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Financial Liberalisation

Past, Present and Future

Edited by Philip Arestis and Malcolm Sawyer

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Financial Liberalisation

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Financial Liberalization, the Finance–Growth Nexus, Financial Crises and Policy Implications

Philip Arestis

Abstract The purpose of this chapter is to investigate the growth–finance nexus with reference to the 'financial liberalization' thesis. This thesis can be succinctly summarized as amounting to freeing financial markets from any intervention and letting market forces determine the size and allocation of credit. The history of banking, however, since the policymakers in both developing (emerging) and developed countries adopted the financial liberalization thesis tells a rather different and sad story. Ever since the adoption of the essentials of the financial liberalization thesis, banking crises have been unusually frequent and severe. In this contribution we discuss the financial liberalization aspect of crises, emphasizing two examples that led to crises: the Southeast Asian crisis and the 2007/2008 international financial crisis that led to the 'Great Recession'. We then discuss economic policy implications, along with relevant eco-

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nomic policy proposals that could support financial stability and avoid future financial crises.

Keywords Financial liberalization • Financial crises • Policy implications

JEL Classification E42 • E44 • E52 • E58

1.1 Introduction[1]

This chapter investigates the 'financial liberalization' thesis, within the growth–finance nexus. This thesis emerged in the early 1970s in view of a number of controls by the central banks on the financial markets, which had been fairly common practice in the 1950s and 1960s. The experience of that era with those controls was challenged by Goldsmith (1969) in the late 1960s and by McKinnon (1973) and Shaw (1973) in the early 1970s. Their argument was essentially that the poor performance of investment and growth, especially in developing countries, was due to interest rate ceilings, high reserve requirements, and quantitative restrictions in the credit allocation mechanism. Consequently, those restrictions were sources of 'financial repression', the main symptoms of which were low savings and investment levels. It therefore follows in this view that the focus of financial liberalization should be on the relevant removal of central bank controls over the financial sector, thereby freeing financial markets from any intervention and letting the market determine the allocation of credit.

The experience with financial liberalization as the policymakers in both developing and developed countries adopted the essentials of this thesis, and pursued corresponding policies, has not been what might be expected from this approach to financial policy. This experience points to two striking findings. The first is that over the period of financial liberalization, essentially from the early 1970s and subsequently, there have been banking crises, which have been unusually frequent and severe. The World

[1] I am grateful to Malcolm Sawyer and participants at the conferences held at the University of Cambridge, St Catharine's College, and University of the Basque Country, for helpful comments.

Bank (1989) indicates that the magnitude of the crises is obvious by the fact that at least *two-thirds* of the IMF member countries experienced significant banking-sector problems ever since the early 1980s. The second important finding is that there have been exacerbated downturns in economic activity, which have imposed substantial real economic costs for the local economies involved (Honohan and Klingebiel 2000; see, also, Arestis 2004, 2005; Arestis and Sawyer 2005; Arestis and Demetriades 1998).

The international financial crisis of 2007/2008 provides a relevant example of what has just been suggested. In a recent contribution Arestis (2016a) discusses the origins of the international financial crisis of 2007/2008 and the emergence of the 'Great Recession', making a distinction between the main factors and contributory factors. The main factors contain three features: distributional effects, financial liberalization, and financial innovation. The contributory factors also contain three features: international imbalances, monetary policy, and the role of credit rating agencies. In relation to the term 'financialization', this encapsulates the two features of the main factors, namely financial liberalization and financial innovation, since this term is defined for the purposes of the Arestis (2016a) contribution as the process where financial leverage overrides capital (i.e. equity), and financial markets dominate over the rest of the markets in the economy. Financialization, as it has just been defined, is in a broad sense of the term; it is, nonetheless, consistent with the definition of Epstein (2005), who defines it as "the increasing role of financial motives, financial markets, financial actors and financial institutions in the operation of the domestic and international economies" (p. 3; see, also Palley 2013, and Van Der Zwan 2014).[2] It is clear from these definitions that financialization "singles out financial markets and gives them special elevated standing" (Palley 2013, p. 2). Palley (op. cit.) also notes that financialization has had significant impact on income and wealth distribution. Capital's share has increased whereas labour's share has decreased. Furthermore, the share of financial sector's profits to total profits has increased while the non-financial sector's share of profits has decreased. An important lesson is that financialization increases financial fragility. The 1997 Southeast Asian

[2] See Sawyer (2014), for example, on the origins and usage of the term financialization.

financial crisis and the international financial crisis of 2007/2008, among other crises, clearly confirmed the financial fragility suggestion.

In discussing the origins of the international financial crisis of 2007/2008, we are very much aware of the limitations of current mainstream macroeconomic analysis. Indeed, we agree with Minsky (1982), who argued over three decades ago that "from the perspective of the standard economic theory of Keynes's day and the presently dominant neoclassical theory, both financial crises and serious fluctuations of output and employment are anomalies: the theory offers no explanation of these phenomena" (p. 60; see, also, Arestis 2009; Palley 2012). Needless to say that financialization as briefly discussed above, and in relation to the international financial crisis of 2007/2008, is very much along the lines of Minsky's (1982, 1986) ideas as developed in his financial instability hypothesis; along with the need for a key role for economic policy to thwart instability, and economic policy discretion (see Palley 2013, Chap. 8, for further details on Minsky's position on all these aspects).

We might add that with the emergence of the international financial crisis of 2007/2008, and the subsequent 'great recession', the Minsky (1982) statement, as stated above, is very valid indeed (see, also, Arestis 2016a). To clarify, the 'Great Recession' was caused by the US financial liberalization attempts, along with the significant income redistribution effects from wages to profits of the financial sector, and the financial architecture that emerged. A relevant statistic in this respect, and in the case of the USA, is reported in the Philippon and Reshef (2009) study, which relates to the above average rise in the salaries of the finance employees. The share of the ratio of the wage bill in the financial sector to its full-time-equivalent employment enjoyed a steep increase over the period from the mid-1980s to 2006 (wages in the financial sector were higher than in the other sectors, even after controlling for education; see, also Arestis 2016b). What explains this development is mainly financial deregulation (accounting for 83 percent of the change in wages) along with distributional effects in the USA (see, for example, Arestis 2016a, b), in a causal way, followed by financial innovation. Further data-based US evidence suggests that the size of the financial sector as a percentage of GDP grew from 2.8 percent in 1950 to 7.9 percent in 2012; in addition, incomes in the US financial sector increased by

70 percent relative to other sectors over the period 1980 to 2012.[3] Similar developments took place in the UK, Canada, China, Germany, and Japan, among others; although the financial shares in these countries were less pronounced, they were still significant.

Ever since both developing and developed countries adopted the essentials of the financial liberalization principle, banking crises have been unusually frequent and severe. The World Bank (1989) publication clearly demonstrates that since the early 1980s, the IMF member countries experiencing significant banking-sector crises amounted to at least two thirds of the total IMF country-membership. It is also true that downturns in economic activity, and substantial real economic costs, emerged as a consequence of the banking crises; this is clearly evident from the experience of the 'great recession' that followed the international financial crisis of 2007/2008 (see Arestis 2016a). We discuss after this introduction, Sect. 1.1, and in Sect. 1.2, the historical background, as well as the theoretical and empirical aspects of financial liberalization. Section 1.3 discusses the relationship between financial liberalization and crises, emphasizing two examples that led to crises, the Southeast Asian crisis and the international financial crisis of 2007/2008 that was followed by the 'Great Recession'. Section 1.4 discusses the economic policy implications of the crises, with an emphasis on the experience of the 'great recession', and on financial stability. Section 1.5 discusses relevant proposals for financial stability. Finally, and in Sect. 1.6, we summarize and conclude.

1.2 Historical, Theoretical, and Empirical Background of Financial Liberalization

We concentrate in this section on the theoretical and empirical aspects of financial liberalization. We begin, nonetheless, with a short historical background to financial liberalization.

[3] The relevant details and numbers referred to in the text are available at: http://www.investopedia.com/terms/f/financialization.asp. See, also, Greenspan (2010).

Historical Background

We may begin with what we might label as the most important intellectual development in terms of the finance–growth nexus, which came from Bagehot (1873), in his classic *Lombard Street*. In that contribution, Bagehot (op. cit.) highlighted the crucial importance of the banking system in promoting economic growth. Indeed, Bagehot (op. cit.) highlighted the circumstances when banks actively spur innovation and future growth by identifying and funding productive investments. The work of Schumpeter (1911), is also important in that financial services are paramount in promoting economic growth, since production requires credit to materialise. Indeed, one "can only become an entrepreneur by previously becoming a debtor. ... What [the entrepreneur] first wants is credit. Before he requires any goods whatever, he requires purchasing power. He is the typical debtor in capitalist society" (p. 102). In this process, the banker is the key agent.

