997; the Russian crisis and Long-Term Capital Management bankruptcy of 1998; the Turkish and the Argentinian crises of 2001; the Great Financial Crisis of 2007–09; the Euro Area debt crisis of 2010–14.

This sequence of crises made it urgent to revisit the conventional wisdom and draw lessons to help manage monetary and financial stability going forward. So, what, exactly did we learn?

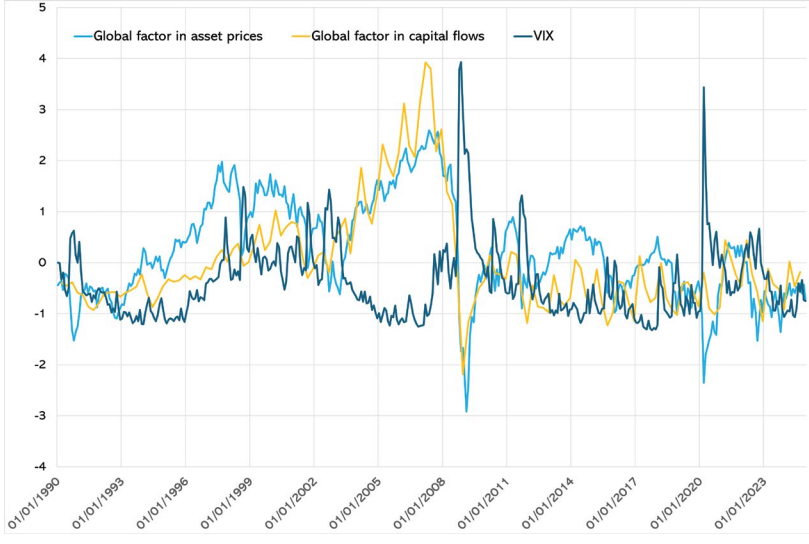
This chapter sets the stage by discussing the characteristics of the GFC and the role of the US Federal Reserve in section I. It then turns to the influence of this cycle on the pass-through of domestic monetary policy to market rates for EMs and advanced economies in section II. Section III sets out the implications of limited monetary policy pass-through for the validity of the trilemma in international finance. The GFC makes flexible exchange rates less effective, and with full capital mobility, monetary independence is hard to achieve. This does not mean however that exchange rate flexibility and a credible inflation targeting framework are not advisable; they help to absorb large shocks. Finally, section IV reviews the different policy tools and concludes the argument. The chapter calls for the systematic use of macroprudential policy tools in advanced and EMs alike to complement credible monetary policy frameworks. It also emphasises the importance of the development of local currency bond markets. In some cases, capital controls may also be useful.

II. The global financial cycle

Financial globalisation has risen over the last 50 years. The collapse of Bretton Woods and the subsequent financial deregulation greatly encouraged the development of global banking and capital markets. This induced a high degree of co-movement in risky asset prices, capital flows, leverage, and financial aggregates around the world, a phenomenon called the global financial cycle (GFC) in Rey (2013).[2] Risky asset prices and capital flows are highly correlated with measures of global risk appetite, such as the Chicago Board Options Exchange's Volatility Index (VIX). Figure 7.1 shows that the common components of risky asset prices and gross capital flows are highly positively correlated with one another and co-move negatively with the VIX, a 'gauge of fear' in international markets.[3] In financial markets – unlike in other realms of the economy – volumes and prices go hand in hand, and both increase sizably during periods of high-risk appetite. Such periods tend to be ones in which risk taking, proxied by leverage, goes up, and flows into EMs increase. The balance sheet of certain financial intermediaries become larger and more vulnerable to sudden changes in asset valuations.

Countries' exposure to global financial conditions has an important effect on their ability to conduct effective independent monetary policy. There is no 'divine coincidence' which guarantees that international financial conditions align with the objectives of domestic monetary authorities. As a result, central banks in EMs and advanced economies alike may face exuberant international investors at a time where they are trying to tighten monetary policy at home. Vice versa, they may be unable to find liquidity when they are attempting to

Figure 7.1: The global financial cycle



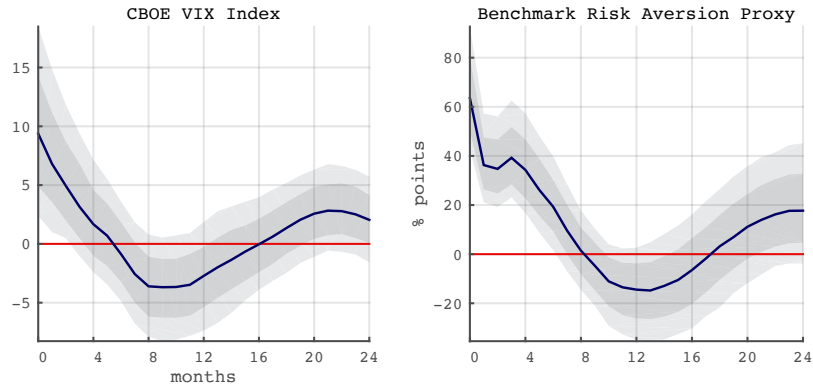
Source: author's calculations, data from Miranda-Agrippino and Rey (2022).

expand demand domestically. The extent to which they can use policy tools to tame the GFC and gain some independence will be discussed in the next sections. But what drives the GFC?

US monetary policy has an important effect on the GFC, in particular through a 'risk-taking channel'.[4] Various papers describe how loose monetary policy and extensive liquidity provision induce financial players to take on more risk.[5] This can happen by relaxing financial constraints and shifting the 'sentiment' of market participants.[6] Given the importance of the dollar as a funding currency, as well as the prevalence of dollars on the asset side of international balance sheets, it is perhaps not surprising that the monetary policy of the US Federal Reserve has a sizeable effect on gauges of 'market fear' such as the VIX or indeed on any index of risk aversion and volatility; there are large positive correlations between the VIX, the VSTOXX, the VFTSE, the MOVE etc... as well as with the excess bond premium.[7] US monetary policy impacts 'risk on' and 'risk off' attitudes in international markets. Figure 7.2[8] shows the effect of a 100 bp monetary policy tightening by the US Federal Reserve on the VIX (left panel) and on a measure of aggregate risk aversion. In both cases one sees large contemporaneous increases, which fade after six to eight months.

Risk taking in turn shapes credit creation, leverage, and the movement of flows to or from EMs,[9] as well as asset valuations around the world. Variation in the leverage of global banks has a large impact in driving current account imbalances.[10] The global dollar cycle is particularly important when it comes to influencing economic conditions in EMs and low-income economies.[11]

Figure 7.2: Federal reserve and risk on, risk off



Source: Figure E.3 (parts vi and i), p. 31, in 'Online Appendix' for Miranda-Agrippino and Rey (2020). CC BY licence.
Notes: Impulse response function of US monetary policy on risk aversion: VIX and aggregate effective risk aversion proxy . Effect of a 100 bp Federal Reserve tightening. Months on the x axis.

