

Ocampo, José Antonio

**Working Paper**

## Capital account liberalization and management

WIDER Working Paper, No. 2015/048

**Provided in Cooperation with:**

United Nations University (UNU), World Institute for Development Economics Research (WIDER)

*Suggested Citation:* Ocampo, José Antonio (2015) : Capital account liberalization and management, WIDER Working Paper, No. 2015/048, ISBN 978-92-9230-937-4, The United Nations University World Institute for Development Economics Research (UNU-WIDER), Helsinki, <https://doi.org/10.35188/UNU-WIDER/2015/937-4>

This Version is available at:

<https://hdl.handle.net/10419/126387>

**Standard-Nutzungsbedingungen:**

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

**Terms of use:**

*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*

UNU-WIDER

30 YEARS OF RESEARCH  
FOR DEVELOPMENT

WIDER Working Paper 2015/048

## **Capital account liberalization and management**

José Antonio Ocampo\*

May 2015

**Abstract:** This paper reviews the history and controversies associated with capital account management. It first looks at the transition from the acceptance at the Bretton Woods conference of capital account regulations as a normal policy instrument to the liberalization of the capital account, first in developed countries and later in developing countries. This is followed by an analysis of the risks of capital account liberalization, particularly for emerging and developing countries, and the role and experience of capital account regulations as a complementary instrument of counter-cyclical macroeconomic policy, and as a financial stability tool – as part of the family of ‘macroprudential regulations’.

**Keywords:** capital account regulations, capital account management, capital account liberalization  
**JEL classification:** F02, F33, F36.

**Acknowledgements:** This is a chapter of a book on the international monetary system prepared for the United Nations University’s World Institute for Development Economics Research (UNU-WIDER), which develops on the theme of the WIDER Lecture delivered by the author on this issue (Ocampo 2011). I am extremely grateful to Bilge Erten, Kevin Gallagher, Stephany Griffith-Jones, Shari Spiegel and Joseph E. Stiglitz, with whom I have written on the topics of this chapter. I draw in part from our common work. I also thank Andrés Lizcano for his research assistance.

---

\*School of International and Public Affairs, Member of the Committee on Global Thought and co-President of the Initiative for Policy Dialogue at Columbia University. Formerly Under-Secretary General of the United Nations for Economic and Social Affairs, Executive Secretary of the Economic Commission for Latin America and the Caribbean, and Minister of Finance, Minister of Agriculture and Director of the National Planning Department of Colombia. jao2128@columbia.edu

This study has been prepared within the UNU-WIDER project ‘Macro-Economic Management (M-EM)’ directed by Tony Addison.

Copyright © UNU-WIDER 2015

ISSN 1798-7237 ISBN 978-92-9230-937-4

Typescript prepared by Jennifer Stanley Smith for UNU-WIDER.

UNU-WIDER gratefully acknowledges the financial contributions to the research programme from the governments of Denmark, Finland, Sweden, and the United Kingdom.

The World Institute for Development Economics Research (WIDER) was established by the United Nations University (UNU) as its first research and training centre and started work in Helsinki, Finland in 1985. The Institute undertakes applied research and policy analysis on structural changes affecting the developing and transitional economies, provides a forum for the advocacy of policies leading to robust, equitable and environmentally sustainable growth, and promotes capacity strengthening and training in the field of economic and social policy-making. Work is carried out by staff researchers and visiting scholars in Helsinki and through networks of collaborating scholars and institutions around the world.

UNU-WIDER, Katajanokanlaituri 6 B, 00160 Helsinki, Finland, wider.unu.edu

The views expressed in this publication are those of the author(s). Publication does not imply endorsement by the Institute or the United Nations University, nor by the programme/project sponsors, of any of the views expressed.

## 1 Introduction

The abandonment of the gold standard during the Great Depression of the 1930s and the rise of Keynesian thinking led to the view that domestic macroeconomic objectives, notably that of guaranteeing full employment, should prevail over the need to maintain both fixed exchange rates and open capital accounts. The view that capital flows had had destabilizing effects in the 1920s and 1930s also shifted policy opinion in favour of managing the capital account. Capital account regulations<sup>1</sup> and foreign exchange controls became widespread features of economic policy management, even in developed countries.

The 1944 Bretton Woods Agreement followed this then mainstream view. Countries were allowed to regulate capital flows according to their domestic policy priorities. The aim of rebuilding international trade was reflected, nonetheless, in the commitment to eventually liberalize all restrictions on trade transactions – i.e., current account convertibility. Fixed exchange rates were also viewed as essential to rebuild an orderly international trading system. Based on the experience of the 1920s and 1930s, speculative capital flows were seen as an obstacle to this objective. This provided an additional argument for regulating capital flows. Countries were nonetheless left with the possibility of modifying the exchange rate under ‘fundamental’ external imbalances.

The early post-war years were also characterized by the collapse of international capital markets. The major early debates on the capital account were related to capital flight from Western Europe to the USA. With the reconstruction of the global financial system since the late 1950s, in the form of the Eurodollar market, capital account volatility became again a major source of large balance of payments crises. Developed countries responded again by strengthening capital account regulations to manage these crises, particularly the severe international financial instability that characterized the Bretton Woods system of fixed exchange rates and dollar–gold convertibility in the mid-1960s and the years that followed its collapse in 1971-73. In the developing world, aside from a few countries, strong capital account regulations continued to be the rule throughout this period.

The turn toward capital account liberalization since the mid-1970s, which started with the USA but soon saw other developed countries follow suit, together with booming capital flows, accelerated by the recycling of petrodollars, would turn the mainstream viewpoint upside down, with capital account openness rapidly becoming the new orthodoxy. In this context, and after capital account liberalization had been adopted by developed countries, the pressure on emerging and developing countries to liberalize their capital accounts became a central issue in policy and academic debates. Despite major crises, capital account liberalization spread to the developing world in the 1990s and 2000s. The IMF’s Managing Director Michel Camdessus even tried to incorporate capital account convertibility in the IMF Articles of Agreement in 1997, but this initiative failed to gather the necessary consensus.

The North Atlantic financial crisis represented a new, partial turning point in this debate. As part of the recognition that financial stability requires strong prudential regulations, including regulations that focus on the macroeconomic dimensions of financial stability, managing capital flows is seen now as part of the family of ‘macroprudential’ regulations, particularly for emerging countries subject to strong boom–bust cycles in external financing. This has been reflected in a moderate reversal of the capital account liberalization trends that have taken hold since the mid-

---

<sup>1</sup> I will follow my early work (Ocampo 2003b) to refer to capital account regulations or management rather than ‘controls’. As we will in Section 3 of this paper, these regulations can adopt different modalities.

1970s, as well as in the IMF's adoption of an 'institutional view' on capital account liberalization and management in 2012. Nonetheless, this has not settled the debate. One central element of current controversies is whether regulations are effective or not in a world in which free capital movements have become the rule, and whether there should be some form of international co-ordination to guarantee their effectiveness and/or avoid spillovers for countries not willing to regulate the capital account.

This paper analyses the controversies around capital account management and the experiences of capital account regulations in emerging economies in recent decades. It looks first at the evolution of capital account liberalization since the 1970s and its relation to boom–bust cycles in global finance, with a focus on emerging economies. It then reviews the controversies around the effects of capital account liberalization and the evidence of success or failure with capital account management.

## 2 The return of global finance and capital account liberalization

The two parents of the Bretton Woods arrangements, John Maynard Keynes and Harry Dexter White, shared the criticism of the liberal financial order that had prevailed until the early 1930s. In particular, they saw free capital movements as one of the major sources of financial instability and causal to the collapse of the world economy in the 1930s, and thus, in the discussions that preceded the 1944 agreement, strongly defended countries' rights to the full freedom to manage their capital accounts (Keynes 1942-43; Steil 2013: Ch. 6). This reflected, above all, their view that international capital movements should not be allowed to disrupt the policy autonomy of states to fix interest rates according to domestic priorities, particularly those necessary to achieve the overriding objective of guaranteeing full employment. The liberal financial order was also seen as incompatible with stable exchange rates, which were conceived as essential for the reconstruction of international trade in the post-war years. Based on the experience of the 1920s and 1930s, pro-cyclical capital flows were indeed viewed as a source of the foreign exchange disturbances and competitive devaluations that led to widespread use of protectionism and the collapse of the multilateral trading order in the 1930s.

As part of the commitment to rebuild the international trading system, the Bretton Woods Agreement included the obligation on countries to eventually eliminate regulations affecting trade and, more broadly, *current account* transactions, but gave them full freedom to manage *capital account* operations according to their domestic policy priorities. To increase the effectiveness of capital account regulations, in his early contributions to the debate White even flirted with the idea of mandatory international co-operation to guarantee that capital account regulations were fully effective. The opposition of US financial interests, which argued that such regulations should be temporary at best, led to significant change in this view, and even to the proposal by the USA that countries should facilitate the international flow of productive capital, which was supposed to be the source of stable capital flows (Helleiner 1994: Ch. 2).

The final agreement included the provision that 'Members may exercise such controls as are necessary to regulate international capital movements, but no member may exercise these controls in a manner which will restrict payments for current transactions' (Article VI-3 of the Articles of Agreement). To reinforce this, it also set the principle that IMF funds should be facilitated to finance balance of payments deficits associated with current account deficits, but not those originating in the capital account. So, it was also agreed that, with the exception of the reserve tranche, members could 'not use the Fund's general resources to meet a large or sustained outflow of capital' (Article VI-1). It did include some provisions on co-operation, and particularly that: 'Exchange contracts which involve the currency of any member and which are contrary to the

exchange control regulations of that member maintained or imposed consistently with this Agreement shall be unenforceable in the territories of any member. In addition, members may, by mutual accord, co-operate in measures for the purpose of making the exchange control regulations of either member' (Article VIII-2b). However, whereas the freedom to regulate capital flows has been extensively used by IMF members, these provisions on co-operation have meant little in practice.

Contrary to the spirit of these agreements, the early post-war negotiations between the USA and the UK forced the latter to liberalize its capital account. Thus, in 1945 the USA offered a large 50-year loan at a low interest rate, plus a significant write-down to clean up the liabilities that the UK had assumed with the so-called 'Lend-Lease' military co-operation, but conditioned this support on convertibility for current sterling-area operations within 15 months. According to these commitments, the UK adopted convertibility on 15 July 1946, but was forced to suspend it slightly over a month later, on 20 August (Steil 2013: 276-83, 309-11). In contrast, the UK and other European countries asked for co-operation to control capital flight and force a return of those capital flows, but these pressures ran against the financial interests of the USA, which blocked any action in that regard. Eventually, the USA, the European Allies and Japan settled on the broad-based use of capital account regulations outside the USA, gradual current account liberalization – facilitated within Europe by the European Payments Union, created in 1950 – and the Marshall Plan and parallel co-operation with Japan to finance both reconstruction and the severe 'dollar shortage' experienced by the US allies (Helleiner 1994: Ch. 3). The 1949 devaluations, which were particularly large for Japan and the UK, further contributed to the balance of payments adjustment of the US allies. All this helped to facilitate a more stable period that eventually did away with the dollar shortage. Current account convertibility was fully restored in major Western European countries in 1958 and, in a more administered way, by Japan in 1964, but capital flows continued to be strongly regulated in both cases.