Keynes's (1930) *A Treatise on Money* also highlighted the importance of the banking sector in economic growth. He suggested that bank credit "is the pavement along which production travels, and the bankers if they knew their duty, would provide the transport facilities to just the extent that is required in order that the productive powers of the community can be employed at their full capacity" (vol. II, p. 220). Robinson (1952) clarified by suggesting that financial development follows growth. However, Robinson (op. cit.) does not preclude the possibility that the causation may be bidirectional, in that growth may be constrained by credit creation in less developed financial systems. In more sophisticated systems, however, finance is viewed as endogenous responding to demand requirements. It therefore follows that the more developed a financial system the higher the likelihood of growth causing finance. Furthermore, Robinson (1952) argues that finance responds positively to technological innovation and development. All in all, Robinson's (op. cit.) argument is that "where enterprise leads finance follows" (p. 86).[4]

[4] Other contributors have argued that financial development and financial structure cause technological innovation and development. Yartley (2006), for example, presents panel regression results for a group of developed and developing countries to explain cross-country diffusion of 'innovation and communication technologies' to make the point.

More recently, however, McKinnon (1973) and Shaw (1973) put forward the 'financial liberalization' thesis. Their argument is that government restrictions on the banking system restrain the quantity and quality of investment. Even more recently, and with the development of the endogenous growth literature, the suggestion has emerged that financial intermediation has a positive effect on steady-state growth (see Pagano 1993, for a survey); and of equal importance from this argument's point of view, government intervention in the financial system has a negative effect on the equilibrium growth rate (King and Levine 1993b). There is also the view that finance and growth are unrelated. Lucas (1988) is probably the most frequently cited contribution on this score, who argues that economists 'badly over-stress' the role of the financial system. The difficulty of establishing the link between financial development and economic growth was also identified by Patrick (1966), and further developed by McKinnon (1988) who argued that: "although a higher rate of financial growth is positively correlated with successful real growth, Patrick's (1966) problem remains unresolved: what is the cause and what is the effect? Is finance a leading sector in economic development, or does it simply follow growth in real output which is generated elsewhere?" (p. 390).

The relationship between financial development and economic growth is, therefore, a controversial issue, with causality being an important aspect of the controversy. Attempts have been undertaken to resolve the issue of causality; not an easy exercise as the evidence shows. As noted above, the difficulty of establishing the direction of causality between financial development and economic growth was identified by a number of contributors, who actually questioned the direction of causation. An early attempt to tackle the issue of the strength and causation of the relationship between finance and economic development was undertaken by King and Levine (1993a). They provided empirical results, and argued that Schumpeter (1911) may very well have been 'right' with the suggestion that financial intermediaries promote economic development. The controversial issue of causality between financial development and economic growth could thereby be resolved potentially by resorting to empirical evidence. Arestis and Demetriades (1996) demonstrate that the empirical results of King and Levine (1993a), which were obtained from cross-section country

studies, were not able to address the issue of causality satisfactorily, and proceeded to produce two types of evidence in this context. The first is to show that King and Levine's (op. cit.) causal interpretation is based on a fragile statistical basis. Specifically, it is shown that once the contemporaneous correlation between the main financial indicator and economic growth has been accounted for, there is no longer any evidence to suggest that financial development helps predict future growth. The second type of evidence demonstrates that cross section data sets cannot address the question of causality in a satisfactory way. To perform such a task, time-series data and a time-series approach are required. Adopting the latter approach and using cointegration techniques, as well as time-series data for 12 representative countries, it is shown that there are systematic differences in causality patterns across countries. It thus emerges that, and as shown in another study by Arestis and Demetriades (1997), the proposition that causality from financial development to economic growth is not a straightforward answer; it is clear then that Arestis and Demetriades (1996) were initially correct in at least voicing concerns over causality.

A more recent, and extensive review of the empirical literature by Levine (2005), concludes that "A growing body of empirical analyses, including firm-level studies, industry-level studies, individual country-studies, time-series studies, panel-investigations, and broad cross-country comparisons, demonstrate a strong positive link between the functioning of the financial system and long-run economic growth. While subject to ample qualifications and countervailing views noted throughout this article, the preponderance of evidence suggests that both financial intermediaries and markets matter for growth even when controlling for potential simultaneity bias. Furthermore, microeconomic-based evidence is consistent with the view that better developed financial systems ease external financing constraints facing firms, which illuminates one mechanism through which financial development influences economic growth. Theory and empirical evidence make it difficult to conclude that the financial system merely—and automatically—responds to economic activity, or that financial development is an inconsequential addendum to the process of economic growth" (p. 921). However, there are relevant studies that reveal significant empirical problems. Favara (2003) fails to establish significant coefficients on financial variables in instrumented

growth regressions. Another study, by Rousseau and Wachtel (2001), reports that in high inflation countries the possible effects of finance on growth weaken substantially.

A further aspect of financial liberalization relies on the elasticity of the savings relationship, which is, of course, at the heart of the thesis. The elasticity of the savings relationship is either insignificant or, when significant, it is rather small. Fry (1995), after a comprehensive review of the literature, suggests that "the real interest rate has virtually no direct effect on the level of saving, but may exert an indirect effect by increasing the rate of economic growth" (p. 188). Warman and Thirlwall (1994) also question that part of the theoretical framework of financial liberalization that suggests that rising real interest rates induce more saving and investment and therefore act as a positive stimulus to economic growth. Warman and Thirlwall (op. cit.) provide empirical evidence to support this hypothesis in the case of Mexico over the period 1960–90. In this contribution the important distinction between financial savings (defined as the amount of total savings that is channelled via financial assets) and total savings is made. It is further shown that although financial savings are positively related to real interest rate, total savings are completely invariant to real interest rate; total savings are related to the level of income. Investment is positively related to the supply of bank credit and negatively related to real interest rate. It is also demonstrated that interest rates have no positive effect on growth. Overall financial liberalization and higher real interest rates could only have a positive impact on growth through raising the productivity of investment.

The contributions we have referred to in this section add to the controversial and indeed unconvincing empirical support of the financial liberalization thesis. However, with so much emphasis on the financial liberalization thesis in the context of the growth–finance nexus, a more focused review of its theoretical premise and its policy implications is required. This is undertaken in the section that follows.

Theoretical and Empirical Aspects of Financial Liberalization

The financial sector of an economy provides services to the rest of the economy, whereby financial instruments, markets, and institutions arise to ameliorate market frictions: they can mitigate the effects of incomplete information and transactions costs. It is also true that more recently further studies have accounted for other real sector variables in the relationship between finance and growth. Such variables include the pattern of countries' trade balance and changes in income distribution and poverty levels (see, for example, Beck 2012, who provides a short summary of developments on the finance-growth relationship that go back as far as Smith's 1776, publication). An important recent example in this respect, and as noted above, is the case of the international financial crisis of 2007/2008, where 'distributional effects' were an important main cause of the crisis. Distributional effects, along with financial liberalization especially the repeal of the US 1933 Glass–Steagall Act in 1999, produced the third main cause of the crisis, namely financial innovation (Arestis 2016a). This is a clear case where financial variables do cause crises.

Interest in financial liberalisation emerged from a number of writers who questioned the wisdom of 'financial repression', arguing that it had detrimental effects on the real economy. The relevant financial liberalization literature portrays regulation and control over interest rates as suppressing savings, investment and thereby growth. In this sense, Goldsmith (1969) argued that the main problem with financial repression was its negative effect on the efficiency of capital. McKinnon (1973) and Shaw (1973) stressed two further problems with financial repression: the first is that financial repression affects negatively the efficient allocation of savings to investment; and the second problem, in this view, is that through its effect on the return to savings, it has a restraining influence on the equilibrium level of savings and investment. As a result investment suffers not only in quantity but also in quality terms since bankers do not ration the available funds according to the marginal productivity of investment projects; their ration is according to their own discretion. Under these

circumstances, the financial sector is likely to stagnate. The low return on bank deposits encourages savers to hold their savings in the form of unproductive assets such as land, rather than the potentially productive bank deposits. Similarly, high reserve requirements restrict the supply of bank lending even further; whilst directed credit programmes distort the allocation of credit since political priorities are, in general, not determined by the marginal productivity of different types of capital.