In sum, we have learned that i) there is a powerful GFC; ii) the risk-taking channel is important for monetary policy transmission, hence theoretical modelling of spreads and premia is of first order importance in monetary models; and iii) the US Federal Reserve's monetary policy has important spillover effects on risk taking well beyond US borders.

III. Monetary policy pass-through and the global financial cycle

What are the implications of the GFC for the managing of monetary and financial conditions in emerging and advanced economies?

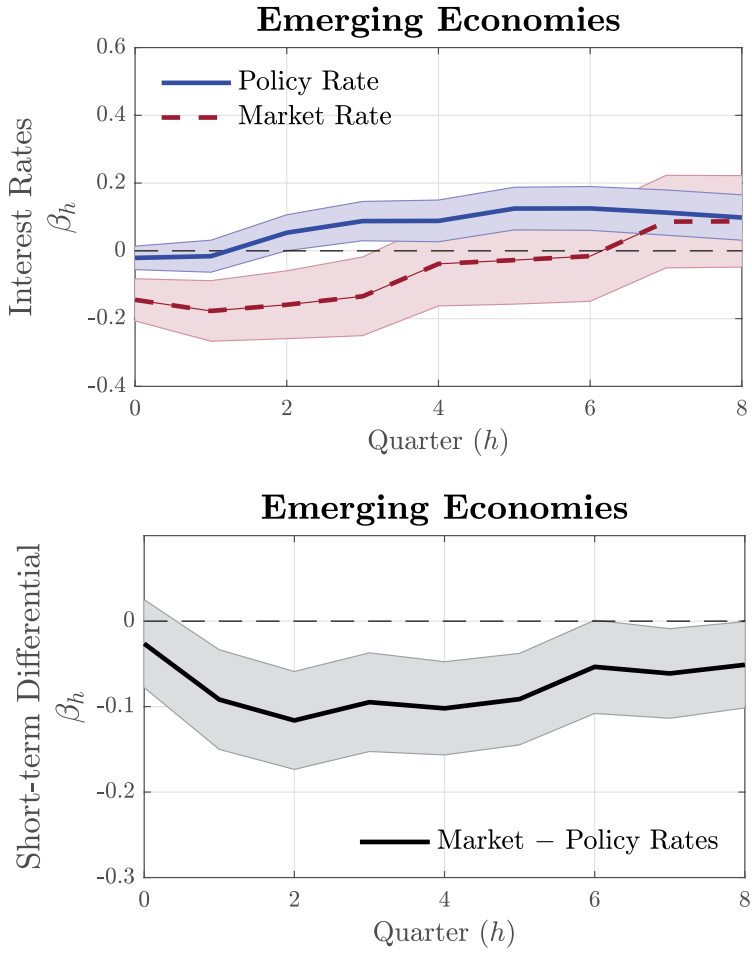
Using a large set of emerging and advanced economies at a quarterly frequency from mid-1990s to 2019, one study[12] showed that central banks in emerging economies, just like their peers in advanced economies, tend to follow a Taylor rule, meaning lowering their policy rates in response to deteriorating local economic activity or lower inflation. Yet the pass-through of their policy rate to short-term market rates appears compromised by their exposure to the GFC. The same study found that, in emerging economies, three-month market rates tend to increase when economic activity contracts. In advanced economies, by contrast, they found that policy rates and short-term market rates both decline when economic activity decelerates.

Figure 7.3 contains case A for emerging markets and case B for advanced economies. The first panel in each case shows the correlation between the future interest rate (at horizon t+h) and current gross domestic product (GDP) growth (at horizon t). The policy rate is in blue and the three-month treasury rate is in red. The second panel in each case panel reports the correlation between the future treasury-policy differential (at horizon t+h) and current GDP growth (at horizon t).[13] Thus, monetary policy seems to be counter-cyclical in both emerging and advanced economies over the last three decades. However, emerging economies' market rates, *even short-term ones*, exhibit a striking disconnect from local policy rates, and the wedge between the two appears to increase in times of stress. This disconnect between short-term market rates and policy rates in EMs often reflects their exposure to global financial markets and the ebb and flows of capital as funding costs in emerging economies depend in part on international liquidity. This is strikingly true, for example, in Turkey.[14] Though not the only factor behind the GFC, US monetary policy is a prominent driver of international funding conditions. Many researchers have shown that an exogenous increase in US rates causes a decrease in credit creation, tighter financial conditions, and a decrease of both *gross* capital flows for all economies and of *net* capital flows for EMs.[15]

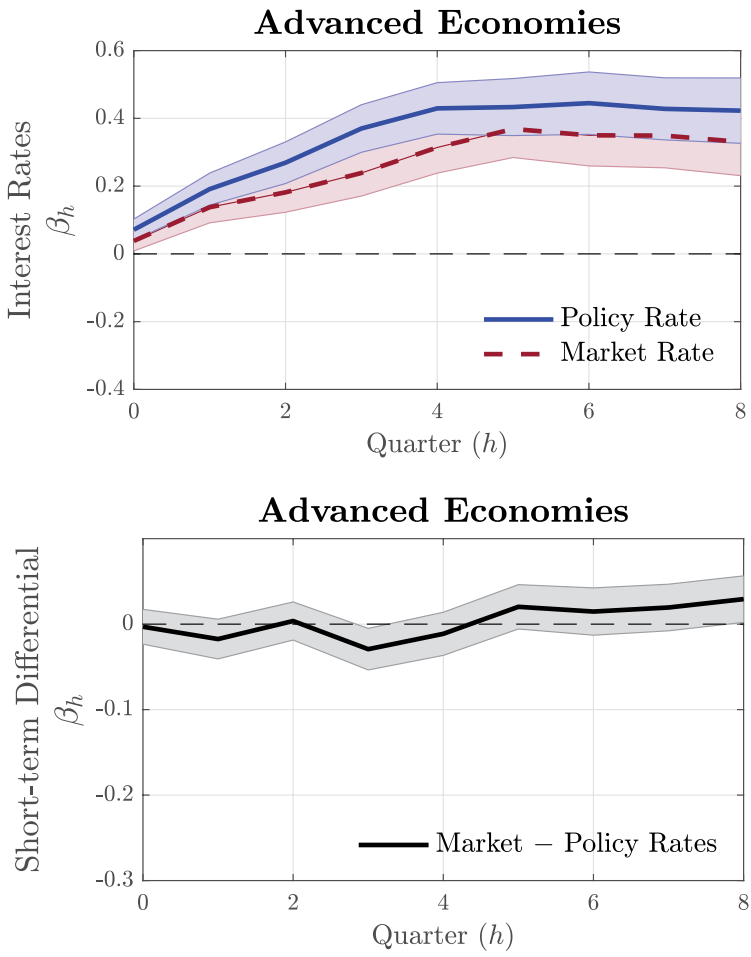
For EMs, macroeconomic stabilisation can be complicated further by the existence of the 'original sin', a situation in which domestic currency cannot be used to borrow abroad.[16] As a result, if a country's firms borrow in dollars to

finance a project that generates returns in domestic currency, an appreciation of the dollar could lead to a financial crisis. Moreover, foreign and domestic borrower panic can interact.[17] Recent research has shown that, historically, the vulnerability of EMs to US monetary policy was stronger both when the original sin was present, in the form of currency mismatch on balance sheet, and when the monetary policy frameworks were less credible.[18] The improvement of monetary policy frameworks, through inflation targeting and floating exchange rates, together with the development of domestic currency debt markets, which eliminate the original sin, helped increase the resilience of EMs to the 2022 US Federal Reserve hikes – even if other factors, such as strong commodity markets, early hikes in EMs, and macroprudential policies, all likely played their roles.