The reconstruction of private global finance began to take shape in the late 1950s in the Eurodollar market – or the Eurocurrency market, as it later spread to other currencies. The development of that market had followed several initiatives adopted by British authorities since the early 1950s to reconstruct London's role in global finance, which went beyond its role in the sterling area (which continued to be subject to capital account regulations). The return of global finance came with the pro-cyclical pressures exercised by capital account movements: outflows in countries undergoing balance of payments deficits and inflows in those facing surpluses. The radical shift from the dollar shortage of the first decade or so of the post-war years to pressures on US gold reserves, generated by US balance of payments deficits, implied that the USA had now joined the group of countries using some form of regulation of capital movements, starting with the 1963 interest equalization tax. The growing disturbance in the international monetary system generated increasing capital account pressures as the decade advanced, which led in turn to strengthened regulations focused on either inflows (Germany being a pioneer in this regard) or outflows (including France and the UK in Western Europe, but also the USA), depending on the balance of payments positions of the individual countries. The active use of capital account regulation continued after the collapse of the original Bretton Woods system of dollar–gold convertibility and fixed exchange rates in 1971-73.

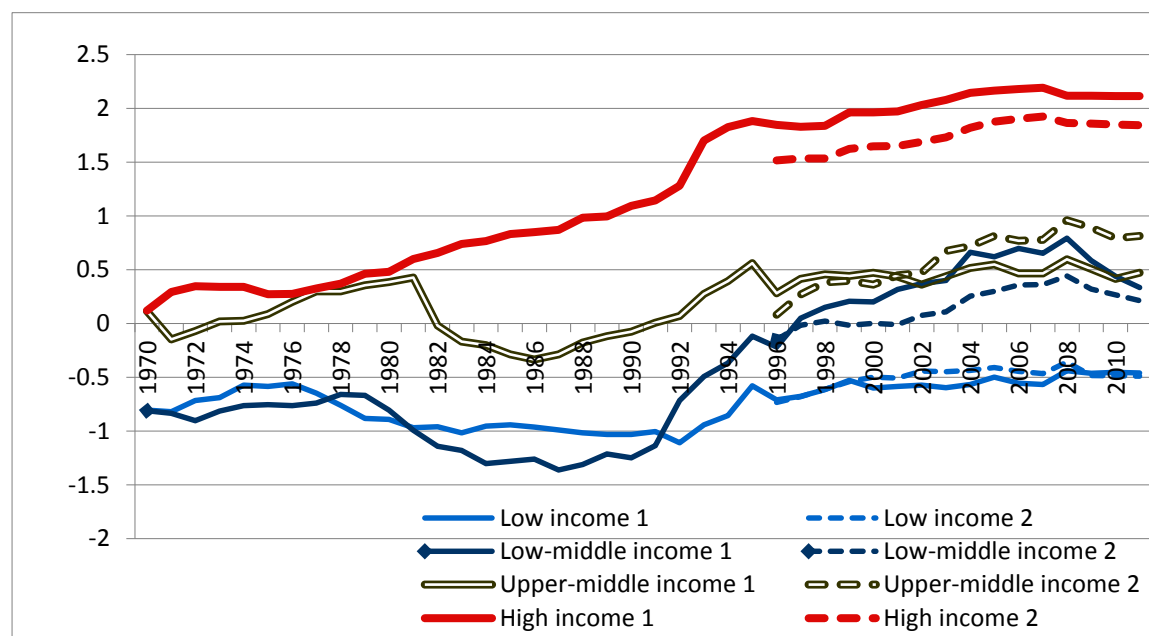
The shift toward liberalizing capital flows started with the USA in 1974 but then spread to the rest of the developed world in the second half of the 1970s and through the 1980s, and was essentially completed by the early 1990s. This is shown in Figure 1, based on the well-known index of capital account liberalization designed by Chinn and Ito (2006, 2008).<sup>2</sup> Liberalization proceeded at a

---

<sup>2</sup> The index has a minimum value of -1.86 and a maximum value of 2.44.

gradual but fast rate in Western Europe, Japan and Oceania (Australia and New Zealand) (see the regional breakdown in Table 1). This coincided with an explosion of global finance, enhanced by the recycling of petrodollars. The move toward flexible exchange rates also contributed to the explosion of global finance, as it created a demand for asset diversification.

Figure 1: Chinn-Ito index of capital account openness



Notes: The series indicated by 1 refer to 104 countries; those indicated by 2 refer to the larger sample of 174 countries. For classification according to level of development, see footnote 4 in the main text.

Source: [http://web.pdx.edu/~ito/Chinn-Ito\\_website.htm](http://web.pdx.edu/~ito/Chinn-Ito_website.htm).

Table 1: Chinn-Ito index of capital account openness by region

	Smaller sample (104 countries)						Larger sample (174 countries)		
	1970	1980	1990	1997	2007	2011	1997	2007	2011
North America	2.439	2.439	2.439	2.439	2.439	2.439	2.439	2.439	2.439
Oceania	-0.641	-0.113	2.439	2.175	1.780	1.780	0.655	0.252	0.460
Europe	-0.231	0.083	0.784	2.159	2.357	2.214	1.009	1.750	1.650
Asia	-0.534	-0.147	-0.147	-0.089	-0.028	0.017	-0.287	-0.137	-0.206
Latin America and Caribbean	0.109	-0.100	-0.922	0.711	1.333	1.019	0.212	0.719	0.457
Middle East and North Africa	-0.643	-0.514	-0.470	-0.192	0.293	0.376	0.388	0.860	0.840
Sub-Saharan Africa	-0.961	-0.901	-1.042	-0.850	-0.740	-0.651	-0.728	-0.536	-0.489
Memo: Developed OECD	-0.007	0.342	1.071	2.035	2.319	2.215			

Source: [http://web.pdx.edu/~ito/Chinn-Ito\\_website.htm](http://web.pdx.edu/~ito/Chinn-Ito_website.htm).

Capital account liberalization demanded, in turn, new forms of intervention. The most important was liquidity financing during periods of strong tension in capital markets through 'lending of last resort', mainly provided by swap arrangements among the central banks of major developed countries, and particularly the US Federal Reserve, given the prominent role of the US dollar in the global monetary system. This is how the tensions generated by the 1987 US stock market crash, the 11 September 2001 terrorist attacks on the USA, and the 2007-09 North Atlantic financial crisis were managed. The latter also included, in large part, funding distributed by the European Central Bank to countries of the European periphery through the liquidity provided by the payments system (the so-called TARGET2). The new interventions unleashed by the expansion

of global finance also included the creation of the Basel Committee on Banking Supervision in late 1974 to co-operate and harmonize prudential regulation of banking systems. This was a clear response by the Group of Ten to the disruption in international financial markets after the collapse of the original Bretton Woods arrangements, in particular the bankruptcy generated by the foreign exchange losses made by some banks active in the Eurocurrency market.<sup>3</sup> As became clear in due time, and notably during the North Atlantic financial crisis, regulation clearly caused the explosion of global finance to lag.

Capital account liberalization came with a lag in the emerging and developing world.<sup>4</sup> Indeed, it experienced a reversal in the 1980s, when several middle-income countries actually reinforced their regulations (see Figure 1). This was particularly noticeable in Latin America, where there was a large number of middle-income countries with open capital accounts in the late 1970s, prior to the debt crisis they experienced in the 1980s, the first regional crisis in the new world of global finance (see Table 1). The liberalization process speeded up in the 1990s, led by Latin America. Lower middle-income countries then caught up with their high middle-income partners. However, the diversity of capital account regimes in these two country categories meant that the average level of liberalization remained significantly below that of high-income countries. Liberalization was limited in low-income countries. The trends toward liberalization also seem to have reached a peak at the turn of the century, with the East Asian and, perhaps even more so, the North Atlantic crises, representing a turning point toward a moderate reversal of the liberalization trend (more on this in Section 4). Looking at trends by region, Latin America and the Caribbean continued to have more open account regimes relative to the Middle East and North Africa, Asia and, particularly, Sub-Saharan Africa.

The two major problems for emerging and developing countries were the particularly strong pro-cyclical swings in financing and the associated macroeconomic risks they faced (Prasad et al. 2003; Ocampo, Kregel and Griffith-Jones 2007: Ch. 1) and, in contrast, the lack of the ‘financial safety net’ provided by swap arrangements between central banks, which essentially benefited only developed countries until very recently – and, even recently, only in a very partial manner.<sup>5</sup> What this implies is that the integration of developing countries into global financial markets is necessarily a *segmented integration*: an integration into a market segmented by risk categories, in which high-risk borrowers are subject to strong pro-cyclical swings and higher and more volatile risk premiums (Frenkel 2008).

The greater volatility of financial flows to emerging and developing countries is shown in Figure 2. As can be seen, these countries have experienced four boom–bust cycles in external financing since the mid-1970s. The first boom took place in the second half of the 1970s, and was strongly associated with the recycling of petrodollars, and followed by a sharp downturn associated with the Latin American debt crisis of the 1980s. A new boom was experienced from 1991 to mid-

---

<sup>3</sup> Germany’s Bankhaus Herstatt in June 1974 and the Franklin National Bank of New York in October of the same year.

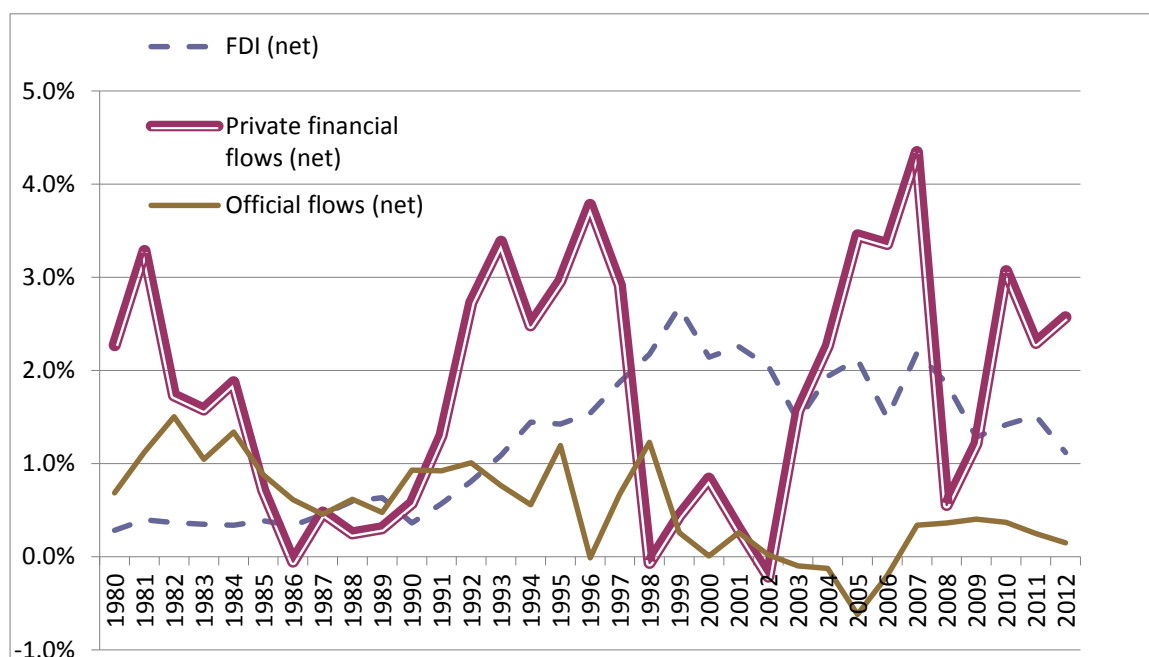
<sup>4</sup> The 2000 World Bank classification is adopted here to classify countries according to level of development, as it reflects much better the relative standing of different countries and regions of the world during the whole period covered in the analysis.