A study that supports financial liberalization explicitly is by Miller (1998), which suggests that whether financial markets "contribute to economic growth is a proposition too obvious for serious discussion" (p. 14). The financial liberalization thesis contents that the removal of interest rate ceilings, reduction of reserve requirements and abolition of directed credit programmes are important ingredients; they would enable the free financial markets to determine the allocation of credit properly, thereby improving bank efficiency. As the real rate of interest adjusts to its equilibrium level, low-yield investment vanishes, with the overall efficiency of investment being enhanced, thereby increasing the average productivity of capital (McKinnon 1989). Moreover, the effects of lower reserve requirements reinforce the effects of higher savings on the supply of bank lending, whilst the abolition of directed credit programmes would lead to an even more efficient allocation of credit, thereby stimulating further the average productivity of capital. It is also argued that as the real rate of interest increases, savings and the supply of credit increase, thereby supporting a higher volume of investment (McKinnon 1973). It is the case, though, and as FitzGerald (2006) points out, the effect of interest rates on savings, which would contribute to investment and thus growth positively, is ambiguous in view of the wealth effect and the relative price effect. These effects are negative and positive respectively, thereby questioning the proposition that higher savings result from financial liberalization.

Still there are a number of studies that argue that the relationship between finance and growth is weak. One such study is by Lucas (1988), which suggests that finance is an "'over-stressed' determinant of economic growth" (p. 6). Another is the study by Robinson (1952), which assumes a passive role for finance with financial development simply following economic growth. Beck et al. (2013) suggest that the finance–growth link

has become weaker over time (see, also, Rousseau and Wachtel 2011). Cecchetti and Kharroubi (2012) argue that the financial sector is "a drag on productivity growth" (p. 14). This is confirmed in a subsequent study by Cecchetti and Kharroubi (2015), where they elaborate further to conclude that the rate of growth of the financial sector harms real growth. Using sectoral data, they also show that credit booms "harm what we normally think as engines of growth—those that are more R&D intensive" (p. 25). Furthermore, there is relevant literature that emphasizes the negative effects of financial liberalization in that it creates financial instabilities and crises with negative effects on economic growth. The early experience of countries with financial liberalization has been reviewed in a number of studies; see, for example, Arestis and Demetriades (1997, 1998), Arestis (2004, 2005), Demetriades and Luintel (1996). Arestis and Stein (2005) study the linkages between financial liberalization and subsequent financial crises, and report on the relevant experience of a total of 53 countries, covering the period between 1980 and 1995, which resulted in financial and banking crises. They conclude that "On the whole, financial liberalization in those and other countries had a destabilising effect on the economy and were abandoned" (p. 384; see, also, Creel et al. 2014). Those experiences lead to the conclusion that financial liberalization typically unleashed a massive demand for credit by households and firms that was not offset by a comparable increase in the saving rate. Loan rates rose as households demanded more credit to finance purchases of consumer durables, and firms plunged into speculative investment in the knowledge that government bailouts would prevent bank failures. In terms of bank behaviour, banks increased deposit and lending rates to compensate for losses attributable to loan defaults. High real interest rates completely failed to increase savings or boost investment—they actually fell as a proportion of GNP over the period. The only type of savings that *did* increase was foreign savings, i.e. external debt. This, however, made the 'liberalized' economies more vulnerable to oscillations in the international economy, increasing the debt/asset ratio and thus service obligations and promoting the debt crises experienced subsequently. Long-term productive investment never materialized either. Instead, short-term speculative activities flourished whereby firms adopted risky financial strategies, thereby causing banking crises and eco-

nomic collapse. Arestis et al. (2015) provide empirical results employing a meta-analysis of the existing empirical evidence on the effects of financial development on growth. They conclude that the meta-regression analysis shows that there are problems with the finance–growth relationship that do not allow positive conclusions in terms of this relationship. Most importantly, panel data, used frequently since the late 1990s, and time-series empirical evidence, produce smaller correlations between financial development and growth. An interesting and relevant empirical study in the case of Brazil is the one by De Paula (2011, Chap. 6) where the impact of financial liberalization on a set of economic variables (mainly inflation and economic growth) is examined. The study concludes that there is no evidence of financial liberalization producing positive effects on such variables. On the contrary, increased financial liberalization in Brazil since the early 1900s, as part of the development strategy of the Washington Consensus and the introduction of the economic policy of the New Consensus Macroeconomics, has had adverse effects on GDP and destabilizing effects on the rate of inflation and exchange rate (both increased over the relevant period of financial liberalization in Brazil).

A further theoretical aspect of financial liberalization is that capital account liberalization has positive effects on economic growth. Arestis and Caner (2005, see also 2010) suggest that removing restrictions on foreign direct investment flows are likely to have a positive impact on GDP growth. Indeed, removing restrictions that aim at prohibiting capital from flowing to certain sectors may lead to a better allocation of resources. However, there could be more costs associated with short-term capital inflows than benefits. For example, where it is not possible to invest short-term capital inflows in productive activities, they could end up creating asset price bubbles, especially when they are channelled into the stock market or the property market—this was the case, for example, with the financial crisis in Southeast Asia. It is also the case that while short-term capital inflows may, in principle, supplement domestic savings and lead to higher levels of investment and growth rates, this benefit is likely to be small in economies with already high saving and investment ratios. Tobin (1978) argues that excessive short-run capital mobility reduces the autonomy of national governments to pursue domestic objectives with respect to employment, output and inflation. Indeed,

Tobin (op. cit.) argues, "the mobility of financial capital limits viable differences among national interest rates and thus severely restricts the ability of central banks and governments to pursue monetary and fiscal policies appropriate to their internal economies" (p. 154). Arestis et al. (2001, 2003) show that during the early stages of this process capital inflows lead to unsustainable asset price increases, fuelling the euphoria of investors and leading to incorrect investment decisions. Relative price distortions and resource mis-allocations of this type are likely to impact GDP growth negatively. Arestis and Caner (2005) suggest that "It is, therefore, not surprising to discover that this is another aspect of financial liberalization that has not produced supportive causal evidence" (p. 101). When it comes to developing countries, the situation with capital-account liberalization entails further problems in view of the argument that markets are particularly imperfect and unstable in these countries. And as Eichengreen (2004) has observed, "if information asymmetries are endemic to financial markets and transactions, then there is no reason to assume that financial liberalization, either domestic or international, will be welfare improving" (p. 50).

There has been a great deal of empirical studies seeking to evaluate the relationship between capital account liberalization and economic growth/macroeconomic stability. Eichengreen (2004, Chap. 3) concludes that the empirical evidence between capital account liberalization and economic growth is not robust. Even earlier, Eichengreen and Leblang (2004) generalized this relationship by suggesting that "the impact of capital account liberalization is more likely to be positive when the domestic financial markets are well developed and regulated and the operation of the international financial system is smooth and stable. It is more likely to be negative when domestic and international financial markets are subject to crises" (p. 2). Kaminsky and Reinhart (1999) investigate financial liberalization when accompanied by capital account liberalization to conclude that such initiatives enhance the possibility of banking crises and/or currency crises. This is particularly relevant in view of the emergence and spread, and the speed at which this has taken place, of new financial instruments, such as derivatives. Speculative financial operations under this type of development increase substantially. It is clear from the results of these and other studies with similar results that the relationship

between capital account liberalization and economic growth is not robust enough, which confirm Eichengreen (2004) conclusions as suggested above. Capital flows in general terms tend to be unstable and can exacerbate both economic booms and recessions, followed by financial crises. It is also the case that excessive short-run capital mobility can, and indeed has had, harmful consequences, especially for developing countries.

There is also the question of whether financial structure, that is whether a country's financial system is bank-based or capital market-based, is able to promote growth. The study by Arestis et al. (2001) demonstrates theoretically and empirically, utilising time series methods and employing data from five developed countries, that the effect of banks on growth is more powerful than that of stock markets. However, there is the view that powerful banks can stymie innovation through protection of established firms and through colluding with firm managers against other creditors. Efficient corporate governance is thereby impeded. By contrast, there is also the view that competitive capital markets reduce the inefficiencies with banks and stimulate economic growth (Levine 2002). Levine (op. cit.) employs cross-country comparisons and concludes that the financial services view, which minimizes the importance of the distinction between bank-based and capital market-based developments, is analytically useful for economic growth. Clearly, and in this view, there is no evidence for significant difference between bank-based or market-based financial systems; the cross-country data strongly support the contention that overall financial development is firmly associated with economic growth. Stiglitz (2004) is critical of capital-market liberalization in more general terms in that it "inhibits the use of counter-cyclical monetary policy" and "leads to more overall economic volatility, and more volatility of consumption"; it also "exposes the country to new shocks, and weakens the built-in shock absorbers in the economy, provided by the price system" (p. 63). The overall conclusion is that capital-market liberalization does not lead to faster growth or higher investment; it might, indeed, affect growth and investment adversely. Stiglitz (2004) also demonstrates that the empirical evidence is also weak in terms of capital-market liberalization.