Figure 7.3: Pass-through of monetary policy
Panel A: emerging economies



Panel B: advanced economies



Source: De Leo et al. (2022), Figure 2, p. 10; reproduced with permission by authors.

In fact, the tightening of financial conditions caused by the US Federal Reserve extends to advanced economies, with corporate and mortgage spreads widening even for large economies with floating exchange rates such as the United Kingdom or Germany.[19] Therefore, while the pass-through of monetary policy to short-term market rates is higher for advanced economies than it is for EMs, the monetary and financial conditions of advanced economies are nevertheless affected by the GFC.

In sum, we have learned that (i) monetary policy pass-through for EMs is not straightforward, even for short-term market rates; (ii) monetary policy pass-through is also not straightforward for advanced economies, as far as

mortgage rate and corporate lending rates are concerned; (iii) the pass-through of policy is influenced by global financial conditions – and these conditions are, in turn, influenced by the US Federal Reserve's monetary policy.

IV. Trilemmas and dilemmas

The trilemma in international finance states that, at any one moment, it is not feasible to have a fixed exchange rate, full capital mobility, and monetary policy independence. Only two of the three may coexist. The trilemma argument builds on an arbitrage condition in international markets – the uncovered interest parity (UIP) condition – which equates returns across bond markets in a world of perfect capital mobility and risk neutrality. For example: it is evident that under a fixed exchange rate regime and full capital mobility, policymakers cannot set the interest rate at the level they believe appropriate for monetary conditions in their economy. Should they try to free their policy rate from foreign influences, they would quickly be flooded by large capital flows reversing their measures. Meanwhile the 'fear of floating', so well documented by Guillermo Calvo and Carmen Reinhart, is an important illustration of the constraint that full capital mobility puts on the monetary policy of countries resisting exchange rate volatility, whatever the reason.[20]

On the other hand, a floating exchange rate in principle gives a central bank an additional degree of freedom. According to the Mundell-Fleming logic, once the exchange rate has accounted for foreign influences, the domestic interest rate is all that is needed to achieve the internal policy target of macroeconomic stabilisation. This is why the literature testing the empirical validity of the trilemma has focused on measuring the co-movement of interest rates in peripheral and centre countries across exchange-rate regimes. If the domestic policy rate does not closely follow that of the centre country, this is taken as evidence of monetary policy autonomy vis-à-vis the centre. Policy rates will of course be less correlated under a floating exchange-rate than under a fixed exchange-rate regime when there is free capital mobility.[21]

However, in section II we saw that the ability to set the policy rate independently, which is only available under floating exchange rates, far from guarantees the potency of monetary policy – because in emerging economies the pass-through of monetary policy is affected by global financial conditions, even for short-term market rates. This also applies to advanced economies with floating currencies when it comes to longer rates.

This means the trade-off faced by central bankers is much more complex than had been historically acknowledged, partly because many monetary policy models failed to model risk and term premia, or even spreads. However, this does not mean that exchange rate flexibility and a credible inflation-targeting framework are not advisable; they help to absorb large shocks.[22] Indeed, countries with fixed exchange rate regimes are more susceptible to financial fragilities – such as unsustainable credit and house price growth, as well as excessive bank leverage – than those with more flexible regimes.[23]

To summarise this section, we have learned that even if floating exchange rates do provide a degree of insulation for economies when compared to fixed exchange rate regimes, effective monetary policy independence requires additional tools to help 'tame' global financial conditions.[24] In that sense, the traditional trilemma has morphed into a dilemma: to guarantee some pass-through of monetary policy, capital flows and credit should be managed either directly, through capital controls, or indirectly, through macroprudential policies.[25]

V. Expanded set of policy tools

Gross capital inflows, leverage, credit growth, and asset prices all dance to the same tune, co-moving with risk appetite. This is the GFC – and it may not always be beneficial for individual countries. Symptoms can veer from benign to sudden stops or large asset price bubbles and excess credit creation. In the latter case, such conditions have been identified as among the best predictors of financial crises.

To deal with the GFC and the 'dilemma', there are many policy options that can be used to reinforce the pass-through of domestic monetary policy and to help maintain financial stability, while implementing the mandate of price stability (and high employment, where relevant). Different tools will be more or less suitable depending on the country, its institutional structure and legislative arsenal, and the development of its financial markets and preferences. A non-exhaustive list of these tools follows: (a) capital controls; (b) monetary policy framework of EMs (credibility, independence of the Central Bank); (c) monetary policy of the US Federal Reserve and other main Central Banks; (d) national countercyclical macroprudential policies; (e) stricter prudential regulations on, i.e., foreign debt exposure, leverage, concentration exposures, maturity transformation of banks and non-banks; (f) development of local financial markets to ensure that in case of sudden stops there are enough contrarian investors and to limit dependence on foreign currency financing (ending the original sin).[26]

1. *Capital controls*

Capital controls are one measure that can insulate economies from the GFC. These could be either cyclical or permanent, and applied to inflows or outflows – or both.

Permanent capital controls might be applied to a subset of assets on either the inflow or the outflow side. But it is difficult to make a rigorous assessment of the effects of such a policy because, in recent times, permanent controls have been implemented exclusively in a subset of low-income countries, which share very specific characteristics.[27] Overcoming this selection issue is a major challenge.