<sup>5</sup> The US Federal Reserve extended the swap credit lines to a few emerging economies (Brazil, Republic of Korea, Mexico, and Singapore) during the peak of the North Atlantic crisis, but only temporarily. There is also a current wave of swap arrangements among some emerging economies, with China as the major player, and two multiple-country arrangements: the Chiang Mai Initiative of ASEAN+3 (Association of South East Asian Nations Plus Three) between China, Japan and the Republic of Korea, launched in 2000, and the new BRICS (Brazil, Russia, India, China and South Africa) contingency reserve arrangement, approved in 2014.



1997; it was temporarily interrupted by the Mexican crisis of December 1994, and finally ended with the series of crises in the emerging world that started in Thailand in July 1997 and then spread to other East Asian economies, Russia, Latin America (led by Argentina and Brazil) and Turkey.

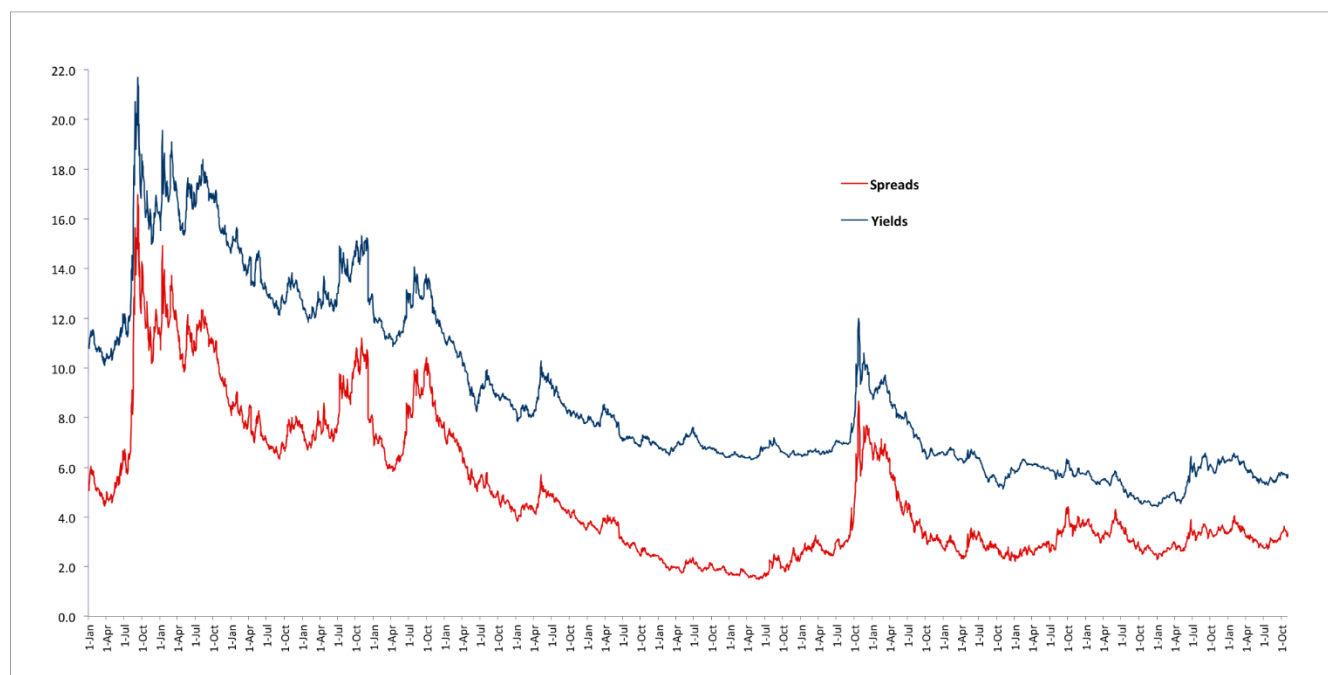
Figure 2: Capital flows toward emerging and developing countries (% of GDP)



Source: Author's estimation based on data from the Institute of International Finance.

The third boom then took place as part of the broader global financial expansion of 2003-07. It started to weaken after the crisis of the subprime mortgage market in the USA in the summer of 2007 and the subsequent crises of several US and European financial institutions, and ended with the worst collapse of global finance since the Great Depression of the 1930s, after the bankruptcy of US investment bank Lehman Brothers in September 2008. However, in contrast to the two previous downturns in financial flows to emerging and developing countries, this downturn was much shorter, thanks to the strong expansion in global liquidity generated by the US Federal Reserve and the central banks of other developed countries central, and the relative strength of emerging and developing countries. Indeed, flows toward these economies started to recover less than a year after the collapse of Lehman Brothers, which was followed by a new boom in 2010-13. This boom has weakened since the announcement of the tapering of Federal Reserve asset purchases in May 2013, which led to a gradual reduction in such purchases that ended in October 2014. This, in addition to other events in global markets, notably the end of the 'super-cycle' of commodity prices, may lead to the end of this fourth cycle.

Figure 3: Emerging economies – spreads and yields of sovereign bonds, 1998-2014



Source: Author's elaboration based on data from JP Morgan.

These financing cycles, but also the variable intensity of downturns, are also visible in the evolution of sovereign risk spreads (referred to simply as spreads in the remainder of this paper) and yields of bonds from emerging economies. Figure 3 reproduces the history of these two indicators since the end of the second cycle. Spreads and yields rose dramatically, particularly after the Russian default of August 1998, remained very high for around four years, due to new crisis events elsewhere in emerging markets, and only returned in the first months of 2003 to the same levels as in the first semester of 1998. Spreads fell substantially through the third aforementioned boom and reached their recent historical lows prior to the US subprime crisis during the (northern hemisphere) summer of 2007 and then rose sharply after the Lehman Brothers collapse. However, emerging economies' bond spreads and yields remained well below the levels of the late 20th and early 21st centuries, and although spreads never returned to pre-subprime crisis levels, yields did fall to pre-crisis levels by late 2009, and continued to fall, reaching historical lows in early 2013, prior to the Federal Reserve announcements in May of that year. The significant reduction in US Treasury bond yields, which serve as the reference to estimate spreads of other agents, since the North Atlantic crisis helps to explain such low yields. What is more remarkable is that emerging economies' spreads were only marginally affected during the worsening of the crises of the peripheral European economies in 2010-12, and have been only moderately affected by Federal Reserve tapering in 2013-14.

One element that makes emerging economies and developing countries particularly sensitive to disturbances in developed countries' finance is the relatively small share they have in global finance. This is shown in Table 2, which estimates the shares of different issuers in the total supply of international bonds and notes. The share of emerging and developing economies peaked at 14.8 per cent in December 1997 and shows a strong cyclical pattern. The share would be even lower if we included US domestic bonds, which can be seen as international assets, given the role of the US dollar as the major global currency. What this means is that small ripples in developed countries' financial markets can generate massive disturbances in financial flows toward emerging and developing countries.

For these economies the mix of higher volatility in finance, in part associated with this fact, and the perception of emerging-market assets as risky, together with the lack of adequate financial safety nets, is what has generated the need for ‘self-insurance’ in the form of large accumulations of foreign exchange reserves, a topic that will be analysed in another paper. This ‘self-insurance’ partly explains, however, the reduced intensity of most recent downturns in financial flows toward emerging and developing countries. In turn, the major disturbances in global financial markets have generated a partial return to more intensive capital account management in some emerging and developing countries, and a nuanced defence of capital account regulations by the IMF, two issues to which we will return in Section 4 of this paper.

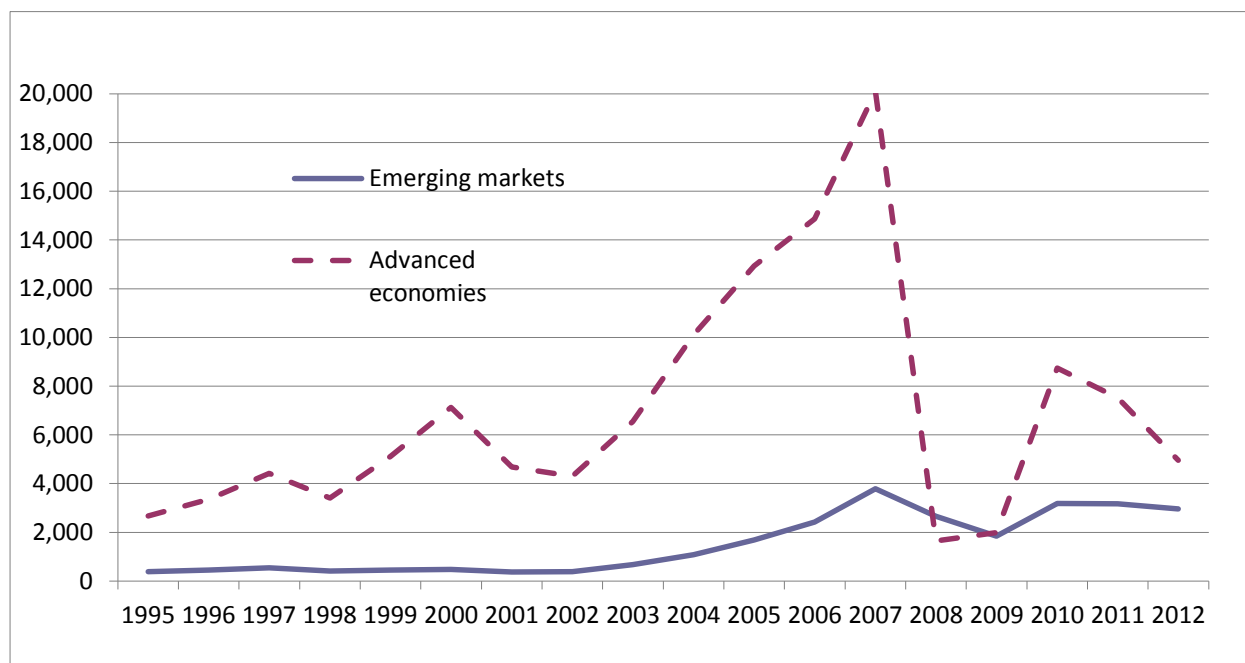
Table 2: International bonds and notes, by nationality of issuer, in %

	Dec. 1980	Dec. 1990	Dec. 1997	Dec. 2002	Dec. 2007	Dec. 2013
Developed countries	70.1	79.8	74.5	83.9	88.3	81.0
North America	23.5	17.9	18.2	28.0	22.0	16.7
Developed Europe	36.0	35.8	44.7	51.1	62.0	59.9
Developed Asia	10.6	26.0	11.6	4.8	4.3	4.4
Offshore centres	0.5	0.2	1.3	1.6	1.3	1.5
Emerging and developing	9.3	6.9	14.8	8.6	6.7	10.9
Africa and Middle East	3.1	0.3	0.5	0.6	0.9	1.5
Asia and Pacific	1.1	1.7	4.5	2.1	1.9	3.4
Emerging Europe	0.4	0.7	1.7	1.5	1.7	2.8
Latin America and Caribbean	4.7	4.2	8.1	4.4	2.2	3.3
International organizations	20.1	13.1	9.4	5.9	3.7	6.6

Source: Bank of International Settlements.