The problems and criticisms surrounding the financial liberalization thesis over the years since its inauguration have had some impact. This took place when events, following the implementation of financial lib-

eralization prescriptions, did not support the theoretical premises of the financial liberalisation thesis. There occurred a revision of the main tenets of the thesis. Gradual financial liberalization, especially so in developing countries, was to be preferred. In this gradual process a 'sequencing of financial liberalization' (for example, Edwards 1989; McKinnon 1991) is recommended. Employing credibility arguments, Calvo (1988) suggests a narrow focus of reforms with financial liberalization left to last. A further response by the proponents of the financial liberalization thesis has been to argue that where liberalization failed it was because of the existence of implicit or explicit deposit insurance, coupled with inadequate banking supervision and macroeconomic instability (for example, McKinnon 1988, 1989, 1991; Villanueva and Mirakhor 1990; World Bank 1989). These circumstances, it is argued, were conducive to excessive risk-taking by the banks, a form of moral hazard, which produced 'too high' real interest rates, bankruptcies of firms and bank failures. That experience led to the introduction of new elements into the analysis of the financial liberalization thesis in the form of preconditions, which should have to be satisfied before reforms are contemplated and implemented. These include `adequate banking supervision', aiming to ensure that banks have a well-diversified loan portfolio, 'macroeconomic stability', which refers to low and stable inflation, a sustainable fiscal deficit, and sequencing of financial reforms. It is also argued by the proponents that the authorities should move more aggressively on financial reforms in good times and more slowly when borrowers' net worth is reduced by negative shocks, such as recessions and losses due to terms of trade (see, especially, World Bank 1989). In a relevant study, Caprio et al. (1994) reviewed the financial reforms in a number of primarily developing countries with the experience of six countries studied at some depth and length. They concluded that managing the reform process rather than adopting a laissez-faire process was important, and that sequencing along with the initial conditions in finance and macroeconomic stability were critical elements in implementing successfully financial reforms.

Differential speeds of adjustment are now thought of as possible causes of serious problems to attempts at financial liberalization (McKinnon 1991). There are different speeds of adjustment in the financial and

goods markets, whereby the latter are sluggish. Thus, financial markets could not be reformed in the same manner and in the same instance as other markets, without creating awkward difficulties. Recognition of these problems has led the proponents of the financial liberalization thesis to reinforce the desirability of what referred to above as the *sequencing* in financial reforms. Successful reform of the real sector came to be seen as a prerequisite to financial reform. Thus, financial repression would have to be maintained during the first stage of economic liberalization. Furthermore, there is the possibility that different aspects of reform programmes may work at cross-purposes, disrupting the real sector in the process. This is precisely what Sachs (1988) labelled as 'competition of instruments'. Such conflict can occur when abrupt increases in interest rates cause the exchange rate to appreciate rapidly, thereby damaging the real sector. Sequencing becomes important again. It is thus suggested that liberalization of the 'foreign' markets should take place after liberalization of domestic financial markets. In this context, proponents suggest caution in 'sequencing'. This means in this case gradual financial liberalization, with an emphasis at the same time on the achievement of macroeconomic stability and adequate bank supervision as preconditions for successful financial reform (Cho and Khatkhate 1989; McKinnon 1989; Sachs 1988; Villanueva and Mirakhor 1990).

Sequencing, however, does not salvage the financial liberalization thesis for the simple reason that it depends on the assumption that financial markets clear in a Walrasian manner while the goods markets do not. But in the presence of asymmetric information, financial markets too are marred by imperfections. In any case, there is no clear empirical evidence to support the argument that once such preconditions are met countries benefit from financial liberalization. Indeed, and even when the `correct' sequencing took place (e.g. Chile), where trade liberalization had taken place before financial liberalization, not much success can be reported (Lal 1987). The opposite is also true, namely that in those cases, like Uruguay, where the 'reverse' sequencing took place, financial liberalization before trade liberalization, the experience was very much the same as in Chile (Grabel 1995).

Further problems can emanate from asymmetric information, which could very well produce monopolistic tendencies in view of the restric-

tions on competition amongst banks. The problems of *adverse selection*, when sellers have information that buyers do not know of (or vice versa), and *moral hazard*, when there is asymmetric information between two parties, are acute in the financial sector and have important implications for the effects of financial liberalization. These problems suggest that the existence of operators in the financial markets who are prepared to take excessively high risks implies higher interest rates than otherwise and, presumably, a lower total supply of funds, thereby inducing financial instability. This could emerge from inadequate measure by banks of risk associated with bank lending. In their attempt to compensate for this risk, banks' lending rates are increased, which deteriorates the creditworthiness of borrowers; also in addition, new firms with no past credit record would find funding difficult to obtain at any price. A further implication is that under these circumstances, banks gamble for higher profit by lending to the booming sectors, such as real estate, which could lead to an asset price boom, and thereby would lead to banking crises—the case of the international financial crisis of 2007/2008 is very relevant in this context (see, for example, Arestis 2016a).

A related problem is that of 'liquidity constraints', which both firms and households can be faced with; this can arise as a result of financial market imperfections. There is actually considerable evidence that households face liquidity constraints in developing countries in particular, caused by the presence of incomplete information in credit markets. These imperfections may be caused by asymmetric information in liberalized markets, which can lead to equilibrium credit rationing (Stiglitz and Weiss 1981). A further destabilizing effect in this context is that financial liberalization by producing higher interest rates is likely to be accompanied by destabilizing consequences for the macro economy. In addition, the thesis ignores the advantages of using low interest rates and, thus, credit selection especially for development purposes.

An interesting issue of both the theoretical and empirical literature is the attempt to study the impact of financial liberalization on income inequality and poverty. As the experience prior to the international financial crisis of 2007/2008 had shown, income inequality increased considerably along with the emergence of significant financial liberalization

attempts in the USA and elsewhere, which were two of the main causes of the crisis. Under such circumstances it is not really possible to conclude that financial liberalization has unambiguously reduced inequality. The opposite conclusion might be more relevant (Arestis 2016a). A recent study by the IMF (Naceur and Zhang 2016) provides evidence on the basis of a sample of 143 countries from 1961 to 2011 that shows financial liberalization, particularly capital account liberalization, increases inequality and poverty. Gini coefficients are estimated, which increase income inequality, along with the poverty gap index, which increases the average income shortfall of the poor from the poverty line. Both estimations clearly support the conclusion in Arestis (2016a). Another IMF study (Furceri and Loungani 2016) is also supportive of this conclusion in the case of capital account liberalization and inequality. Furceri and Loungani (op. cit.) suggest that in all recent episodes of capital account liberalization, increase in income inequality followed. In fact they argue that "The short-term impact after two years is similar in both advanced and emerging countries, but in the medium term, after five years, inequality widens more in emerging markets" (p. 44).

The post hoc theoretical revisions of the financial liberalization thesis, as discussed above, were thought sufficient to defend the original thesis of a disappointing empirical record. Despite all these modifications, still there is serious absence of sufficient empirical evidence to support them; for it is the case that empirical studies in general have not produced convincing empirical evidence that supports the proposition that financial liberalization has enhanced economic growth in developed and developing countries. However, no amount of revision has changed the objective of the thesis, which is to pursue the *optimal* path to financial liberalization, free from any political, i.e. state, intervention. But there are still further problems that relate financial liberalization to crises, which we discus in the section that follows.

1.3 Financial Liberalization and Crises

Ever since the early 1970s when financial liberalization was enacted, the frequency and depth of financial crises have been exacerbated. Laeven and Valencia (2012) record 346 financial crises in the period 1970 to 2011, of which 99 were banking crises, 18 sovereign debt crises and 153 currency crises, 11 banking and debt crises, 28 banking and currency crises, 29 debt and currency crises, and 8 crises that combined all three elements. A total of 25 banking crises are recorded for the period 2007 to 2011. Laeven and Valencia (op. cit.) show that output losses of systemic banking crises can be enormous. The fiscal cost of a systemic banking crisis is estimated to be 13 percent of GDP on average; and could be as high as 55 percent of GDP. Over the first four years of the crisis, output losses on average are estimated about 20 percent of GDP. Laeven and Valencia (2013) "identify 147 banking crises, of which 13 are borderline events, over the period 1970–2011" (p. 226). They "also count 211 currency crises and 66 sovereign crises over the period" (p. 226). Kaminsky and Reinhart (1999) show that in the post-liberalization period of the 1980s and 1990s banking crises increased considerably. Eichengreen and Arteta (2002) provide a survey of empirical studies, which provide strong evidence of the proposition that financial liberalization increases the likelihood of systematic banking crises. Indeed, and as the international financial crisis of 2007/2008 and the subsequent 'great recession' show, the costs of a systemic banking crisis to the affected economies is substantially high with lasting effects to their real sectors.