In contrast, temporary controls, especially on credit and portfolio inflows when the cycle is in a boom phase, can and have been used in various contexts, such as the Chilean 'encaje', the capital controls on firms' production, investment, and exporting decisions imposed by Chile between 1991 and 1998, and the 2010 and 2011 Brazilian taxes on equity inflows. Such controls have often been used with the primary aim of preventing 'excessive' appreciation of the exchange rate when capital flows in, potentially hurting the export sector. In these situations, central bankers sometimes intervene in the foreign exchange market to keep their currency down, accumulating reserves. They face the trade-off of higher inflation or increased sterilisation costs with the likely side effect of a higher interest rate leading to further inflows – something also reinforced by expectations of further appreciation of the exchange rate. Taxing inflows – if effectively implemented – can act as a circuit breaker in such a situation. But there is lively debate on the effectiveness and side effects of temporary capital controls in this context.[28]

When it is excessive credit growth that is the main issue of concern, capital controls should be viewed more as partial substitutes to macroprudential tools. The latter tend to be more targeted.[29] It is important to note that macroprudential policies can weaken the link between domestic monetary policy and capital inflows, without the imposition of capital controls. For instance, the central bank can reduce the incentive for banks to borrow externally when domestic monetary policy tightens by imposing additional capital or foreign exchange reserves requirements. Macroprudential policies have thus been found to be able to 'carve some space' for monetary policy. Indeed, 'pre-emptive' measures to manage capital flow can reduce developing countries' external finance premia during risk-off shocks, especially for the most vulnerable countries.[30]

Capital outflow controls have also proved to be useful in certain circumstances. In the case of Iceland and the 2008 crisis, capital outflow controls that locked in large amounts of carry-trade funds were successfully used as a bargaining tool between the Icelandic government and international investors to help resolve the banks' illiquidity.[31]

2. *Monetary policy frameworks of emerging markets*

In EMs, both the extent of domestic monetary policy pass-through to short-term rates and the ability to insulate from foreign financial spillovers – in particular the US Federal Reserve's monetary policy – depend in great part on the credibility of their monetary policy frameworks.[32] Adopting a floating rate and a credible inflation target can help; floating rates also to some extent help absorb large economic shocks.[33] Meanwhile, the development of bond markets in local currencies also helps make EMs more resilient.

3. *Internalising the global spillovers of the centre's monetary policy*

One might also consider acting on one of the sources of the GFC itself: monetary policy in the main financial centres, and in particular the US. Monetary conditions in large financial centres shape the GFC via the endogenous response of leverage and the procyclicality of cross-border credit flows. Central bankers in systemically important countries have yet to fully internalise the spillover effects of their policies on the rest of the world; they should pay more attention to their collective policy stance.

One practical way of implementing this would be, as Eichengreen et al. propose, for 'a small group of systemically significant central banks to meet regularly under the auspices of the Committee on the Global Financial System of the BIS', and for this group to 'discuss and assess the implications of their policies for global liquidity, leverage, and exposures, and the appropriateness of their joint money and credit policies from the point of view of global price, output, and financial stability'.[34] It could then issue a short report discussing policy trade-offs and international inconsistencies. With time, this should at least help us understand these complex issues, by stimulating more research in these areas – and might encourage central bankers to internalise some of the external spillovers of their policies – and to quantify spillbacks.

But the challenges of such a system are obvious: international cooperation on monetary spillovers may conflict with the domestic mandates of central banks. For example, in the short-to-medium run, domestic activity and inflation targets could very well be at odds with international financial stability. Furthermore, the management of aggregate demand in systemically important economies also has important consequences for economic activity in the rest of the world. The trade-offs are clearly extraordinarily complex.

4. *Muting the transmission of the global financial cycle with macroprudential measures*

Historically, the most dangerous outcome of loose global financial conditions is excessive credit growth, which means monitoring credit growth and leverage in each market is a sensible policy. Some countries have gone to great efforts to set up macroprudential authorities with this mandate.

In response to the Great Financial Crisis of 2007–09, Basel III introduced a countercyclical capital buffer. In the case of real estate, for example, which has historically been associated with severe financial meltdowns, lending can be restricted through loan-to-value ratios and debt service-to-income ratios, limits on exposure or additional sectoral capital buffers.

There is now a wealth of experience on the implementation of such tools. For example, the financial stability reports of national macroprudential authorities in the Euro area set out how they have used their countercyclical buffers in recent years. The 2013 Bank of Korea Report discussed how that institution leveraged caps on a foreign exchange derivatives position and a

macroprudential stability levy on non-core foreign exchange liabilities of banks. And the French Haut Conseil de Stabilité Financière discusses in its reports how it has tightened the lending standards in the residential real estate market. Country-specific institutional details and political economy considerations are of course important, but nonetheless a centralised repository of the knowledge and experience gathered so far by supervisors and central bankers would be highly valuable.[35]

Beyond the specific tools to be used, an important practical issue is the timing of an intervention. If a bubble is growing it is important not to wait too long; if a recession is looming one must raise the countercyclical buffer in time to release capital before the credit crunch.

Assembling a set of reliable early warning indicators for such scenarios can help prompt appropriate action. A complementary option would be to stress-test the balance sheet of the financial sector – both banks and non-banks – and identify the scenarios that could jeopardise financial stability. However, stress testing is a difficult exercise in general, and estimating second-round effects is particularly challenging. Furthermore, this is not a popular undertaking with market participants, as it requires regular inputs on top of mandatory reports. It also requires careful thinking about communication policy – and perhaps absolute confidentiality, as the case may be. Moreover, fiscal backstop strategies are needed to guarantee the credibility of the stress testing. None of this is easy. But doing stress tests regularly and often, even if the process is imperfect, is a necessary monitoring tool. It improves the knowledge of supervisors and insures they are up to date with recent market developments. It may also provide constructive challenges to the internal risk monitoring of institutions, or reveal failures in corporate governance in organisations where incentives are not necessarily aligned to keep risk in check, or where information is not adequately available. It may even reveal blind spots of risk-taking activities occurring below the radar screen of the Chief Risk Officer (CRO).

Finally, but importantly, it is worth remembering that excessive borrowing by a country means that *someone else is lending excessively*: macroprudential policies apply to lenders just as much as they apply to borrowers.

5. *Muting the amplification capacity of the financial sector*

At the heart of the transmission mechanism described in this chapter is the ability of financial intermediaries, whether banks or shadow banks, to leverage up to high levels quickly when financing conditions are favourable. Credit seems excessively sensitive to financing costs. Policies should aim to prevent risk taking being excessively procyclical. By putting tougher controls on leverage, limiting the extent of exposures to specific actors, monitoring maturity transformation and demanding liquidity buffers, one can reduce the propensity of the financial system to engage in destabilising feedback loops.

With such a set of tools, one can also help make the macroprudential policies described above more robust. Errors of judgements by supervisors, CROs, chief executive officers, and boards are possible and even likely in our excessively complex financial environment. Tougher limits on leverage ratios, for example, are a sensible way to decrease the (verifiably huge) cost of these errors, without imposing large costs on the real economy.[36] However, greater attention must be paid to non-bank financial intermediaries, which may have fallen outside the regulatory perimeter but have the ability to leverage, if we are to limit the 'leakages' of macroprudential policies.[37] Indeed, although strong prudential policies aimed at global banks do reduce the likelihood of funding stress during times of turmoil, this can cause risk to migrate towards non-banks, warranting an expansion of the regulatory perimeter.[38]

6. *Developing the depth of local financial markets*

Having deeper local financial markets will ensure that, if capital is abruptly withdrawn from a country, there are enough contrarian investors who can absorb the increase in net supply.