Financial cycles are, of course, a broader feature of financial markets, as underscored by the classic analysis of this issue by Charles Kindleberger (see the most recent edition of his classic book in Kindleberger and Aliber 2011), and more recently emphasized by Reinhart and Rogoff (2009). Indeed, according to the IMF, financial market volatility has increased over time and has spread to transactions that are generally considered to be less volatile – particularly foreign direct investment IMF 2011c: Ch. 4). Indeed, one of the most remarkable features of the 21st century has been the very strong boom–bust cycle experienced by cross-border finance between developed countries. According to the McKinsey Global Institute (2013), cross-border flows among developed countries reached a level in 2007 which was almost five times the average of 1995-2002 but then in 2008-09 fell to a very small fraction of this boom level before experiencing a partial recovery in later years (Figure 4). The collapse of cross-border finance was particularly sharp for peripheral European countries, which this time displayed behaviour patterns not unlike those of emerging economies in previous decades, made massive use of the liquidity provided by the European Central Bank payments system, and had to be bailed out by a mix of European and IMF packages.

Figure 4: Total capital flows by country groups (billion US\$)



Notes: Capital inflows include equity, FDI, bonds and loans and deposits; capital outflows include equity, FDI, bonds, loans and deposits and reserves.

Source: McKinsey Global Institute.

The volatility of finance and its reflections on global financial markets has been the subject of heated debate in recent decades, as well as equally sharp controversies around the virtues and costs of the capital account liberalization that took place since the 1970s and the usefulness of stronger regulation of cross-border financial flows. Most of these debates related to emerging and developing countries, but as we will see they can be equally relevant for (at least some) developed countries. These are the issues to which we now turn.

### 3 Effects of capital account liberalization

#### 3.1 Boom–bust cycles and associated market failures

Advocates of capital market liberalization believed that it would increase economic growth and efficiency, reduce risk, strengthen macroeconomic discipline and promote institutional development (see, among others, Mishkin (2006), and Kose et al. (2009)). Opening up the capital account would, according to this view, improve the allocation of savings and, therefore, growth. It would enhance stability by allowing countries to tap into diversified sources of funds to finance consumption and investment. It would also have ‘collateral benefits’, which include financial market and institutional development, better governance, and macroeconomic discipline.

The basic problem with this view is that it is predicated on well-functioning capital markets (e.g., limited information imperfections and perfect forecasting of future events) and inter-temporal smoothing, characteristics that are generally absent in financial markets (Stiglitz 2008). Critics of capital market liberalization (CML) – and financial liberalization in general – have, therefore,

pointed out that it could result in severe financial crises with high development costs.<sup>6</sup> According to this alternative view, the pro-cyclical nature of capital flows and the volatility associated with open capital accounts may lead to more rather than less macroeconomic volatility, and particularly to stronger business cycles – real macroeconomic instability, in the terminology that will be used here. The uncertainties associated with volatile financing may, in turn, reduce investment and long-term economic growth. Similarly, the discipline imposed by open capital accounts on macroeconomic authorities is not necessarily a positive force for long-term sustainable growth, as it may reduce the space for counter-cyclical macroeconomic policies.

Although the evidence that CML was not associated with faster economic growth or higher levels of investment had important precedents (see, for example, Rodrik 1998), the intellectual battle over the effects CML was for the most part settled by a major IMF study, published in 2003 (Prasad et al. 2003). This study showed that there is overwhelming empirical evidence that CML increases real macroeconomic instability in developing countries, and to a lesser extent in developed countries. Pro-cyclical capital flows have indeed been at the heart of many of the crises in the emerging and developing world since the 1980s. Even when capital flows were not the direct cause of the crises, they played a central role in their propagation. The crises in the European periphery since the North Atlantic financial crisis show that these problems are also present in (at least some) developed countries.

Equally strong evidence comes from later studies which show that countries that have grown more are those which have relied less, not more, on capital flows for growth, and have therefore run stronger current account balances (Prasad, Rajan and Subramanian 2007; Gourinchas and Jeanne 2007). In a more recent exercise, Jeanne, Subramanian and Williamson (2012: Ch. 3) performed a ‘meta-regression’ analysis using six measures of financial globalization (three *de jure* and three *de facto* measures) for the period 1970-2007 and several sub-periods within that time span, and found very limited evidence of a link between financial globalization and growth, except partly for developed countries and for portfolio equity flows.

The evidence of the strong pro-cyclicality of cross-border flows and the equally strong effect they exercise, particularly on the dynamics of emerging and developing countries, indicate that there may be macroeconomic failures, which together with imperfections inherent in the functioning of capital markets imply that financial markets are essentially volatile. Imperfections in capital are associated with externalities and co-ordination failures, which are reflected in the contagion of both optimism and pessimism. In addition, risk (or insurance) markets are imperfect even in developed countries, but such markets are particularly weak, or absent, in most emerging and developing countries.

Boom–bust cycles in financial markets are, therefore, characterized by the twin phenomena of volatility and contagion. The essential reason for volatility is, as emphasized by Keynes, the uncertainty generated by the absence of information about the future, and the need of market players to base their decisions on expectations about the future performance of the economy and capital markets. This means that, in contrast to the orthodox view that rational speculation helps to stabilize markets, financial markets during booms tend to generate the phenomenon that has been called since the late 1990s ‘irrational exuberance’<sup>7</sup>, followed by the opposite phenomenon,

---

<sup>6</sup> See, among the extensive literature on the subject, the papers collected in Ocampo and Stiglitz (2008), including the overview of that volume by Ocampo, Spiegel, and Stiglitz (2008), on which this section borrows.

<sup>7</sup> The term was made famous by Alan Greenspan (1996). The best analysis of this issue has been provided by Shiller (2000).

which can be termed ‘unwarranted gloom’. Alternatively they tend to generate successive phases of ‘appetite for risk’ (which is generally underestimation of risks) followed by ‘flight to quality’ (risk aversion), to use the terminology of financial markets. Bubbles even appear and burst in developed countries with well-functioning markets and the best available standards of prudential regulation and supervision. This is consistent with Minsky’s (1982) view that financial markets follow a pattern of endogenous unstable dynamics, as they generate excessive risk-taking by market agents during booms – indeed, this risk-taking increases the longer the boom lasts – that eventually lead to crises. A similar explanation has been suggested by White (2005), who underscored how the ‘search for yield’ characteristic of low interest rate environments generates incentives for credit creation, carry trade, and leverage that easily build up asset bubbles. In developing countries with thin or small markets, there exists a short-term bias in financial markets (as discussed below), bubbles are easier to create, and their effects can be devastating.

Volatility is reflected in the pro-cyclical pattern of spreads and country risk premiums (which narrow during booms, and widen during crises), but also in variations in the *availability* of financing (the presence or absence of credit rationing) and in maturities (the reduced availability of long-term financing during crises, or the use of options that have a similar effect). The feedback between increases in spreads, debt accumulation and short-term macroeconomic expectations during crises can be highly destabilizing, particularly in the presence of high debt ratios. Different types of capital flows are subject to different volatility patterns. In particular, the higher volatility of short-term capital indicates that reliance on such financing is highly risky (Rodrik and Velasco 2000), whereas the lower volatility of FDI vis-à-vis all forms of financial flows is considered a source of strength. Nonetheless, as already indicated, FDI has also become more volatile, perhaps because it has become increasingly financialized.

Capital account cycles involve short-term movements, such as the very intense movements of spreads and the interruption of financing (rationing), as was observed with emerging economies after the 1998 Russian crisis and on a worldwide scale at the peak of the North Atlantic crisis. More importantly, however, in the case of emerging and developing countries, they also involve *medium-term* cycles, as the experience of these countries over the past four decades indicates (see Section 2).

The increasing use of derivative products is an additional source of volatility. Although the accelerated growth of derivative markets has helped to reduce ‘micro-instability’, by creating new hedging techniques that allow individual agents to cover their microeconomic risks, it might have increased ‘macro-instability’. In the words of Dodd (2008), if short-term capital flows can become ‘hot’ money, under critical conditions derivatives can turn into ‘microwave’ money, speeding up market responses to sudden changes in opinion and expectations. Derivatives have also reduced transparency by allowing large off-balance-sheet positions that are difficult to regulate.

The expectations that drive financial agents’ decisions are based on information about current conditions, which is in turn inherently incomplete and costly to process. This makes it rational for every agent to base her/his decisions on the opinions and actions of others, generating the twin phenomena of contagion and associated herding behaviour. Herding behaviour takes place even in ‘normal’ times but can be particularly devastating in periods of high uncertainty when ‘information’ becomes unreliable and expectations become highly volatile. Indeed, when views converge, the information that underlies crises may be factually imprecise or incorrect, but it may still prevail in the functioning of the market, engendering ‘self-fulfilling prophecies’. The worst is the case of ‘correlated mistakes’: unexpected news is reported that contradicts the general opinion, and all market players realize simultaneously that they were wrong and pull their funds out of certain asset classes, triggering panics.

There are many market patterns and practices that exacerbate this problem. Major market players – investment banks, credit rating agencies, international financial institutions – use the same sources of information and tend to reinforce each other’s interpretations of events. Since these market players have better access to relevant information and are better able to process it than others, others are likely to follow their lead, reinforcing herd behaviour. The pro-cyclical patterns of credit ratings and the effect they have on the behaviour of other agents have a similar effect. Standard compensation packages for investment managers, which often measure performance versus a benchmark index, may exacerbate the problem of herding. Furthermore, market-sensitive risk management practices, as well as other features of financial market operations (such as benchmarking indices and evaluation of managers against competitors) also tend to reinforce herding behaviour (Persaud 2000). The tendency of countries (as well as firms) to find themselves clustered in certain risk categories by analysis, a standard operating procedure in financial markets, has a similar effect.

Many of these practices tend to reinforce the short-term bias of financial agents. Others may have similar effects, such as the practice of requiring firms, even in advanced financial markets, to announce short-term profit forecasts – which are inherently uncertain. The fact that bank regulations require less capital for short-term debt to satisfy capital adequacy standards tends to reinforce this market pattern.

Contagion of opinions and expectations is only one of several explanations of the spread of crises from one country to another. The financial linkages that characterize a globalized financial world can spread problems from one area to another. Financial agents that incur losses in some markets are often forced to sell their assets in other markets to recover liquidity (or pay off their short-term obligations, including margin calls). Similarly, in periods of euphoria, access to finance in one part of the world economy can facilitate investments in others, and gains in one country can lead to investments elsewhere, often involving greater risk. Trade linkages can also play an important role in this regard, as can the correlation in the movements of different commodity prices – which may have been exacerbated by the ‘financialization’ of commodity markets – and their effects on commodity-dependent economies.

Contagion is an externality, and thus a market failure. An interrelated set of market failures involves creditor or investor co-ordination problems, which is particularly relevant during periods of capital flight. Investors are more likely to remain in a country as long as other investors also do so. But if some investors start to believe that the country will face a crisis and begin to remove their money, it will be in the interest of others to do the same. This may lead to a rush to pull out their funds, causing the markets to collapse, and leading to domestic responses in recipient countries – exchange rate overshooting, stock market collapses, rising interest rates to stop capital flight, and recession – that further feed into the run. Since the markets usually rebound afterwards, investors would be better off collectively if they had left their funds in the country.

Real macroeconomic instability has adverse effects on growth. The higher risks associated with such instability increase the return required by investors, reducing long-term investment. Crises are often followed by an extended period of slow economic growth. Indeed, strong crises generally shift the growth trajectory, placing countries onto a lower GDP growth path when they start to recover. This is the story of Latin America after the debt crisis of the 1980s, of Indonesia and some other East Asian economies after the Asian crisis, and of the European periphery after the North Atlantic crisis. In turn, crises are characterized by an enormous destruction of organizational and informational capital, as firms and financial institutions are forced into bankruptcy.