Majerbi and Rachdi (2014) study the link between financial liberalization and the likelihood of systemic banking crises by using measures of financial liberalization that account for the quality of the institutional environment at various stages of financial liberalization. Their model-estimation approach allows for the determinants of banking crises to vary depending on the country groupings that include homogeneous economies in each panel of their logit regressions. Majerbi and Rachdi (2014) use for their measure of financial liberalization the Financial Reform Index initially proposed by Abiad et al. (2008). The main advantage of this index is that it allows for cross-country variations of financial liber-

alization over time. A multivariate logit model is employed to estimate the probability of systemic banking crises, based on a sample of 53 countries over the period 1980–2005 covering 48 systemic crises. An inverted U-shaped relationship between financial liberalization and systemic banking crises is the overall conclusion of this study. Financial liberalization increases the possibility of a banking crisis at the early stages of financial reforms; at later stages advanced financial reforms tend to reduce the probability of banking crises. The turning point at which financial liberalization begins to be negatively related to the probability of banking crises varies depending on the type of the economy examined (high income-developed countries versus emerging/developing countries). It is also shown that the institutional environment and the quality of the banking sector governance in the country considered are very important. Indeed and also as demonstrated in the Majerbi and Rachdi (2014) study, stricter banking regulation and supervision reduce the probability of financial crises.

In what follows we concentrate on two of these crises, perhaps the most serious in terms of their impact, in an attempt to elaborate on the relationship between financial liberalization and crises. These crises, the Southeast Asian crisis of 1997/1998 and, especially, the recent international financial crisis of 2007/2008 and the subsequent 'great recession', have shed doubt on the previous findings of a positive impact of finance on growth.

We begin with the financial Southeast Asia of 1997/1998 crisis. In doing so, we concentrate on the study by Arestis and Glickman (2002), which attempts to clarify the finance/growth relationship, and in the case of the Southeast Asia crisis. In doing so, Arestis and Glickman (op. cit.) focus on the role of financial liberalization in the process. Southeast Asian countries (Indonesia, Korea, Malaysia, the Philippines, and Thailand) introduced and implemented financial liberalization programmes in the early 1990s. The Arestis and Glickman (op. cit.) analysis suggests that the threats to growth and employment emanating from the financial sector, which Minsky (1986) identified in the closed economy setting, are greatly intensified in the open, liberalized, economies. Financial liberalization is demonstrated to be a key factor in this process. The gist of the argument is that "financial liberalization produces an upward step-change

in the intensity of the domestic drive towards financial innovation, as it sweeps away the rules and conventions which previously governed the way banks related to one another and their customers. It thereby speeds up the process by which debt ratios of commercial concerns and financial institutions rise, escalating financial fragility, and it hastens the day when banking and financial crises loom" (Arestis and Glickman 2002, pp. 244–245).

A number of studies attempted to investigate the impact of financial liberalization between 1990 and 1997 on bank performance, efficiency, and productivity in the case of Southeast Asian countries. The majority of studies are country-specific and the results are summarized in the contribution by Williams and Nguyen (2005), who conclude that the empirical evidence of these studies is very mixed. The study by Williams and Nguyen (op. cit.) provides empirical evidence for the period 1990 to 2003 that relates to the 1997 crisis, and substantial bank restructuring that followed it, to conclude that bank privatization produced superior profit performance and strong productivity. Foreign acquisition, however, although it helped to improve profit efficiency, their productivity performance was not as strong. Indeed, and as elaborated earlier in this contribution, proponents of financial liberalization favour 'sequenced' programmes of 'free' market reforms. But such reforms only serve to weaken the barrier of financial conservatism, which acts to contain pressures leading to the fragility of the financial system. This, however, raises the feeling of invulnerability, weakening inhibitions against speculation and reinforcing the tendency towards euphoria and thereby leading to more speculation not less (Minsky 1986).

The Southeast Asian crisis provides a good example in terms of what has just been suggested in the case of an open economy. In the absence of capital controls, speculators turn their attention to the domestic economy, especially so if interest rate differentials are in their favour. Capital inflows offset any tendency for the domestic upswing to push interest rates higher. The exchange rate may be pegged without much difficulty, or allowed to appreciate. In either case, the external position is interpreted as evidence of 'economic' health, fuelling optimism further. Success is an endogenous factor driving financial innovation forward, and openness extends the scope of achievable success. Sooner or later the economy can

be led to one of the following: a crisis that is domestic in origin but impacts on its external situation; or a crisis that is external in origin but impacts on its domestic situation; or a crisis that is a combination of these two factors. Under these conditions, the exchange rate becomes a source of further uncertainty. Speculators begin to doubt the ability of the state to support its currency, and they may very well move against the currency concerned, possibly on a massive scale as in the case of the Southeast Asian crisis. This analysis clearly suggests that financial liberalization leads to crises.

Another relevant case we discuss next is the US financial liberalization experience prior to the international financial crisis of 2007/2008. Financial liberalization in the US began in 1977, when the US started to deregulate its financial system, and also as Galbraith (2012) suggests, "deregulation was followed by desupervision, as US regulatory authorities made calculated decisions not to investigate financial-sector practices" (p. 4). The apotheosis of the financial liberalization in the USA, however, took place in 1999 with the repeal of the 1933 Glass–Steagall Act. The 1933 Glass–Steagall Act was designed to avoid the experience of the 1920s/1930s in terms of the conflict of interest between the commercial and the investment arms of large financial conglomerates (whereby the investment branch took high risk tolerance). The ultimate aim of the 1933 Glass–Steagall Act was to separate the activities of commercial banks and the risk-taking 'investment or merchant' banks along with strict regulation of the financial services industry. In effect, the Glass–Steagall Act of 1933 broke up the most powerful banks. The goal was to avoid a repetition of the speculative, leveraged excesses of the 1920s/1930s. That Act also provided from around the mid-1930s to the mid-1970s a range of direct controls on bank lending and exchange controls on international flows. It is relevant to also note that the period of the late 1930s to the mid-1970s was free from serious banking crises as Bordo et al. (2001) demonstrate. Haldane (2010, Chart 2) also shows that the 1933 Act was effective from the 1930s to the late 1980s when the US authorities began to relax it. The repeal of the Act in 1999 enabled investment banks to branch into new activities; and it allowed commercial banks to encroach on the investment banks' other traditional preserves. Not just commercial banks but also insurance and other companies, like the American

International Group (AIG), and hedge funds, were also involved in the encroaching.

The repeal of the Glass–Steagall Act in 1999, thereby allowing the merging of commercial with investment banking, enabled financial institutions to use risk management in their attempt to dispose off their loan portfolio. This was also helped by "a greater willingness to supply credit to low-income households, the impetus for which came in significant measure from the government" (Rajan 2010, p. 40). House prices kept rising over the period 1998 to 2006 with an unprecedented height to the US housing price bubble during 2000–2006 primarily (Reinhart 2012, p. 17), which enabled households to borrow against home equity they had built up. Those developments led to an important financial innovation. Financial institutions engineered a new activity, through the 'shadow banking' system, that relied on interlinked securities, the Collateralized Debt Obligations (CDOs), mainly emerging from and closely related to the assets of the Subprime Mortgage Market. The sale of CDOs to international investors made the US housing bubble a global problem and provided the transmission mechanism for the contagion to the rest of the world.

With the house-price increases coming to an end by the end of 2006 and the reversal of interest rates by August 2007, when long-term interest rates fell below short-term interest rates, the collapse of the subprime market emerged. As a result, the banks and 'shadow banking' stopped their lending procedures, which resulted to their grinding to a halt, along with the wider financial system also grinding to a halt. It all spilled over into the real economy through the credit crunch and collapsing equity markets; and all that led to the freezing of the interbank lending market after August 2007. A significant recession emerged: the 'Great Recession' (see, also, Arestis 2016a). An important implication is that when powerful financial institutions are allowed to behave recklessly "because the regulations that might have restrained them were negligently applied or missing entirely" (Jarsulic 2010, p. 127), serious implications follow. The idea that financial markets perform in a stable and self-correcting manner has been seriously challenged yet again. Policy implications need to be seriously considered.