One concern for EMs has been the increase in non-bank financial intermediation, particularly open-end mutual funds and exchange-trade funds, which now account for nearly half of the external financing flows into such markets – even exceeding cross-border lending by global banks.[39] Investment funds are inherently more vulnerable to liquidity and redemption risks during periods of global financial market stress, increasing the volatility of capital flows to EMs. Benchmark-driven investments, namely passive funds, appear very sensitive to global risk shocks, such as tightening US dollar funding conditions, and some of these investors hold a large share of the investable assets of a given country. Hence, if they withdraw abruptly, a collapse in valuations may induce highly problematic second-round effects.

Such effects are likely to be less destabilising if there are local contrarian investors with deep pockets, such as pension funds. As discussed previously, developing local currency bond markets also has the advantage of decreasing the prevalence of the original sin.

VI. Conclusions

Of these six options, if history is a guide, establishing effective international cooperation among the main central banks to internalise the spillovers of their monetary policies on the rest of the world seems most difficult. There are many reasons for this, not least that such cooperation may conflict with the domestic mandates of central banks. Furthermore, the management of aggregate demand in systemically important economies has important consequences for economic activity in the rest of the world; other countries cannot simultaneously complain of excessive capital inflows due to loose monetary policy in the centre countries *and* wish for a higher level of

economic activity and demand stimulus in the same countries. All of this underlines that fact that the trade-offs are extraordinarily complex, and policy action will most likely remain biased towards national priorities. Still, a transparent forum in which the collective monetary policy stance of the systemically important central banks is actively discussed would be highly beneficial.

The most appropriate policies to support monetary and financial stability seem therefore to require both adopting a credible inflation targeting framework with a floating exchange rate, together with a well thought-out set of macroprudential policies applying both to host and investment countries. This policy needs to be supplemented with an active prudential supervision deploying the tools mentioned earlier, which can boost the development of local markets and help deepen local markets, to reduce the destabilising effect of capital flight. Depending on the source of financial instability and institutional settings, the use of capital controls on inflows and outflows, as a partial substitute for macroprudential measures, should not be discarded.

Such a set of policies should help increase the pass-through and effectiveness of monetary policy in EMs and advanced economies alike, as well as guaranteeing financial stability as much as possible. They constitute a reasonable basis for a London Consensus.

Notes

[1] For a summary of the data and a theoretical analysis of trade and financial globalisation and their interconnections, see Martin and Rey (2006).

[2] Rey (2013).

[3] Miranda-Agrippino and Rey (2022).

[4] Bruno and Shin (2015); Kalemli-Özcan (2019); Miranda-Agrippino and Rey (2020); Degasperi et al. (2023).

[5] Borio and Zhu (2012); Bauer et al. (2023); Coimbra and Rey (2023); Kim et al. (2022).

[6] Boehm and Kroner (2023) emphasise the importance of US news in driving economic sentiments; Aldasoro et al. (2023) present a rich comparison of domestic and global financial cycles.

[7] Gilchrist and Zakrajšek (2012).

[8] Miranda-Agrippino and Rey (2020). US monetary policy is identified using high frequency instruments (Fed Funds Future; 30-minute windows around monetary policy announcements – see Gertler and Karadi (2015)). Shaded areas are 90% and 95% confidence intervals.

[9] Kaminsky et al. (2005).

[10] Acalin (2023).

[11] Obstfeld and Zhou (2023).

[12] De Leo et al. (2022).

[13] Correlations control for t-1 interest rate. The shaded areas are 90% confidence intervals.

[14] di Giovanni et al. (2021).

[15] Degasperi et al. (2023); Kalemli-Özcan (2019).

[16] Eichengreen and Hausmann (1999).

[17] Chang and Velasco (2001).

[18] Kalemli-Özcan and Unsal (2023).

[19] Rey (2016); Miranda-Agrippino and Rey (2020).

[20] Calvo and Reinhart (2002).

[21] It is reassuring that a series of papers has consistently found that short rates are less correlated to the base country rate for flexible exchange rate countries than for fixed exchange rate countries (Obstfeld et al. 2005).

[22] In the case of some small open economies (Singapore, for example), where transaction costs and exchange rate risks are detrimental for trade, a fixed exchange rate vis-à-vis a currency basket may well be preferred to a flexible rate. Characteristics of countries, such as openness and development of financial markets, as well as the traditional optimum currency areas factors matter for the choice of the optimal exchange rate regime. See Mundell (1961).

[23] Obstfeld et al. (2019); Obstfeld (2015). From a theoretical point of view, Cespedes et al. (2004), for example, analyse the effect of devaluation of the domestic currency on the economy when liabilities are in dollars and show that even in that case, floating exchange rate regimes tend to dominate.

[24] For an interesting discussion on the case of Indonesia see Basri and Sumartono (2023).

[25] Rey (2013).

[26] There are of course other relevant policy considerations linked on the one hand to fiscal policy and on the other hand to the IMF, the global safety net, and the use of Central Bank swap lines. They will not be discussed here due to the lack of space; they would warrant another chapter on their own.

[27] Klein (2012).

[28] Forbes (2021).

[29] But capital controls may be appropriate if there is a great deal of direct cross-border lending and the banking system can be circumvented. For a theoretical model showing the optimality of capital controls in a neo-Keynesian framework even with flexible exchange rates, see Farhi and Werning (2014).

[30] Das et al. (2022).

[31] Baldursson et al. (2023).

[32] Kalemli-Özcan and Unsal (2023).

[33] Obstfeld et al. (2019).

[34] Eichengreen et al. (2011).

[35] Tucker (2018).

[36] Admati and Hellwig (2013).

[37] Forbes (2021).

[38] Goldberg (2023).

[39] Chari (2023).

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Response to Hélène Rey by Paul Tucker

> Constitutional liberty will be best worked out by those who aspire to freedom by their own efforts. You will only overload it by your help, by your principle of interference.
>
> Former prime minister Robert Peel, House of Commons, 1850[1]

I. Introduction

Hélène Rey's chapter on the monetary system joins the project of offering to the developing world a map for how to achieve growing prosperity. I am doubtful about any such project, except in the most modest terms. This is for both broad and more subject-specific reasons.

The highest-level reason is approximately summed up in the quote from former prime minister Peel when trying to persuade the Westminster parliament not to force liberty onto other states. The terms on which political communities manage to establish basic order, and make that order acceptable to their people, creating conditions for cooperation, is highly context-dependent. What has worked for advanced-economy states might cut across another political community's way of life – meaning, most significantly, the deep political values embedded in their collective institutions.

Nor, today, is it in our interests to lecture or prescribe. Less than a decade or so into what might easily be a century-long geopolitical and ideological contest, the rich liberal democracies need friends. That means exercising self-restraint in proselytising our way of life, instead letting it speak for itself.