The economic effects of CML also have social implications, because new opportunities accrue disproportionately to the rich, whereas the adverse effects of volatility may disproportionately

impact the poor. There is, indeed, an empirical relationship between capital account openness and income inequality, which is associated with the fact that inequality frequently increases after capital account liberalization.<sup>8</sup> There may be multiple reasons for this result: the poor are most vulnerable to macroeconomic volatility because they have the least ability to cope with risk; the increasing mobility of capital weakens the bargaining position of labour; and international financial integration may constrain governments' redistributive policies.

The supporters of CML generally recognize that liberalization requires sufficiently strong and stable financial institutions, which means, in turn, that a strong regulatory framework needs to be in place before liberalization takes place. It is generally recognized in the literature that this warning was not taken into account in the case of many emerging and developing countries, which generally liberalized their capital accounts without strong regulatory frameworks in place. But even economically advanced countries have found it difficult to establish sufficiently effective regulatory structures to avoid crises. This is reflected in the financial crises experienced by Japan and Scandinavia in the last decade of the 20th century, or of the USA and several Western European countries during the North Atlantic financial crisis. In many cases this shows the strong power of financial interests, which are able to avoid strengthening regulation, particularly during periods of euphoria, when even regulators tend to underestimate risks. Furthermore, authorities tend to lag behind financial innovations, many of which are actually designed to circumvent or avoid regulation. The regulatory lag in the face of the growth of derivative markets in recent decades is a clear demonstration of this fact.

### **3.2 Particular issues of emerging and developing countries**

There is a fairly general recognition that the problems analysed above are more powerful in the case of emerging and developing countries, and therefore that CML has generated risks and has made it more difficult for developing countries to achieve real macroeconomic stability (see, for example, Schmukler 2008). There is a relatively broad recognition that it has also failed to help these countries achieve faster rates of economic growth.

One of the basic reasons behind why CML has a particularly strong negative effect on emerging and developing countries is because their financial markets are thinner. In particular, they are characterized by a strong prevalence of short-term financial assets and liabilities, which generates variable maturity mixes and currency mismatches in portfolios. This means that, during crises, creditors might not allow borrowers to roll over short-term loans, thus generating a liquidity crunch; but if the loans are rolled over, borrowers are subject, in any case, to the risks associated with interest rate fluctuations. To overcome the short-term bias of domestic financial markets, firms that have access to foreign credit (generally larger firms) often borrow abroad for their longer-term needs; but if they lack revenues in foreign currencies, they incur currency mismatches. When domestic financial institutions use foreign funds to finance domestic currency loans, they incur a currency mismatch that increases the risk of a meltdown if the currency depreciates; if they lend those funds domestically in foreign currencies to avoid currency mismatches in their portfolios, they merely transfer the associated risk to those firms that lack foreign-exchange revenues.

These mismatches would cause less concern if there were an adequate development of futures markets where firms could cover their risks. However, those markets, when available, tend to have only short-term coverage and a strong pro-cyclical performance, as they tend to become even shorter-term or even shut down during crises. All of this implies that the fact that developing

---

<sup>8</sup> See Charlton (2008) and Furcile and Lougani (2013).



countries' agents bear the brunt of exchange rate and interest rate risk, even when the source of the capital account fluctuations is external in origin, is a fundamental market failure of international capital markets.

Furthermore, when capital accounts are liberalized, the scope for counter-cyclical monetary policy is restricted. In particular, if to avoid the 'trilemma' of open economies, authorities opt for more exchange rate flexibility, they face a difficult trade-off between monetary autonomy and exchange rate stability. During booms, authorities can adopt counter-cyclical monetary policies, but only at the cost of a stronger exchange rate appreciation, which may lead to unsustainable current account deficits and rising risks of a balance of payments crisis; it may also lead to deterioration in the competitiveness of tradable sectors that may have adverse effects on long-term growth. During crises, authorities may be forced to increase interest rates to avoid capital flight. If they avoid this and instead reduce interest rates, exchange rates may overshoot, risking rising domestic inflation and increasing debt burdens for firms indebted in external markets, some of which may be forced into bankruptcy. Avoiding exchange rate overvaluation during booms is therefore critical to escape a destabilizing trajectory of external debts associated with sharp exchange rate depreciations during crises.

Governments may also be expected by external financial agents to behave in ways that generate 'credibility' during crises, which means that they are judged according to their capacity to adopt pro-cyclical austerity policies. But such policies generate economic *and* political economy pressures to also adopt equally pro-cyclical policies during booms: private agents will then resist the restrictions that authorities may impose on their ability to spend, and governments may be only too happy to have some breathing space after a period of austerity. Therefore, although counter-cyclical fiscal policy can potentially be used to help moderate booms, it faces severe pressures to do so; as is widely recognized, it is also not as flexible an instrument as monetary or exchange rate policies. This helps explain why there is widespread evidence that fiscal accounts are highly pro-cyclical in the developing world (Kaminsky, Reinhart and Végh 2004). Therefore, in contrast with the notion that financial markets should have a disciplining effect, unstable external financing distorts, to a great extent, the incentives that *all* domestic agents face throughout the business cycle, inducing pro-cyclical behaviour from both private agents and macroeconomic authorities.

There are ways to avoid these trade-offs, the most important of which is the accumulation of foreign exchange reserves during booms which can be used to increase the policy space that authorities have during crises. Counter-cyclical foreign exchange reserve management has indeed been a widespread practice in recent decades. However, such 'self-insurance' is costly: from a country perspective, it involves accumulating an asset that has low yields (foreign exchange reserves) to compensate for the entry of private capital inflows which have higher yields/costs; if reserve accumulation is sterilized, central banks will also incur losses associated with the difference between interest receipts from the investments of reserves and the costs of the domestic instruments used for sterilization purposes.

Other ways to manage the associated risks may merely shift those risks, rather than correct them. For example, the risks faced by the domestic financial sector can be counterbalanced by prudential regulations of domestic financial activities that are stricter than international (Basel) standards, but this raises the cost of financial intermediation and may restrict the development of new financial services. The move to a 'hard peg' – a currency board regime or dollar/euro-ization – to eliminate currency risks reduces even further or may altogether eliminate the space for counter-cyclical policies. There is, therefore, a very profound sense in which the financial and macroeconomic constraints faced by emerging and developing countries that have opened up their capital accounts are inescapable.

Furthermore, the pro-cyclical fiscal policies induced by CML have long-term costs. Cuts in social spending generate losses of, e.g., foregone nutrition, education, or healthcare that may never be undone for those who did not have access to the associated government programmes and services during crises; government services may themselves lose human and organizational capital, which generates long-term losses in terms of efficiency and effectiveness. In turn, stop-and-go public-sector investment policies might leave some projects (roads, energy projects) unfinished, at least for several years, increasing the cost and reducing the productivity of public-sector investment (Ocampo 2003a).

## 4 Capital account regulations

### 4.1 The case for and effectiveness of capital account regulations

The case for regulating cross-border capital flows rests, therefore, on the need to increase the policy space for counter-cyclical macroeconomic policies, as well as to correct (possibly through ‘second-best’ interventions) financial market failures. Capital account regulations (CARs) – the term and acronym that we will use here to refer to these interventions – play, therefore, a dual role: as a *macroeconomic* policy tool, and as a *financial stability* tool. As a macroeconomic policy tool, they provide greater room for counter-cyclical monetary policies. During booms, they increase the space necessary to undertake contractionary monetary policies while avoiding the additional exchange rate appreciation pressures that such monetary policies can generate by attracting additional capital flows. By mitigating exchange rate appreciation, they also reduce the risks that rising current account deficits will generate a future balance of payments crisis, as well as avoiding adverse effects on tradable sectors that may be crucial for long-term growth. In turn, during crises, they can create some room for expansionary monetary policies while containing capital flight and excessive exchange rate depreciation that would otherwise be partly transferred onto domestic inflation and lead to a destabilization of debt ratios. On the other hand, when viewed as a financial stability tool, CARs recognize the fact that pro-cyclical behaviour and, particularly, reversibility vary significantly according to the nature of capital flows, with debt portfolio flows and short-term bank lending being particularly volatile.

CARs can also be justified from a welfare economics perspective. This framework views volatile capital flows as negative externalities imposed on recipient countries that can be reduced or eliminated through some form of intervention. These externalities result from the fact that individual investors and borrowers do not take into account – or ignore – the effects of their financial decisions on the level of financial stability in a particular country. As a classic case of market failure, the situation calls for a Pigouvian tax (that is, taxes on cross-border financial activities and other regulations) to correct for the market failure and restore efficiency (Korinek 2011).

As with prudential regulations, CARs can be either quantitative (administrative) or price-based, but there are more complex typologies (see, for example, IMF 2011a). There are also terminological differences: IMF (2011a) coined the term ‘capital flow management measures’, whereas Epstein, Grabel and Jomo (2003) suggested the concept of ‘capital management techniques’. Quantitative regulations include: prohibitions or ceilings on certain capital flows, derivative operations or net exposure in foreign currencies; minimum stay periods; and restrictions on foreign investors taking positions in domestic securities or rules on what type of agent can undertake certain capital transactions (e.g. residents versus non-residents, corporate versus non-corporate). In turn, price-based regulations include unremunerated reserve requirements on capital inflows (URRs) and taxes on capital inflows or outflows.

All of these belong to the family of what have come to be called ‘macroprudential regulations’. This is a concept that was proposed before the North Atlantic financial crisis,<sup>9</sup> but has only received widespread acceptance after the crisis. This includes acceptance in the IMF’s ‘institutional view’ of capital account regulations (capital flow management measures) as part of the macroprudential family (see below).