1.4 Policy Implications

It follows from the above analysis that financial liberalization is not free of financial crises. We have demonstrated that unregulated markets, due to financial liberalization, have actually produced crises. Keynes (1936, pp. 100–101) observed that this tendency would be exacerbated in the case of financial markets. Furthermore, and as the two examples of financial crises discussed in the last section clearly imply, economic policy implications should be seriously considered. The current economic policy, known as inflation targeting, and its theoretical framework, under the auspices of the New Consensus Macroeconomics (see, for example, Arestis 2009, 2011), contain a number of relevant problems. The most serious one, from the point of view of this contribution, is that manipulation of the rate of interest to achieve price stability, the single objective of economic policy, which would enable markets to produce macroeconomic stability and growth, cannot be right. Indeed, the evidence from the international financial crisis of 2007/2008 and the subsequent 'great recession' strongly support this proposition (Arestis 2016a).

The IMF (2010b) study suggests that financial stability, in the form of macroprudential policies, should be implemented and replace interest rate policy measures, especially so if the current low interest rates were to produce excessive risk-taking or bubbles. The IMF (2010c) study proposes that a macroprudential approach to contain systemic effects of 'too-important-to-fail' institutions, including now non-bank financial institutions, is also an important policy initiative that should be seriously considered. Macroprudential policy to prevent asset and credit bubbles than merely monetary policy is another suggestion by Bean et al. (2010). It is to be noted, though, that even under the presence of macroprudential regulation, monetary policy affects financial stability (Agur and Demertzis 2015). A change in the rate of interest affects banks' behaviour through two channels: the profit and leverage ones, which can affect bank risk; with the direction of impact depending on the state of the financial cycle (Agur and Haksar, op. cit., p. 18). It is, though, the task of macroprudential authority to offset the negative effects of monetary policy on financial stability. Zdzienicka et al. (2015) provide empirical evidence

in the case of the United States that suggests, "monetary policy shocks have significant and persistent effects on financial conditions and can attenuate long-term financial instability" (p. 5). By contrast, and in the case of macroprudential policy measures, their impact "is generally more immediate but shorter-lasting" (p. 5). In addition, "monetary and macroprudential policy tightening measures tend to have larger effects than easing ones. Also, the effect of monetary policy shocks and macroprudential policy tightening measures tend to be larger during recessions than in expansions" (p. 5). An important implication of these contributions is then "that governments must bear a responsibility not only for allowing the recession to develop but also for the measures needed to counteract it. Governments can and must act to control market failure in ways that the market left to itself cannot" (Gould 2013, p. 164).

The conclusion from this analysis is then that financial stability and monetary policy should be the responsibilities of the central bank. This means, of course, that central banks would have an added objective—that of financial stability. Such an additional objective, though, raises the issue of how to incorporate financial stability in the loss function of the central bank in view of the fact that it is impossible to measure such a variable. Blinder (2010) raises the issue and wonders "whether the right loss function is actually lexicographic, with financial stability logically prior to the other goals" (p. 4). This is a serious challenge for those central banks that use the 'New Consensus Macroeconomics' modelling framework (see, for example, Arestis 2009, 2011). One might ask at this stage, as the ex-IMF Managing Director did, "What about fiscal policy? Under the old paradigm, fiscal policy was definitely the *neglected child* of the policy family. Its role was limited to automatic stabilizers—letting budget deficits move up and down with the cycle—and discretionary policy was regarded with deep suspicion. But fiscal policy had a *Sleeping Beauty* moment during the crisis, with monetary policy running out of steam, and with the financial system on its knees, the forgotten tool arrived to prop up aggregate demand and save the world from an economic freefall. We need to rethink fiscal policy" (Strauss-Khan 2011, p. 3). Indeed, we have to rethink fiscal policy seriously and suggest that the time has come to assign a strong macroeconomic role to it (Arestis 2012). We go further, nonetheless, and suggest that monetary and financial stability policies should be coordinated. In

addition, we argue that it is vital for full coordination of both policies with fiscal policy, along with discretion in applying them. Fiscal policy should be used both in the short term and in the long term to address demand issues (Arestis 2015). In this respect, relatively frequent adjustments to fiscal stance in the light of macroeconomic developments are necessary.

We may summarize the argument that the main operation of any central bank should be directed towards financial stability. The events leading to the 'Great Recession' testify to this important requirement. Financial stability has not been addressed properly, and as such it requires further investigation. The focus of financial stability should be on the proper control of the financial sector so that it becomes socially and economically useful to the economy as a whole and to the productive economy in particular. Banks should serve the needs of their customers rather than provide short-term gains for shareholders and huge profits for themselves. Indeed, it is paramount for a central bank "to maintain a proper prudential supervision of banks and of the financial sector more generally—something that has, as has become apparent, been sadly missed from the scene in many western countries over recent years. A central bank should regulate and enable the banks to interact with other sectors in the economy in an efficient way that benefits the economy as a whole" (Gould 2013, p. 113). De-financialization thereby would help to achieve the objective of shrinking the financial sector. In this sense the suggestion by Lawrence (2014) that de-financialization through measures such as targeting credit at the productive economy and a reassertion of the public interest in the financial system is very apt. We would further suggest that separating investment banking from commercial banking is the right step forward. Currently, most commercial banks sit alongside the risky activities of investment banking in pursuit of quick profits. The separation of the two types of banking should allow commercial banks to pursue the activities as suggested above, while the investment banks should be allowed to go bust, if necessary. Such separation should produce greater financial-sector discipline and also avoid moral hazard.

A further suggestion emerges from the following observations. Asset-price inflation can get out of control, with bubbles emerging and although while they grow they generate a lot of euphoria, ultimately they burst with devastating consequences not only for the investors in the stock

markets, but also for the economy as a whole. The experience of the last thirty years or so shows that the adverse consequences of the burst of a bubble hit not only weak economies, but also strong economies such as the USA and Japan. In addition, it may be that inflation-targeting type of policies is inconsistent with house price stability in that they exacerbate fluctuations in housing. Monetary policy should, therefore, target asset prices. Indeed, net wealth as a percentage of disposable income may be the ideal variable for targeting asset price inflation (Arestis and Karakitsos 2009). Net wealth is defined as the assets (financial and tangible) less the liabilities of the personal sector, which include mortgage debt and consumer credit. Net wealth is an ideal variable to monitor (and control) bubbles. A wealth target would not impede the free functioning of the financial system as it deals with the consequences of the rise and fall of asset prices in the economy and is not a target of asset prices—that is *e*quities or houses, per se. The central bank monitors the implications of financial innovations as they affect wealth, even if it is ignorant of these innovations, as for example in the case of the US 'shadow banking' activities.[5] It is a variable that affects demand directly in the economy. As such, it is at the heart of the transmission mechanism of asset prices and debt to consumption. Information on the constituent elements of net wealth is available and published regularly.[6]

[5] It should be noted that there has been explicit opposition to targeting asset markets and asset prices on two arguments. One argument suggests that trying to stabilize asset prices is problematic: it is uncertain whether a given change in asset values results from fundamental or non-fundamental factors or both. Proactive monetary policy would require the authorities to outperform market participants. Another argument is that the size of the change in the rate of interest to prick a bubble may be substantial and harmful to the real economy. Both Bernanke (2002) and Greenspan (2002a, b) argued against targeting asset prices with their views based on these two arguments. Neither of these arguments is relevant in terms of our suggestion to target net wealth as it is clear from the arguments as in the text. Asset price bubbles can be very harmful, a very good recent example is the international financial crisis of 2007/2008, and appropriate policies are very relevant and urgently required.

[6] Goodhart and Persaud (2008) propose a 'counter-cyclical capital standards' to tackle asset price bubbles. Capital standards would rise in booms to avoid excessive asset price increases and overexpansion of financial intermediary balance sheets; and would fall in the downswing to avoid excessive fall in credit provision. Another relevant proposal is by Palley (2013) who argues for an 'asset-based reserve requirements', which, it is suggested, "can enhance counter-cyclical monetary policy" (p. 165). Under such a system financial intermediaries would hold reserves against their assets and this should be applied to all financial intermediaries. Such a system would work through

With the objective of financial stability, the Central Bank would become more like a Central Financial Agency (CFA). It would be responsible for policies, which seek to influence the credit and lending policies of the full range of financial institutions. Re-establishing a system designed to meet the needs of the real economy and the users of financial services rather than to benefit financial intermediaries, is paramount. As suggested above, and in this context, full coordination of both monetary and financial stability policies with fiscal policy, along with discretion in applying them, is very important. Above all, however, the economic policy dimension of financial liberalization has not performed well and as such it should never be pursued. In view of such importance attached to financial stability, the interesting question is, then, the extent to which relevant proposals have been suggested and indeed pursued. This is the focus of the next section.