The point is underlined by the harsh fact that our core institutions have not been working well. Monetary-financial policy falls into that ignoble category. In the past 15 years, we have caused the biggest global financial crisis since the 1930s, then opted for a mix of macroeconomic stimulus that fuelled another bout of speculative excess, and recently have struggled to maintain low and stable inflation. What *we* should learn from that takes up the bulk of my remarks.

Prescription, which I am counselling against, is profoundly different from another kind of endeavour. That involves trying to explain what seems to have worked for us, what definitely has not worked, and which successful measures seem to depend on local conditions and, by contrast, which might

possibly be transferable to other circumstances. That is what, incompletely and rather crudely, I want to attempt concerning 2022 and 2023's monetary-financial problems. In a nutshell, the problem is that we still have not found institutions that are reliably committed to pre-emptive actions to maintain monetary-system stability.

II. Moral hazard runs through delegated regimes for monetary system stability

The two core functions of central banking are easily stated: price stability and banking stability. Because nearly all the money held and used by nearly all of us is the deposit money issued by commercial banks, the two are umbilically linked.[2] Both functions are increasingly delegated by legislators to independent central banks because each depends upon pre-emptive actions in the face of, respectively, inflationary shocks and banking system vulnerabilities. Over the past decade, however, few such independent power holders have acted pre-emptively.

That is a problem of moral hazard, as it involves deviating from mandates. We need, somehow, to make it harder for policymakers to depart from stability-oriented policies.

III. Price stability

The harder case is price stability, for the simple reason that, writing in mid-2023, we do not yet know, for sure, whether monetary policymakers have let inflation out of the bag. Plainly, the energy cost shocks rooted in Russia's war on Ukraine (and the oil-producing states' geopolitical choice not to offset them) raised the price level, and hence for a while headline inflation. It would have been unnecessary and crazy to seek to offset those shocks entirely. Some accommodation made sense. But, at the time of writing, it remains unclear whether inflation will come back to target or settle some way above it, requiring a policy-engineered slowdown.

Just in case that is the outcome, it is not too early to ask why we find ourselves in this predicament. Some possible proximate causes are already clear enough: relying too heavily on monetary policy to revive underlying growth after the Great Financial Crisis of 2007–09; continuing to add to the monetary stimulus even when, during the COVID-19 pandemic, there was extraordinary fiscal support that could have been funded in the capital markets; not heeding contractions in labour supply after the pandemic, which left some economies with excess demand even though they were not growing rapidly; and nearly a decade of forward guidance leaving policymakers on autopilot rather than responsive to shocks.

Behind those various technicalities, deeper forces might have played a part, including a wish to promote 'inclusive growth' (as the Federal Reserve framed it in what looked like an appeal to progressive politicians);

a desire to steer credit to useful places and away from unworthy ones; and an apparent assumption among the political classes that inflation was an earlier generation's problem, making possible a shift to 'monetary activism' (as a British government stipulated in the Bank of England's 2013 Remit).[3] Putting that together, it was as if central bankers could focus on more pressing problems because medium-term inflation explanations were surely anchored to target. But that was always risky because the true anchor was always central bankers' *own* willingness to act pre-emptively, even when that would be unpopular.

1. *Remedies*

While there is no obvious remedy, several measures could be taken to reduce the chances of revisiting the problem anytime soon. One is to strengthen automatic fiscal stabilisers, overcoming politicians' self-interest in sitting on their fiscal hands when monetary policy is constrained (most obviously by the 'zero' lower bound on nominal interest rates).

A second measure, getting closer to the bone, is to make it clearer that central banks should stick to actions that directly serve their core stability mission. The point is hardly to marginalise other public policy objectives. It is, rather, to retighten the harness binding central bank leaders' desire for professional esteem and public prestige – on which the utility of independence depends – to their success in delivering the mission that warranted their extraordinary powers in the first place. Milton Friedman was half onto something, but not what he thought, when in the early-1960s he claimed in a letter to Stanley Fischer: 'the two most important variables in [central bankers'] loss function are avoiding accountability on the one hand and achieving prestige on the other'.[4] What he missed is that, in some circumstances, exposing oneself to accountability can help sharpen incentives, and so offers a route to prestige.

Third, therefore, a lexicographic objective, under which business cycle stabilisation is subordinated to price stability, remains best as it removes ambiguity about the need, at all times, to maintain *securely* anchored medium-term expectations.

IV. Banking system stability

Similar sentiments can be brought to the banking stability mission, where moral hazard problems were at the root of 2023's banking failures – the collapse of Silicon Valley Bank and other large United States regional banks, and the unravelling of Credit Suisse. In the US, the authorities ignored international norms when they formally decided to cease planning for the failure of large regional banks, and did so even though they must have known they did not have a good plan.[5] In Switzerland, meanwhile, the authorities not only set aside a resolution plan discussed for years with international peers, but they also did not refinance an ostensibly well-capitalised bank, which

might have avoided a fire sale of the core business. If there were insufficient unencumbered assets any of them would accept as collateral, the central banks were in a bind (as lending unsecured is for elected fiscal officials).

1. *Complete liquidity insurance for 'safe assets'*

Among remedies, the biggest is to accept that, for a solvent bank, the central bank will act to enable *all* short-term liabilities to be paid out. That implies those with access to central bank liquidity insurance should be required to cover 100% of their short-term liabilities with assets eligible at their central bank, and should pre-position those assets with the central bank (acting, effectively, as a sub-custodian) so that they cannot be used for other purposes.[6]

Access to such insurance cannot credibly be limited to de jure banks unless the state uses a hard-to-amend law to prevent any other kind of intermediary from conducting a systemically dangerous maturity transformation. Except where that condition is met, the insurance should be available to any issuer of 'safe assets', defined as those instruments that users (investors, traders, intermediaries) feel no need to analyse. Like money, they are, as economists put it, information insensitive. And like money, they enjoy network economies, and so are liquid – until some revelation shatters an illusion, there is a run for the exits, and supposedly safe assets become, in a flash, illiquid, or worse.[7]

Under that regime, the amount of capital an issuer of money-like safe assets had to carry against its core banking business would be determined by the excess collateral (known as 'haircuts') required by the central bank. Since central banks suffer political costs when they suffer losses from financial system support operations, they have incentives to be cautious in setting and monitoring haircuts. In other words, in the Western political culture, mitigating moral hazard in the application of banking policy is more incentive compatible for a central bank as lender of last resort (LOLR) than it is for a standard prudential supervisor.

2. *The LOLR and resolution policy for fundamentally bust firms*

Normatively, however, in constitutional democracies such liquidity insurance must be subject to the proviso that the unelected central bankers should not lend to anyone that is fundamentally insolvent. That is a matter of *our* values – specifically, those associated with the separation of powers between executive government and an elected legislature. Lending to fundamentally bust firms distributes resources from longer-term creditors to short-term creditors. In consequence, solvency bailouts and lending to firms that, even after receiving liquidity assistance, will not be able to discharge all their obligations must be reserved to elected politicians, because only they can decently discriminate between different creditors.[8]

When a prospective borrower *is* fundamentally broken but the state wishes to avoid a taxpayer bailout, the distressed intermediary must go into

a bankruptcy or special resolution process that is designed to avoid systemic chaos. This is already agreed policy in all major banking centres, but needs to be applied, as it was not in the US, to all significant banks.