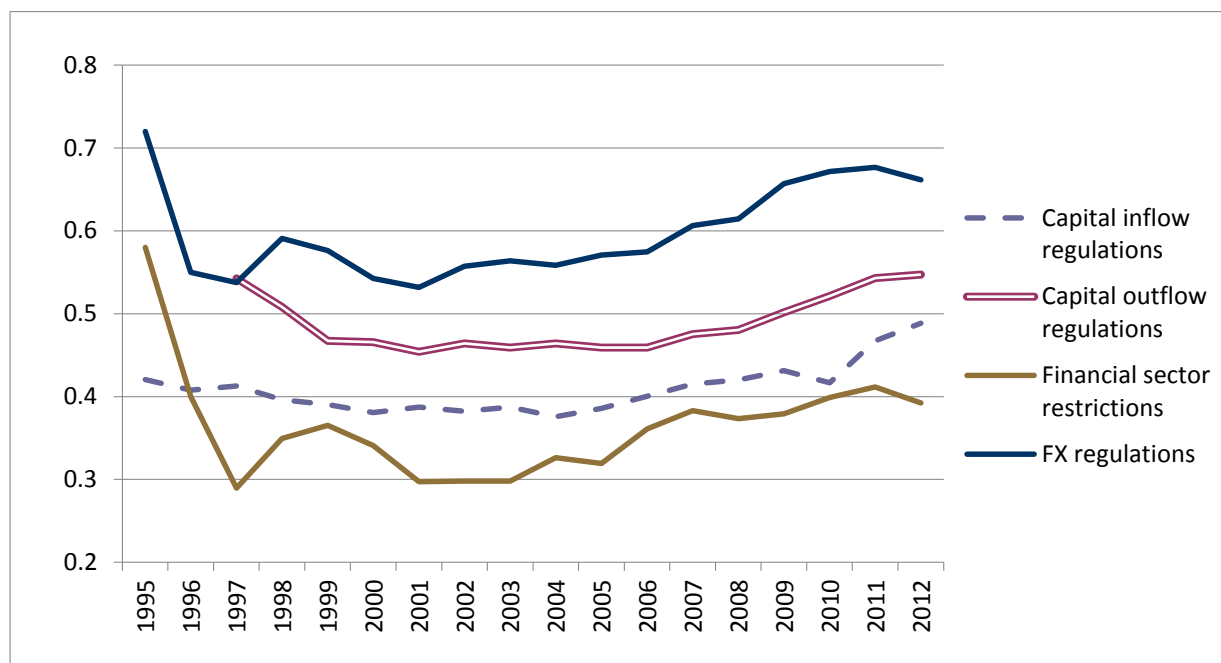
Following Erten and Ocampo (2013) and prior work by Schindler (2009) and Ostry et al. (2012), it is useful to differentiate four different types of (de jure) CARs: (i) capital inflow restrictions; (ii) capital outflow restrictions; (iii) financial sector regulations, and (iv) regulations on the domestic use of foreign exchange (FX-related regulations, in short). The first and second cover regulations across six asset categories: money market instruments, bonds, equities, financial credits, collective instruments, and direct investment. The third relate to different forms of discrimination between residents and non-residents, including the capacity of non-residents to hold domestic accounts, as well as limits on residents’ capacity to borrow and hold accounts abroad. FX-related regulations refer to the restrictions on the domestic use of foreign currencies: on lending locally in such currencies, the purchase of locally issued securities denominated in foreign currencies, differential treatment of deposit accounts in such currencies, and limits on foreign exchange positions.

Figure 5 plots the intensity with which CARs were used by 51 emerging and developing economies from 1995 to 2012. As it indicates, the most frequently used are FX-related regulations, followed by capital outflow restrictions, capital inflow restrictions and financial sector regulations. By region (not shown here), South and East Asia have the highest average scores for all indicators of capital account restrictiveness, followed by the Middle East and North Africa; Eastern Europe and Latin America are the most liberalized regions, with Latin America having a stronger preference for FX-related regulations and Eastern Europe for the other three types of regulations. Countries were reducing regulations in the run-up to the East Asian financial crisis, particularly FX-related and financial sector regulations; in fact, the latter became the least used form of regulation during these years. Emerging economies responded to that crisis by increasing all types of regulations, but particularly FX-related regulations and capital outflow restrictions; especially during the peak of the capital account boom that preceded the North Atlantic financial crisis. During and after this crisis, the move toward greater restrictions speeded up, but at a slower pace in the case of financial sector regulations.

---

<sup>9</sup> See, for example, the concept of ‘counter-cyclical prudential regulations’ in Ocampo (2003b), as well as the work of the Bank for International Settlements on what was termed the ‘macroprudential perspective’.

Figure 5: Capital account regulations, 1995-2012



Source: Erten and Ocampo (2013).

A complementary way to look at CARs is to see them as part of a continuum which runs from regulations on financial transactions by domestic residents in the domestic currency (traditional prudential regulation, including counter-cyclical prudential regulations), to those on domestic residents in foreign currency (FX-related regulations), and finally to those involving domestic agents' transactions with foreign residents.

As components of the broader family of regulations, those that focus directly on the capital account can be partly substituted by domestic prudential regulations. For example, a good practice that belongs to the last category but can have effects on external capital flows is that of managing the net foreign exchange exposure of domestic financial institutions, which is a fairly generalized practice. This may take the form of forbidding banks and other domestic financial intermediaries from holding net liability positions in foreign currency, or of managing such liability positions in order to encourage or discourage demand for foreign exchange at different phases of the business cycle, as has been practised in Colombia for decades. Another interesting case is Peru's use of differential reserve requirements for domestic banks' liabilities (deposits, but it can also be applied to external borrowing) in domestic versus foreign currencies; this is, of course, only useful in the partly dollarized financial system that Peru has. A disadvantage of focusing on domestic financial system regulations is that it leaves aside direct borrowing abroad by non-financial agents, and thus may lead to more borrowing of this type to sidetrack prudential regulations. A specific advantage of other forms of CARs is that they limit such arbitrage. A further alternative is a more active use of tax provisions applying to foreign-currency liabilities (see, for example, Stiglitz and Bhattacharya 2000).

Most of the literature on the effectiveness of CARs comes from the analysis of individual countries applying such regulations.<sup>10</sup> This method allows for concrete studies of individual countries'

<sup>10</sup> See, among others, several IMF papers (2011a, 2011b, 2012a and 2012b) and papers by IMF experts (Ariyoshi et al. 2000; Ostry et al. 2010, 2011 and 2012; and the literature reviews of Forbes et al. (2012), Kawai and Lamberte (2010), Magud and Reinhart (2007), Magud, Reinhart and Rogoff (2011), Ocampo (2008) and Ocampo and Erten (2014).

experiences as well as the use of higher-frequency data than is possible in cross-country analyses. But it does not allow for comparison with countries facing the same external conditions but not using those regulations. Multi-country studies, as well as cross-country regression analysis, facilitate, in principle, such comparisons.

There is a broad-based consensus in the literature on two positive effects of CARs. The first is that they help improve the composition of capital inflows, tending to lengthen the maturity of external debt obligations. The second is that they increase monetary policy independence, in the sense that regulations on inflows allow countries to increase domestic interest rates during booms and, more generally, adopt contractionary monetary policies without strong effects on the exchange rate. This means that CARs can partly delink the effects of capital flows on interest and exchange rates and, therefore, reduce the trade-off that authorities face between monetary policy autonomy and exchange rate stability.

In contrast, there have been more debates on the effects in other areas, particularly on overall capital inflows and on exchange rates. Exchange rate effects are generally found to be temporary or statistically insignificant. This implies that CARs generally operate as ‘speed bumps’<sup>11</sup> rather than permanent restrictions. This could, of course, be interpreted as the need to dynamically adjust them to take into account the response of the private sector, including ‘innovations’ to circumvent regulations.

Furthermore, this as well as other effects may depend on the nature and strength of the regulations. In particular, traditional quantitative regulations may be better at reducing inflows than URRs. In turn, in a comparative study of the effects of CARs on inflows in Chile, Colombia and Malaysia in the 1990s, Ocampo and Palma (2008) concluded that the harsher 1994 Malaysian regulations had a stronger effect than those of Chile or Colombia, and that, among the latter, Colombia’s were more effective because they were also stronger, as measured by the tax equivalent of the URR. Similarly, the strong tax on outflows introduced by Malaysia in 1998 is generally considered to have been very effective (Kaplan and Rodrik 2002). Using two instruments simultaneously may also enhance their effectiveness. So, exchange rate interventions may have stronger effects on exchange rates if accompanied by CARs.

Most papers look at the effects of CARs on capital inflows and exchange rates as separate effects, but they are in fact two manifestations of the same effect. Erten and Ocampo (2013) have tried to correct for this problem by creating an overall index of the ‘foreign exchange pressure’ generated by capital flows, which can be reflected either in reserve accumulation or exchange rates – with the mix depending on other policies. Using this methodology, they find that CARs reduce foreign exchange pressures. This in effect is true of emerging and developing countries but not of developed countries.<sup>12</sup>

Overall, therefore, there is significant evidence that CARs improve the composition of capital flows toward less reversible flows and increase monetary independence without sacrificing exchange rate objectives. They also may have the desirable effect on exchange rates, but this effect is contested by some authors.

---

<sup>11</sup> This is the term used by Palma (2002) and Ocampo and Palma (2008).

<sup>12</sup> As Erten and Ocampo (2013) underscore, the results of Klein (2012), which indicate that regulations have no effect on exchange rates, are distorted by the inclusion of developed countries in the cross-country analysis. When Klein’s data is used but developed countries are excluded, CARs are found to have statistically significant effects on the exchange rate.

CARs also have interesting real effects. This first analysis of this issue came with the work by IMF researchers (Ostry et al. 2012). They showed that countries that had CARs before the global financial crisis were able to mitigate the contraction of GDP during the crisis. Erten and Ocampo (2013) explored this same issue but with a dataset covering more years, which also helped to allow an analysis of the recovery from the crisis. They found that using CARs helped countries avoid both a stronger impact of the crisis and overheating during the recovery, indicating overall that CARs are a good counter-cyclical instrument.

The literature has also discussed the advantages and disadvantages of different forms of regulations. The first issue relates to the effects of regulation on inflows versus on outflows. There is a significant bias in the current debate against regulating outflows. But the empirical evidence goes in the opposite direction, indicating that regulations on outflows are more effective than regulations on inflows.<sup>13</sup> On price- versus quantity-based regulation, it has been generally argued that price-based regulations, in particular URRs, have the advantage of being more market-friendly. But again, the evidence in the literature, including IMF research, is that quantity-based regulations are generally more effective. In fact, simple quantity-based regulations – in particular, prohibiting certain financial agents, particularly banks, from undertaking certain transactions – are also used in domestic prudential regulation, with no associated stigma. In terms of temporary versus permanent regulations, the major issue is whether countries have institutions in place that can utilize them when needed. So, using permanent regulatory systems and instruments that can be used in a counter-cyclical way – including phasing out regulations temporarily during periods where there are no balance of payments pressures – is better than improvising institutions to manage either booms or crises, which tend to generate poor results.

In terms of residents versus non-residents, the view of the IMF and many analysts is that countries should not discriminate between residents and non-residents. But this may in fact be impossible, as residents and non-resident have a significant difference in their demand for the domestic currency of the recipient countries – non-residents obviously demand less than residents and possibly in a more unstable way. For that reason, it may make sense to discriminate between them. Thus, although countries should try to focus their regulations on currencies rather than residency, even regulations that focus on currencies will, de facto, discriminate between residents and non-residents.

Finally, in this regard, there is also a general agreement that different types of flows should be regulated in different ways. In general, it is agreed that CARs should aim in particular at the most volatile flows, which are generally bank lending and portfolio flows (particularly debt portfolio flows). In contrast, trade financing should be subject to no restrictions and foreign direct investment (FDI) should be exempted from CARs. However, since FDI is often (and even increasingly) the form of lending by the matrix of firms to their subsidiaries or, in project financing, of equity investments in countries that are financed by bond issues in international markets, this old wisdom may be debatable. Exemptions on FDI may in fact become significant loopholes in the regulations.

The basic disadvantage of capital market regulations is, of course, that they *segment* domestic from international markets. It can be argued, however, that this recognizes the fact that markets are already segmented – and therefore, CARs can be understood as ‘second-best’ interventions. Indeed, the flaw of CML is that it does not recognize the implications of segmentation. In policy terms, the alternative, or, even better, complementary policy instrument is that of active

---

<sup>13</sup> See the older research from the IMF (Ariyoshi et al. 2000) and Erten and Ocampo (2013).

interventions in foreign exchange markets and associated counter-cyclical management of foreign exchange reserves, an issue that will be discussed in a parallel paper. It can be argued, however, that if the basic problem of CARs is that they segment capital markets, the major disadvantage of reserve accumulation is that it is costly. A more active use of CARs is a less costly form of intervention.

More generally, and given, in particular, the strong constraints that emerging and developing countries face in the current globalized financial world, these two forms of interventions should be seen as complements and not substitutes for each other in the design of counter-cyclical macroeconomic policies. In a nutshell, this means that CARs should thus be seen as an *integral* component of the policy package to be adopted in order to guarantee macroeconomic stability in a broad sense (Ocampo 2008).