1.5 Financial Stability Proposals

Proposals that aim to ensure financial stability have been put forward and we briefly comment on them. The most important probably is the Dodd–Frank Act of 2010. The Act contains a number of important constituent elements; the ones relevant to this contribution are as follows. Eliminate proprietary investments (namely to prohibit banks that take insured deposits from running their own trading operations) and also no longer allow ownership of hedge funds by banks; in the final Act this was modified to the banks being allowed to hold proprietary investments of 3 percent of their core capital. Size matters: no financial firm should be allowed to become 'too big to fail'. End of taxpayer bailouts: the legislation grants government the power to wind down failing institutions, not just banks, if they threaten the financial system. A new 'orderly liquidation' authority is equipped with the power to seize a failing 'systemically important' institution. Another important aspect of the Dodd–Frank Act is the proposal that the 'shadow banking' and the non-bank finan-

the interest rate channel but changes in interest rates would be targeting a particular asset class with changing the rate of interest for that particular class.

cial service companies should be properly regulated. It also proposes the introduction of a new Office of Credit Ratings to supervise credit rating agencies. It should be noted that the Dodd–Frank Act has effectively left it to new regulatory bodies to decide further on all these issues.

This Act may not be the Glass–Steagall Act of 1933, but it is the most sweeping and wide-ranging overhaul of the US financial regulations since the 1930s. However, whether this Act would have prevented the 'Great Recession' is an interesting question. Our response is on the negative in view of the non-separation of commercial and investment entities, as the experience leading to the international financial crisis of 2007/2008 demonstrated.

Following the US initiative, a UK government-appointed commission on banking was set up in June 2010 to provide a year-long analysis of whether banks should be split up into commercial and investment entities, and whether a version of the Dodd–Frank Act would be appropriate for UK banking. Its final report and recommendations were presented in September 2011. The Vickers Report, as it is now known, recommends 'ring-fencing' banks' retail operations from their investment banking activities, whether conducted by UK or foreign-owned banks. The main problem of ring-fencing is that banks may be encouraged to take greater risk with the activities inside the ring-fencing, such as mortgages, corporate and personal assets. This may be so since such activities would be more likely to be bailed out.

A similar trading ring-fence proposal came from the Committee commissioned by the European Commission and headed by the Governor of the Bank of Finland (and ECB council member), the Central Bank of Finland, Erkki Liikanen. This committee was set up in November 2011 and The Liikanen Report or 'Report of the European Commission's High-level Expert Group on Bank Structural Reform' (known as the 'Liikanen Group') is a set of recommendations published in October 2012 by a group of experts led by Erkki Liikanen.

The Liikanen Report (2012) suggests ring-fencing but in the case of the European banks it should be the investment banking activities of investment banks' operations, not of retail activities as in the Vickers Report. In the report's view, similar to that of the Vickers Report, "The central objectives of the separation are to make banking groups, especially their

socially most vital parts (mainly deposit-taking and providing financial services to the non-financial sectors in the economy), safer and less connected to high-risk trading activities and to limit the implicit or explicit stake of taxpayer in the trading parts of banking groups. The Group's recommendations regarding separation concern businesses which are considered to represent the riskiest parts of trading activities and where risk positions can change most rapidly" (p. i). This report, like the Vickers one, has been criticized on a number of grounds: There is no predefined 'resolution regime', which can wind banks down in the case of a disaster scenario. Banks, even ring-fenced ones, may still be bailed out by governments in a crisis. Such a reform could disrupt the flow of corporate funding in that companies may very well turn away from bank loans to capital markets for bond funding; and ring-fencing trading assets, would limit the liquidity of corporate bond trading, thereby making this form of financing more expensive.

Further proposals that intend to deal with the size of financial institutions come from the IMF. These proposals include for the financial institutions more and higher capital requirements, as well as more liquid assets, along with the adoption of legal regimes that provide for the orderly resolution of failing institutions. Strong and effective supervision, along with political support, is an essential part of any serious and lasting reform of the financial sector. A complement to these regulatory reforms is to tax the financial sector. This would discourage excessive size as well as wholesale financing, two serious problems in the 'great recession'.

The IMF (2010a) bank tax proposals, for the G20 finance ministers, are relevant in this context and rely heavily on the need for a global approach. They are designed to ensure that financial institutions bear the direct costs of future failures or crises. In this way, future bailouts would be funded by the banks paying the costs of financial and economic rescue packages. These tax plans comprise of: (i) a financial stability tax, in the IMF language a 'Financial Stability Contribution' (FSC) tax, which would require banks and other financial institutions to pay a bank levy, initially at a flat rate. This would be later adjusted to reflect risk so that financial sector activities that pose a greater risk would pay a higher rate. This type of tax is designed to fund future government support, and thereby avoid 'moral hazard' problems. At a later stage, (ii) a financial

activity tax (FAT) is proposed, which is a tax on the sum total of profits and remunerations paid by financial institutions (see, also, Sawyer 2015). The sum would be a kind of Value-Added Tax (VAT), a tax from which financial institutions are currently exempt. So that imposing such a tax could make the tax treatment of the financial sector similar to other sectors. This would deter the financial sector from being too large on purely tax reasons. It would also contain the tendency of the financial sector for excessive risk-taking. Further proposals (IMF 2010b) include higher capital requirements and liquid assets; also the adoption of legal regimes that would provide for the orderly resolution of failing institutions.

It might be, though, that neither 'too big to fail' nor taxing the financial institutions should be considered in isolation. They are both necessary and should be treated as such, along with relevant international agreements. In this sense IMF suggest that global financial stability would help in that the reforms should be "nationally relevant and internationally consistent" (IMF 2010b, p. 26). Not likely, though, in view of disagreements among the G20 members.

Objections to this proposal have been raised by the central banks of mainly Australia, Brazil, Canada and Japan, the least affected countries by the 'great recession'. They argued that taxing banks would reduce in effect their capital thereby making them more, not less, vulnerable to financial crises. Banks have argued that taxing liabilities and transactions to stave off future financial crises carry their own problems. Most important of which is that taxes would not reduce risk in the system; on the contrary, it might increase risk by implicitly building in insurance for bank's risky behaviour. Another objection is that under such plans the financial sector would not be able to provide the products and services demanded by their customers. Such rules might create a new credit crunch if introduced without full consideration of these possibilities. Requiring banks to hold more capital could actually result in banks providing less lending than otherwise. Banks have, thus, resisted reform, on weak grounds in effect, but with powerful lobbying. And yet substantial and far-reaching reforms are absolutely necessary to avoid another similar crisis.

The 27 member countries of the International Basel Committee on Banking Supervision of the Bank for International Settlements with the Group of Central Bank Governors and Heads of Supervision at their

meeting on 12 September 2010 reached an agreement on regulatory issues. Further discussion took place at the first 2011 G20 meeting in Paris (see, for example, BIS 2011). The so-called 'Basel III Package' was concerned with bank capital and liquidity standards. The new ruling, phased in from January 2013 with full implementation to be achieved by January 2019, has only dealt with bank capital.

It requires banks to hold equity at 9.5 percent of their Risk-Weighted Assets (RWA); and liquidity standards include a liquidity coverage ratio, which requires banks to meet a 3 percent leverage ratio. The timetable is a victory for the banks, which gives them longer to earn profits to offset against losses accumulated during the 'Great Recession' and in the process tax advantages emerge. The new capital ratios are lower than they might have been and also they are not to be fully implemented until 2019. This long phase-in period seems to have been a concession to small banks, especially in Germany. These are the banks that would struggle with the new rules presumably because of undercapitalization. Another problem is that unlike the US Dodd–Frank Act, which provided relevant regulations in the case of banks migrating to the 'shadow banking' sector and to the lightly supervised non-bank financial services companies, Basel III does not contain such provision. A further problem concerns the definition of the capital ratio, which is defined in relation to RWA, not to total assets. An implication of this is that toxic leverage is highly probable, when the RWA is a small proportion of total assets; the exposure of the banking sector to risk would be very high under such eventuality.