Separately, central banks need to make it clear that they stand ready to lend to a resolved bank in case it (initially) suffers liquidity strains. Some have still not done so, leaving the financial system weaker than it needs to be. Being clear about lending into effective resolutions would give the central banks leverage, via their collateral valuations and haircuts, over the size of recapitalisation a resolution must deliver. Even though it might not be widely grasped, central bankers are vital to making resolution policy credible.

V. Summing up

There might seem to be an awkward tension in this comment. On the one hand, I urge rich states to refrain from preaching and proselytising to poorer and weaker states, who need to find their own way. On the other hand, I seem to advocate certain policies for monetary system stability. Where do I stand?

The former consideration dominates. While IMF programme conditions obviously bite, and are framed for specific circumstances, I think states should take the IMF's routine general recommendations as interesting ideas rather than authoritative (in the sense of having content-independent authority). That is partly because real crises focus the mind, as illustrated by a sad example in the banking field. For half a decade or so from the late-1990s, the IMF started proselytising moving banking supervision away from central banks, favouring integrated all-purpose financial regulators instead. This was after the United Kingdom took that course in 1997. At the time, I thought it was a bad idea for Britain as London's culture would not incentivise information sharing between the regulator and the LOLR. Sadly, that is how it turned out, and we reaped the consequences in 2007. The IMF, dare I say, was barely equipped to judge whether it was a good idea in the UK, let alone whether it was a sensible policy to float for the rest of the world.

A happier but still instructive example is inflation targeting. It started in New Zealand. A few years later it was adopted by Sweden, and then Britain. At the time, there was almost no academic literature on the subject, and international organisations were not proselytising it. That is not a bad model: scan the world for good ideas, and ask whether any might work at home.

So, the reform ideas I float here are just that: my take on some serious local difficulties in the rich world, which might or might not be of use to those bearing responsibility elsewhere. This leaves an awkward but important question hanging in the air: what notice developing countries should take of the plethora of standards and codes pushed their way by the IMF and other international bodies and groups. Members of the G20, including some large

EM economies, overtly sign up to them and are in the room when they are being drawn up. This is as close to consent as it gets in international affairs.

Which other states are in a broadly equivalent position depends on the subject matter and, therefore, which international body draws up a standard. Except where a state has been properly involved (entailing something like consent), I suggest they ask themselves whether it would be useful for them, all things considered, to tie themselves to the mast of a particular standard.

The calculus would be different if IMF programme conditions were overtly (and credibly) linked to compliance with codes and standards. But they are not. And if they were, agreeing the standards and codes might well end up involving more demanding processes: what some would misleadingly term global democracy. Given geopolitics, that is not on offer.[9]

Years ago, perhaps a decade before I left office in late-2013, I was visited by a very senior Indian official who asked whether they should bow to international pressure to liberalise capital flows. My suggestion was that they listen very carefully to the substantive arguments of everyone who tried to persuade them one way or another, but without paying much notice of where the advice came from, as few concerned would be around to take responsibility if the choice backfired. Indian officials had to make up their own minds. I did not know at the time that, in a tiny way, I was echoing Peel.

Notes

[1] Hurd and Young (2010).

[2] Tucker (2018).

[3] Smialek (2021); HM Treasury (2013).

[4] Fischer (1990).

[5] Systematic Risk Council (2019).

[6] King (2016); Tucker (2019).

[7] Holmstrom (2015).

[8] Tucker (2020).

[9] Tucker (2022).

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Response to Hélène Rey by Şebnem Kalemli-Özcan

This paper is a clear description of what we have learnt since the Washington Consensus. The main lesson is the importance of the GFC, thanks to Hélène Rey's great work on this topic. The paper describes in great detail alternative policies to deal with the GFC.

I agree with the paper overall. In this discussion I will add some newly available evidence, with a focus on EMs. This evidence is based on the new integrated policy framework developed by the IMF, a Washington institution that seems to be moving away from the Washington Consensus.

I start by highlighting an important theme in Rey's paper, namely the heterogeneity of both borrowers and lenders. This is very important as we move away from the Washington Consensus, because no two countries are the same in terms of capital flows, risk sentiment of investors, size of foreign currency debt, credibility of monetary policy, or institutional environment. Such heterogeneity on the borrower side also affects the lending side, as lenders price loans to reflect the heterogeneity of borrowers. To think about regulation and other related policies, we need to think about differences in the risk-taking behaviour of the lender. Hence, we may need different regulation for global and domestic lenders. These important themes are all in Rey's paper but they are worth stressing.

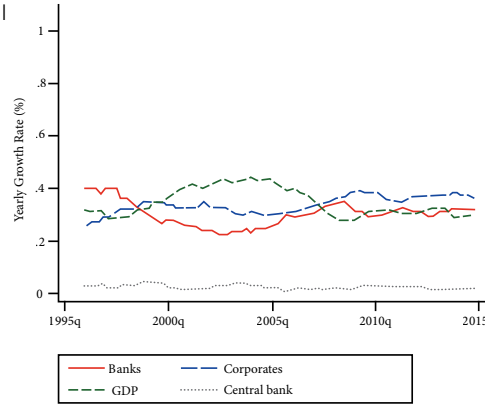
The first panel of Figure 7.4 shows that debt accounts for 70% of EM external liabilities, and that three kinds of borrowers – sovereigns, banks, and corporates – have roughly equal shares in this stock of debt. The middle panel focuses on portfolio debt and shows that most of the portfolio investment into emerging markets is directed to sovereigns (almost 70%). The last panel shows loans, where corporates and banks, but not sovereigns, have the lion's share.