## 4.2 Recent global policy debates

One of the most interesting developments in the area of CARs in recent years has been the revival of views on the positive role that these can have in the international system. This represents, in a sense, a partial return to the original Bretton Woods agreements that were discarded in the era of capital account liberalization. In particular, these views stand in sharp contrast to the 1997 proposal by the IMF to include the commitment to capital account convertibility in the Articles of Agreement.<sup>14</sup>

The G-20 adopted, during its 2011 Summit, a set of ‘coherent conclusions for the management of capital flows’ (G-20 2011), but the most important multilateral effort to rethink the role of these regulations was that undertaken by the IMF in 2011 and 2012, proposing first what it called first a ‘possible policy framework’ (IMF 2011a, 2011b) and later an ‘institutional view’ (IMF 2012a, 2012b). This exercise was backed by significant research by IMF staff (see, in particular, Ostry et al. 2010, 2011, 2012). As a result of this exercise, the IMF has recognized that capital flows carry risks and that, under certain circumstances, capital flows should be regulated to moderate both surges and sudden stops in external financing. In keeping with the discussions above, it sees such interventions as a complement to a counter-cyclical macroeconomic policy. The full liberalization of capital flows has still been kept as a long-term objective for countries, but it has been advised that this should only be adopted when nations reach a certain threshold of financial and institutional development.

The IMF thus recommends that nations could use ‘capital flow management measures (CFMs)’ alongside other macroeconomic policies: counter-cyclical monetary and fiscal policies, active foreign exchange reserve management, and macroprudential domestic financial regulations. However, it has been emphasized that CFMs should be used only after other instruments of macroeconomic policy management have been adopted – i.e., after building up reserves, letting currencies appreciate and strengthening fiscal policy – and thus as a sort of ‘intervention of last resort’. This perspective was, nonetheless, more nuanced in the 2012 than in the 2011 proposal.

The IMF’s view also favours regulations on inflows and is critical of those on outflows, which it recommends should only be used in crisis or near-crisis conditions. The IMF also recommends that all interventions should be essentially temporary in character and that they should discriminate on the basis of currency but not on that of residence. The case for temporary measures goes against its own recommendation to strengthen the associated institutional framework, which is better

---

<sup>14</sup> The most important review of debates in recent years is provided by Gallagher (2014). A critical analysis of IMF decisions has been provided by Gallagher and Ocampo (2013), from which this section partly borrows.

served if regulations are seen as a permanent toolkit for countries. In contrast, improvising interventions under crisis situations may actually make them ineffective. In turn, as discussed above, the objective of non-discrimination is hard to achieve, as CARs almost by necessity require some discrimination between residents and non-residents, reflecting the segmentation that characterizes financial markets in an international system.

The continuous advocacy for the liberalization of the capital account as a long-term objective is also problematic, as the existing literature overwhelmingly finds no strong correlation between capital account liberalization and growth, especially in emerging and developing countries. In the words of Jeanne, Subramanian and Williamson (2012: 5): ‘the international community should not seek to promote totally free trade in assets – even over the long run – because [...] free capital mobility seems to have little benefit in terms of long-run growth and because there is a good case to be made for prudential and non-distortive capital controls’. This is consistent, as we have seen, with new theoretical research which indicates that CARs can be the optimal policy for internalizing the externalities associated with risky capital flows (Korinek 2011). This indicates that CARs should therefore be used as permanent interventions, as prudential regulations are used in domestic finance on a permanent basis.

So, a more ambitious policy framework should recognize that CARs could – and even should – be used on a permanent basis, as an integral component of a counter-cyclical macroeconomic policy package, preferably based on permanent regulations that are strengthened or weakened in a counter-cyclical way. It should also recognize that there should be no presumption in favour of the regulation of inflows over outflows, and that it may be difficult to avoid discriminating between residents and non-residents. These elements, together with those that relate to international co-operation to regulate capital flows, can be formulated in terms of a set of guidelines for the use of CARs (see Box 1).<sup>15</sup>

Box 1: Guidelines for the use of capital account regulations

- CARs should be seen as an essential part of the macroeconomic policy toolkit and not seen as measures of last resort.
- CARs should be considered differently in nations where the capital account is still largely closed in contrast with those nations where CARs are prudential regulations used to manage an open capital account.
- Price-based CARs have the advantage of being more market neutral, but quantity-based CARs may be more effective, especially in nations with relatively closed capital accounts, weaker central banks, or when incentives to bring in capital are very large.
- CARs should not be relegated only to regulations on capital inflows. Capital outflow restrictions may be among the most significant deterrents of undesirable inflows and can serve other uses as well.
- CARs can be seen as alternatives to foreign exchange reserve accumulation, particularly to reduce the costs of reserve accumulation.
- CARs should not be seen as solely temporary measures, but should be thought of as permanent mechanisms to be used in a counter-cyclical way to smooth booms and busts. Their permanence will strengthen the institutional capacity to implement them effectively.
- Investors can increasingly circumvent CARs through mis-invoicing trade flows, derivative operations, or FDIs that are in fact debt flows.

---

<sup>15</sup> This alternative framework is the result of an academic debate that took place whilst IMF Board discussions were also taking place. See a full collection of contributions to this debate in Gallagher, Griffith-Jones and Ocampo (2012a).



- Therefore, CARs should be seen as dynamic, requiring a significant degree of market monitoring and 'fine-tuning' as investors adapt and circumvent regulation.
- It may be useful for effective CARs to distinguish between residents and non-residents.
- The full burden of managing capital flows should not be on emerging markets and developing countries, but the 'source' countries of capital flows should also play a role in capital flow management, including supporting the effectiveness of those regulations put in place by recipient countries.
- Neither industrialized nations nor international institutions should limit the ability of nations to deploy CARs, whether through trade and investment treaties or through loan conditionality.
- Industrialized nations should examine more fully the global spillover effects of their own monetary policies and evaluate measures to reduce excessive outflows of short-term capital that can be undesirable both for them and emerging countries.
- The stigma attached to CARs should be removed, so nations have ample confidence that they will not be rebuked for taking action. The IMF could play a valuable role in taking away the stigma of CARs, as well as doing comparative analysis of which CARs are most effective.

Source: Gallagher, Griffith-Jones and Ocampo (2012b).

In any case, a major advance of the IMF institutional view was the recognition that there is no obligation to adopt capital account convertibility under the IMF Articles of Agreement, an issue that was settled after the 1997 debates. Countries have therefore full freedom to manage their capital account. In the words of the G-24: 'Policy makers of countries facing large and volatile capital flows must have the flexibility and discretion to adopt policies that they consider appropriate and effective to mitigate risks' (G-24 2011: par. 8).

Crucially, the IMF has boldly noted that its own recommendations and the freedom that countries have to adopt CARs under its Articles of Agreement may be at odds with other international commitments, in particular trade and investment treaties that restrict the ability to regulate cross-border finance. In its own words: 'even where the proposed Fund institutional view recognizes the use of inflow or outflow CFMs as an appropriate policy response, these measures could still violate a member's obligations under other international agreements if those agreements do not have temporary safeguard provisions compatible with the Fund's approach' (IMF 2012b: 42). Indeed, many trade and investment treaties lack the appropriate safeguards (Gallagher and Stanley 2012). This is true if countries have made commitments on financial service liberalization within the WTO and OECD but, more importantly, is true of several regional and bilateral agreements. In particular, in treaties with the USA, it is stated that all forms of capital must flow 'freely and without delay' among trade and investment partners. The IMF correctly suggests that its institutional view could help guide future trade treaties and that the IMF could serve as a forum for such discussions. Such provisions should be revised to make them consistent with the IMF's institutional view and the provisions under its Articles of Agreement.

Finally, among the most interesting elements of IMF's institutional view is the recognition that source countries should pay more attention to the potentially negative spillover effects of their macroeconomic policies. In this regard, the essential problem since the North Atlantic financial crisis has been the asymmetry created by the dissimilar strength of different economies. Given the autonomy that countries have to run their monetary policy, this induces capital flows that may run counter to the policy objectives of other countries. In short, a 'multi-speed' global economy creates a need for a 'mirror asymmetry' in monetary policies, which would be very difficult to manage without some restrictions on capital flows.

This leads to an analysis of whether there should be some form of explicit global co-operation in this field. One positive step would be to design mechanisms by which source countries co-operate with countries adopting CARs, helping to make those regulations effective. This would imply, in a sense, a return to the views that Harry Dexter White espoused prior to the Bretton Woods negotiations. This might require, as Jeanne, Subramanian and Williamson (2012) have proposed, the adoption of an international regime determining which regulations are appropriate and which are not, as well as an IMF code of good practice for capital account policies. In their view, a basic advantage of such a code would be to reduce the stigma associated today with the use of CARs. A disadvantage would obviously be the loss of the full autonomy that countries have in this regard under the current Articles of Agreement.

Cross-border capital account regulations should be seen, therefore, as an essential element of the global monetary system. Actually, the basic principle that should guide actions in this field is the 'embedded liberalism' under the auspices of which the IMF was built: that it is in the best interest of all members to allow countries to pursue their own counter-cyclical macroeconomic policies, even if this requires blocking free capital movements. It is therefore positive that the Fund has recognized that CARs can play a positive role, as part of the broader family of macroprudential regulations.

## References

- Ariyoshi, A., K. Habermeier, B. Laurens, I. Ötker-Robe, J.I. Canales-Kriljenko, and A. Kirilenko (2000). 'Capital Controls: Country Experiences with Their Use and Liberalization'. Occasional Paper 190. Washington, DC: International Monetary Fund.
- Charlton, A. (2008). 'Capital Market Liberalization and Poverty'. In J.A. Ocampo and J.E. Stiglitz (eds), *Capital Markets Liberalization and Development*. New York: Oxford University Press.
- Chinn, M.D., and H. Ito (2006). 'What Matters for Financial Development? Capital Controls, Institutions, and Interactions'. *Journal of Development Economics*, 81(1): 163-92.
- Chinn, M.D., and H. Ito (2008). 'A New Measure of Financial Openness'. *Journal of Comparative Policy Analysis*, 10(3): 309-33.
- Dodd, R. (2008). 'Consequences of Liberalizing Derivative Markets'. In J.A. Ocampo and J.E. Stiglitz (eds), *Capital Markets Liberalization and Development*. New York: Oxford University Press.
- Epstein, G., I. Grabel, and K.S. Jomo (2003). 'Capital Management Techniques in Developing Countries'. In A. Bura (ed.), *Challenges to the World Bank and the IMF: Developing Country Perspectives*. London: Anthem Press.
- Erten, B., and J.A. Ocampo (2013). 'Capital Account Regulations, Foreign Exchange Pressure, and Crisis Resilience'. Working Paper. New York: Columbia University, Initiative for Policy Dialogue.
- Forbes, K., M. Fratzscher, T. Kostka, and R. Straub (2012). 'Bubble Thy Neighbor: Portfolio Effects and Externalities from Capital Controls'. NBER Working Paper 18052. Cambridge, MA: National Bureau of Economic Research.
- Frenkel, R. (2008). 'From the Boom in Capital Inflows to Financial Traps'. In J.A. Ocampo and J.E. Stiglitz (eds), *Capital Markets Liberalization and Development*. Oxford: Oxford University Press.
- Furcile, D., and P. Lougani (2013). 'Who Let the Gini Out?'. *Finance and Development*, 50(4): 25-7.