Figure 7.5 demonstrates the effect of the GFC on emerging markets. It focuses on a typical EM, Turkey, using my work on the subject. The figure plots a period where Turkey is a representative EM, in the sense of having current account deficits, high growth and low inflation, starting in 2003. The period includes the year 2013, when the Turkish central bank was deemed the best across EMs.[1]

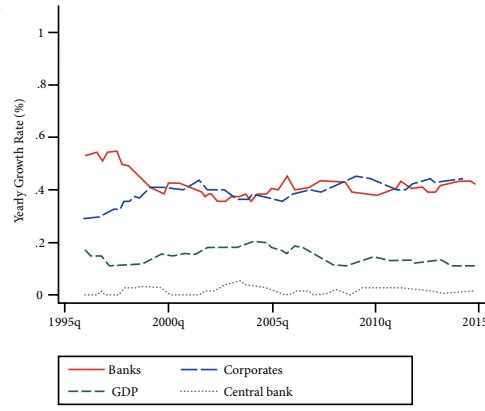
The black line in Figure 7.5 is a measure of global risk appetite, VIX. We can see strong co-movement between VIX and the average domestic lending rate in the top left panel. The top right panel shows the capital flow side of this process. Capital flows correlate negatively with VIX: when VIX falls, capital flows to the domestic financial intermediary sector (i.e., banks), rise.[2]

Figure 7.4: Debt in emerging markets

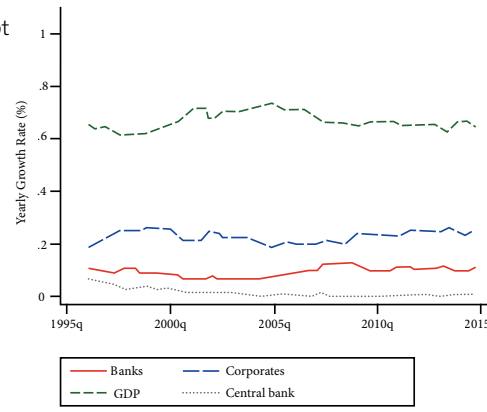
(d) Share of Sectors in Total External Debt Liabiliies - Emerging



(e) Share of Sectors in Other Investment Debt Liabilities - Emerging

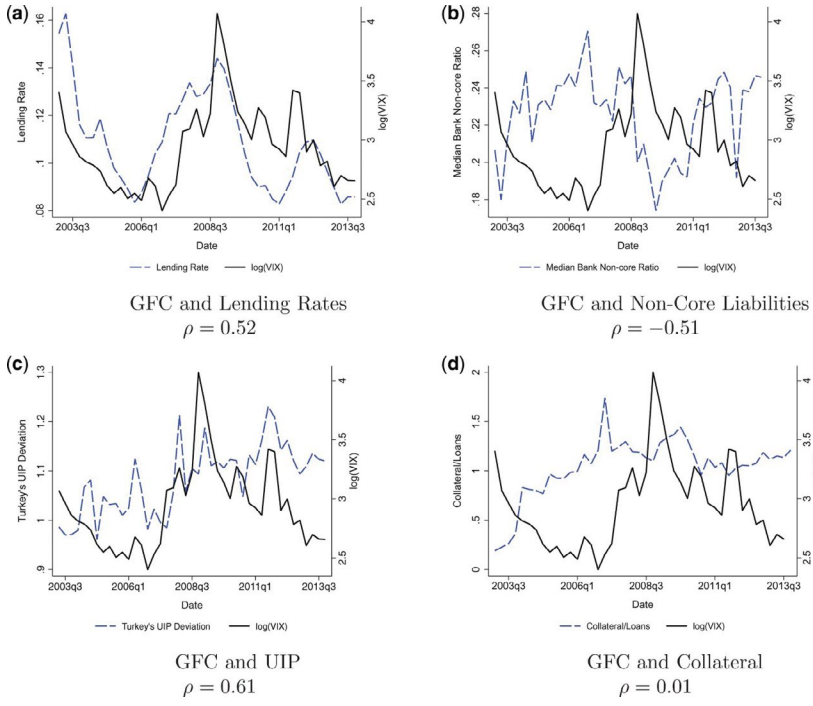


(f) Share of Sectors in Portfolio Debt Liabilities - Emerging



Source: Figure 3 [d, e, and f] in Avdjiev et al. (2022),[3] reproduced with permission from the *Journal of the European Economic Association*/Oxford University Press.

Figure 7.5: Macro facts



Source: Figure 1 in di Giovanni et al. (2022),[4] reproduced with permission from *The Review of Economic Studies*/Oxford University Press.

The banks with external liabilities have high non-core liabilities, since core liabilities are composed of domestic household deposits only. These so-called high non-core banks tend to cut rates and lend more during the boom phase of the GFC compared to low non-core banks, and vice versa during the GFC downturn.

The bottom panels show other factors that are also important for the transmission of the GFC. The bottom left panel looks at the deviation of UIP. This matters because it reflects the funding cost in local currency versus dollars – and, as Rey explains, one of the issues we need to consider is how to develop local currency bond markets. UIP deviations are reflections of investors' demand for local currency versus foreign currency bonds. The figure shows that UIP never holds in EMs and the gap is always positive, meaning excess returns for EM currencies.

The figure also shows the correlation between UIP and VIX, reflecting the fact that when risk is high it is harder to borrow in local currency and easier to borrow in dollars. If a country is unable to borrow in dollars for other reasons – say, sovereign default risk – then it is in a tough spot, because all sources of funding begin to close off.

The final panel highlights one difference between an emerging market and an advanced economy like the United States. In emerging markets, there is zero correlation between collateral values and the GFC. This is because capital flows not just into the stock market, amplifying asset values used as collateral, but (as shown in Figure 7.4) also into domestic banks and global banks operating locally.

In my work with Gita Gopinath and Pierre De Leo, we showed the disconnect between policy rates and market rates in emerging economies.[5] Market rates go in an opposite direction in emerging markets than they do in advanced economies in response to US monetary policy shocks. Given that disconnect, monetary policy is unlikely to be very effective in EMs, so let me end by discussing what other policies could be used to greater effect.

Using a newly available data set from the IMF, we are also able to document what policies each country uses, according to what they report to the IMF.[6] We can see that most countries use macroprudential (domestic) or macroprudential/capital flow management policies. In fact, up to 80–90% of countries used these policies between 1996 and 2020.

An example of a pre-emptive capital flow management used by Brazil but not by Mexico before the 2013 surge in US Treasury yields known as the 'taper tantrum'.[7] UIP deviation increases more in Mexico than in Brazil, because Brazil deployed a pre-emptive prudential policy and Mexico did not. Our paper proposes and implements an econometric identification strategy to prove this statement causally.

The policy implications of all this accumulated evidence are potentially huge. By reducing the impact of risk-off shocks (financial shocks) on countries' external funding costs and exchange volatility, pre-emptive policies permit countries to enjoy continued access to international capital markets during troubled times. This is an important policy lesson for the London Consensus. Turbulent times are precisely when countries most need access to international capital markets, and also when policies typically used in response to a shock, such as monetary policy, may be least effective, as originally argued by Hélène Rey and confirmed by the data in my own work summarised previously. There is an importance nuance here that shows the power of Hélène's findings. Even if you have an autonomous policy – that is, you set your monetary policy differently than, say, the Federal Reserve or the European Central Bank – the existence of the GFC means that policy is less effective in stabilising your own economy.[8]

Notes

[1] Adjiev et al. (2022).

[2] The blue line plots the banks' external funding from foreigners called non-core liabilities.

[3] di Giovanni et al. (2022).

[4] Things have changed drastically in Turkey after 2017, but this latter period is not covered in this figure.

[5] De Leo et al. (2022).

[6] Das et al. (2022).

[7] Das et al. (2022).

[8] Kalemli-Özcan (2019).

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