- G-20 (Group of Twenty) (2011). 'G-20 Coherent Conclusions for the Management of Capital Flows Drawing on Country Experiences'. 15 October. Available at: <http://www.g20.org/>
- G-24 (Group of Twenty-Four) (2011). 'Intergovernmental Group of Twenty-Four on International Monetary Affairs and Development Communiqué'. 11 April. Washington, DC: IMF and World Bank.
- Gallagher, K., and L. Stanley (2012). *Global Financial Reform and Trade Rules: The Need for Reconciliation*. Boston: Boston University, Pardee Task Force on Regulating Capital Flows.
- Gallagher, K., S. Griffith-Jones, and J.A. Ocampo (eds) (2012a). *Regulating Global Capital Flows for Long-Run Development*. Boston: Boston University, Pardee Center for the Study of the Longer Range Future.
- Gallagher, K., S. Griffith-Jones, and J.A. Ocampo (2012b). 'Capital Account Regulations for Stability and Development: A New Approach'. In K. Gallagher, S. Griffith-Jones, and J.A. Ocampo (eds), *Regulating Global Capital Flows for Long-Run Development*, Executive Summary. Boston: Boston University, Pardee Center for the Study of the Longer Range Future.
- Gallagher, K., and J.A. Ocampo (2013). 'IMF's New View on Capital Controls'. *Economic and Political Weekly*, 48(12): 10-13.
- Gourinchas, P.-O., and O. Jeanne (2007). 'Capital Flows to Developing Countries: The Allocation Puzzle'. NBER Working Paper 13602. Cambridge, MA: National Bureau of Economic Research.
- Greenspan, A. (1996). 'The Challenge of the Central Banking System in a Democratic Society'. Remarks at the Annual Dinner and Francis Boyer Lecture of the American Enterprise Institute for Public Policy Research. Washington, DC. <http://www.federalreserve.gov/boarddocs/speeches/1996/19961205.htm> (accessed 12 April 2015).
- Helleiner, E. (1994). *States and the Reemergence of Global Finance: From Bretton Woods to the 1990s*. Ithaca, NY: Cornell University Press.
- International Monetary Fund (IMF) (2011a). 'Recent Experiences in Managing Capital Inflows: Cross-Cutting Themes and Possible Policy Framework'. IMF Policy Paper. Washington, DC: International Monetary Fund, Strategy, Policy, and Review Department.
- IMF (2011b). 'Strengthening the International Monetary System: Taking Stock and Looking Ahead'. Washington, DC: International Monetary Fund.
- IMF (2011c). 'World Economic Outlook'. Washington, DC: International Monetary Fund.
- IMF (2012a). 'Liberalizing Capital Flows and Managing Outflows' Background Paper. Washington, DC: International Monetary Fund.
- IMF (2012b). 'The Liberalization and Management of Capital Flows: An Institutional View'. 14 November. Washington, DC: International Monetary Fund.
- Jeanne, O., J. Williamson, and A. Subramanian (2012). *Who Needs to Open the Capital Account?*. Washington, DC: Peterson Institute for International Economics.
- Kaminsky, G.L., C.M. Reinhart, and C.A. Végh (2004). 'When It Rains, It Tows: Pro-cyclical Capital Flows and Macroeconomic Policies'. NBER Working Paper 10780. Cambridge, MA: National Bureau for Economic Research.
- Kaplan, E. and D. Rodrik (2002). 'Did the Malaysian Capital Controls Work?'. In S. Edwards and J.A. Frankel (eds), *Preventing Currency Crises in Emerging Markets*. Chicago: University of Chicago Press.

- Kawai, M., and M.B. Lamberte (eds) (2010). *Managing Capital Flows: The Search for a Framework*. Cheltenham: Edward Elgar / Asian Development Bank Institute.
- Keynes, J.M. (1942-43). 'The Keynes Plan'. Reproduced in J.K. Horsefield (ed.) (1969). *The International Monetary Fund 1945-1965: Twenty Years of International Monetary Cooperation*, Vol. III: Documents. Washington, DC: International Monetary Fund.
- Kindleberger, C.P., and R. Aliber (2011). *Manias, Panics, and Crashes: A History of Financial Crises*, 6th Edition. Basingstoke: Palgrave Macmillan.
- Klein, M.W. (2012). 'Capital Controls: Gates and Walls'. *Brookings Papers on Economic Activity*, 45(2): 317-67.
- Korinek, A. (2011). 'The New Economics of Prudential Capital Controls: A Research Agenda'. *IMF Economic Review*, 59: 523-61.
- Kose, M.A., E. Prasad, K. Rogoff, and S.-J. Wei (2009). 'Financial Globalization: A Reappraisal'. *IMF Staff Papers*, 56:1.
- Magud, N.E., and C.M. Reinhart (2007). 'Capital Controls: An Evaluation'. In S. Edwards (ed.), *Capital Controls and Capital Flows in Emerging Economies: Policies, Practices and Consequences*. Chicago: University of Chicago Press.
- Magud, N.E., C.M. Reinhart, and K.S. Rogoff (2011). 'Capital Controls: Myth and Reality—A Portfolio Balance Approach'. NBER Working Paper 16805. Cambridge, MA: National Bureau of Economics Research.
- McKinsey Global Institute (2013). 'Financial Globalization: Retreat or Reset?' *Global Capital Markets 2013*.
- Mishkin, F. (2006), 'Globalization: A Force for Good?' A Speech at the Weissman Center Distinguished Lecture Series, October 17, 2006. Speech 237. Board of Governors of the Federal Reserve System (U.S.). New York: Baruch College.
- Minsky, H.P. (1982). *Can 'It' Happen Again?. Essays on Instability and Finance*. Armonk, NY: M.E. Sharpe.
- Ocampo, J.A. (2003a). 'Developing Countries' Anti-Cyclical Policies in a Globalized World'. In A. Dutt and J. Ros (eds), *Development Economics and Structuralist Macroeconomics: Essays in Honour of Lance Taylor*. Aldershot: Edward Elgar.
- Ocampo, J.A (2003b). 'Capital Account and Counter-Cyclical Prudential Regulation in Developing Countries'. In R. Ffrench-Davis and S. Griffith-Jones (eds.), *From Capital Surges to Drought: Seeking Stability for Emerging Markets*. London: Palgrave Macmillan.
- Ocampo, J.A (2008). 'A Broad View of Macroeconomic Stability'. In N. Serra and J.E. Stiglitz (eds), *The Washington Consensus Reconsidered: Towards a New Global Governance*. New York: Oxford University Press.
- Ocampo, J.A (2011). 'Reforming the International Monetary System. 14th WIDER Annual Lecture. Helsinki: UNU-WIDER.
- Ocampo, J.A., J. Kregel, and S. Griffith-Jones (2007). *International Finance and Development*. London and Penang: Orient Longman, Zed Books, and Third World Network.
- Ocampo, J.A., and J.E. Stiglitz (eds) (2008). *Capital Account Liberalization and Development*. New York: Oxford University Press.
- Ocampo, J.A., S. Spiegel, and J.E. Stiglitz (2008). 'Capital Market Liberalization and Development'. In J.A. Ocampo and J.E. Stiglitz (eds.) (2008), *Capital Account Liberalization and Development*. New York: Oxford University Press.

- Ocampo, J.A., and J.G. Palma (2008). 'The Role of Preventive Capital Account Regulations'. In J.A. Ocampo and J.E. Stiglitz (eds) (2008), *Capital Account Liberalization and Development*. New York: Oxford University Press.
- Ocampo, J.A., and B. Erten (2014). 'Capital Account Regulations: Role, Effectiveness and the IMF's Institutional View'. In L.C. Bresser-Pereira, J. Kregel, and L. Burlamaqui (eds), *Financial Stability and Growth: Perspectives on Financial Regulation and New Developmentalism*. Milton Park: Routledge.
- Ostry, J.D., A.R. Ghosh, K. Habermeier, M. Chamon, M.S. Qureshi, and D.B.S. Reinhardt (2010). 'Capital Inflows: The Role of Controls'. IMF Staff Position Note SPN/10/04. Washington, DC: International Monetary Fund.
- Ostry, J.D., A.R. Ghosh, K. Habermeier, L. Laeven, M. Chamon, M.S. Qureshi, A. Kokenyne, (2011). 'Managing Capital Inflows: What Tools to Use?'. IMF Staff Discussion Note SDN/11/06. Washington, DC: International Monetary Fund.
- Ostry, J.D., A.R. Ghosh, M. Chamon, and M.S. Qureshi (2012). 'Tools for Managing Financial-Stability Risks from Capital Inflows'. *Journal of International Economics*, 88(2): 407-21.
- Palma, J.G. (2002). 'The Three Routes to Financial Crises: The Need for Capital Controls'. In J. Eatwell and L. Taylor (eds), *International Capital Markets: Systems in Transition*, New York: Oxford University Press.
- Persaud, A. (2000). *Sending the Herd off the Cliff Edge: The Disturbing Interaction between Herding and Market-sensitive Risk Management Practices*. London: State Street Bank.
- Prasad, E.S., K. Rogoff, S.-J. Wei, and M.A. Kose (2003). 'Effects of Financial Globalization on Developing Countries: Some Empirical Evidence'. Occasional Paper 220. Washington, DC: International Monetary Fund.
- Prasad, E.S., R. Rajan, and A. Subramanian (2007). 'Foreign Capital and Economic Growth'. *Brookings Papers on Economic Activity*, 38(1): 153-230.
- Reinhart, C., and K. Rogoff (2009). *This Time is Different: Eight Centuries of Financial Folly*. Princeton: Princeton University Press.
- Rodrik, D. (1998). 'Who Needs Capital Account Convertibility?'. In S. Fischer et al. (eds), *Should the IMF Pursue Capital-Account Convertibility?*. Essays in International Finance 207. Princeton, NJ: Princeton University Press.
- Rodrik, D., and A. Velasco (2000). 'Short-Term Capital Flows'. In B. Pleskovic and J. E. Stiglitz (eds), *Annual World Bank Conference on Development Economics 1999*. Washington, DC: World Bank.
- Schindler, M. (2009). 'Measuring Financial Integration: A New Data Set'. *IMF Staff Papers* 56(1): 222-38
- Schmukler, S.L. (2008). 'The Benefits and Risks of Financial Globalization'. In J.A. Ocampo and J.E. Stiglitz (eds) (2008), *Capital Account Liberalization and Development*. New York: Oxford University Press.
- Shiller, R.J. (2000). *Irrational Exuberance*. Princeton: Princeton University Press.
- Steil, B. (2013). *The Battle of Bretton Woods: John Maynard Keynes, Harry Dexter White and the Making of a New World Order*. Princeton: Princeton University Press.
- Stiglitz, J.E. (2008). 'Capital Market Liberalization, Globalization, and the IMF'. In J.A. Ocampo and J.E. Stiglitz (eds) (2008), *Capital Account Liberalization and Development*. New York: Oxford University Press.

Stiglitz, J.E., and A. Bhattacharya (2000). 'The Underpinnings of a Stable and Equitable Global Financial System: From Old Debates to a New Paradigm'. In, *Proceedings of the Annual World Bank Conference on Development Economics 1999*. Washington, DC: World Bank.

White, W.R. (2005). 'Procyclicality in the Financial System: Do We Need a New Macrofinancial Stabilization Framework?'. *Kiel Economic Policy Papers*, 2. Kiel: Kiel Institute for Economic Policy.