The IMF in its 2012 Global Financial Stability Report (IMF 2012), argues that Basel III rules would exacerbate the 'too-big-to-fail' problem. It is suggested that "Big banking groups with advantages of scale may be better able to absorb the costs of the regulations; as a result, they may become even more prominent in certain markets, making these markets more concentrated". The IMF (op. cit.) is particularly concerned that banks with large shares of their activity in fixed income, currency and commodity markets would become even more dominant. The IMF also cautions that Basel III rules raise the incentive to develop new products to circumvent the framework. There is also a 'high chance' that the framework would push riskier activity into less regulated parts of the

financial system. Clearly, then, Basel III has failed to correct the mechanism through which the main cause of the 'great recession' emerged.

Radical measures to increase stability and competition in the financial sector have been bypassed. Under such circumstances it should not be surprising for another similar crisis to take place. All in all, and given the key role of Basel III in the global regulatory system, it would appear that financial stability remains unresolved and elusive. What is required is a complete institutional separation of retail banking from investment banking.

1.6 Summary and Conclusions

Our discussion in this contribution of the theoretical premise, and relevant empirical evidence, of what has come to be known as the financial liberalization thesis, has suggested that the critical issues of the thesis are marred by serious criticisms. Furthermore, financial liberalization has caused crises, as discussed in this contribution. Policy implications emerge, which are very different from those of the financial liberalization thesis. The financial system is unstable, and as such policies are needed. Relevant policy implications have been identified and policy proposals have been suggested. The most important policy proposals of this discussion is that financial stability focused on proper control of the financial sector is urgent along with coordination with monetary and fiscal policies.

Even so, and in terms of policy implementation despite the fact that a number of relevant proposals have been put forward as discussed in this contribution, relevant solutions are still waiting in vain; the banking reform remains a work in progress across the world (see, also, Arestis 2016a). It is the case that such inactivity is in place. For it is true that worldwide progress on financial reform is extremely slow; and a worrying poverty of action is in place. The IMF managing director (Lagarde 2014) suggests that "the behaviour of the financial sector has not changed fundamentally in a number of dimensions since the financial crisis"; and proceeds to complain that "The bad news is that progress is still too slow, and the finish line is still too far". We may thereby conclude by suggesting that the pre-2007 laissez-faire approach is in need of substantial

reforms. There is, however, a lesson from the failures of the various proposed reforms, which is that working within the pre-2007 paradigm, and yet suggesting policy proposals is simply not good enough. More effective financial stability policies are desperately needed.

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2

Confronting Financialisation

Malcolm Sawyer

Abstract The period since *c*. 1980 has been as one of financialization, involving the growth of the financial sector, development of a wide range of financial instruments, deregulation and liberalization, the ownership of corporations by financial institutions and the pursuit of 'shareholder value', privatization and de-mutualization of the financial sector, etc. Financialization has global reach, but develops at different speeds and forms. Many researchers have pointed to deleterious effects on the economy and society of these processes of financialization, in some contrast to previous mainstream economics research which had portrayed the growth of the financial sector as economically and socially beneficial. The relationships between the growth of the financial sector and economic performance are reviewed. The general conclusion reached is that the financial sector has become 'too large'. This leads into discussion of de-financialization through the development of alternative financial institutions focused on alternative ownership forms and objectives, and the use of taxation.

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2.1 Introduction[1]

In the industrialized countries financialization, alongside globalisation and neoliberalism, have been central to the developments of capitalist economies over the past three to four decades. These features have, of course, spread throughout the global and of particular interest financialization has become a major feature of emerging markets. Particularly in the aftermath of the financial crises of 2007/08, there have been major questions of what have been the effects of financialisation on the wider economy, society and the polity.

This chapter begins with a discussion of what is to be understood by the term financialization. This is followed (Sect. 2.3) by a review of the literature, concerned with the question of the effects of financialization and of the size of the financial sector on economic and social performance. As the conclusion drawn is that financialization in the forms which it has taken has been on the whole detrimental for economic performance, Sect. 2.4 considers some policy possibilities for definancialization. In the concluding section some remarks are offered on the political power of the financial sector and its ability to block political change.

[1] This paper draws on the results of research undertaken within the project Financialisation, Economy, Society and Sustainable Development (FESSUD), which received funding from the European Union Seventh Framework Programme (FP7/2007–2013) under grant agreement no. 266800, and for which I am the principal investigator. The views expressed in this paper are mine, and do not reflect the views of the partners within the FESSUD project nor of the European Commission. Information on FESSUD and for the working papers arising from the project, consult www.fessud.eu. I am grateful to Philip Arestis and participants in the conferences held at the University of Cambridge, St Catharine's College, for comments and discussion.

2.2 Remarks on Financialization

Financialization has been defined in a number of ways and synonyms such as financialized capitalism have often been used. The term financialization is used here along the lines of the "the increasing role of financial motives, financial markets, financial actors and financial institutions in the operation of the domestic and international economies" (Epstein 2005a, p. 3). Financialization (in the sense of the general growth of the banking and financial sectors) has been a long-standing feature of capitalist economies, and indeed it would be difficult to envisage capitalism without a substantial financial sector. Commercial banks and stock markets date back before the nineteenth century, and their growth got underway during the nineteenth century alongside industrialization. Vercelli (2014) argues that the tendency towards a financialization of the economy developed very slowly as it has often been constrained for religious, ethical, and political reasons, with the prohibition of usury being a notable example. However, he states that there are periods of acceleration of the process of financialization when there is a relaxation of financial repression but also periods of deceleration and even phases of de-financialization and decline of the financial sector when financial repression is strengthened. However, the periods of de-financialization are relatively brief interruptions to the general upward trend of financialization.

Vercelli (2014) focused on two periods of acceleration of the long-term process of financialisation. "The First financialisation occurred in the second half of the nineteenth century and lasted until the beginning of the Great Depression, while the Second financialisation started after the end of the Bretton Woods period (1971) and is going on unchallenged notwithstanding the crisis" (p. 25). Two observations can be made on this periodization. The first is to be mindful of the geographic scope of financialization. In the first period much attention is placed on the USA, and a range of European countries (notably UK and Germany), though the global aspects (at least in terms of portfolio investment) would be recognized. The second is how the period of the 1950s and 1960s (the 'golden age of capitalism') is to be represented in that it also often involved (in the industrialized economies)

growth of the financial sector, albeit within a framework of controls and regulation with those controls and regulations gradually being reduced.

A different, though overlapping periodization comes from Minsky (1988, 1993), who identifies four capitalist stages, which he labelled commercial, financial, managerial, and money manager. In each stage the relationship between finance and the real economy differs in significant ways. Whalen (2012, p. 257) indicates that Minsky's "discussion of each stage centered on three questions: What is being financed? What is the pivotal source of financing? What is the balance of economic power between business and banking?" Minsky (1988) envisaged that the post-war era managed money capitalism emerged from the success of managerial capitalism. It involved the growth of pension funds, mutual funds such that "a large portion of the outstanding shares of major corporations is now owned by these large institutional holders". A second aspect is that managed money capitalism diminishes the financial independence of corporate management. Money managers are a large and active part of the market for securities with the trend towards an increase in the proportion of financing taking place through markets, rather than through financial intermediaries.

Van der Zwan (2014) identifies three broad approaches to financialisation in the present era: 'financialization as a regime of accumulation', 'the financialization of the modern corporation', and 'the financialization of the everyday'. A further dimension would be de-regulation and liberalization of the financial system. Other writers have viewed financialisation (or terms such as financialised capitalism) as a new era or stage of capitalism. For example, within the *Monthly Review* monopoly capitalism school, John Bellamy Foster argues that "Changes in capitalism over the last three decades have been commonly characterized using a trio of terms: neoliberalism, globalization, and financialization" with financialization viewed as the dominant element. "The financialization of capitalism—the shift in gravity of economic activity from production (and even from much of the growing service sector) to finance—is thus one of the key issues of our time." He argued that this did not mean that capitalism had entered a new stage as the basic problem of accumulation within production remained unchanged. It was rather that "financialization has resulted in a new hybrid phase of the monopoly stage

of capitalism that might be termed 'monopoly-finance capital'" (Foster 2007, p. 1).

Within the Social Structure of Accumulation (SSA) analysis, Kotz (2008, p. 2) argues that within the neoliberal SSA the changing roles and scale of finance in the economy are not best captured by the idea of the dominance of the financial sector but what he terms 'financialization' as the expanding role for finance in economic activity. He argues that "the immediate cause of the financialization process of recent decades is found in neoliberal restructuring, rather than financialization explaining the rise of neoliberalism. However, financialization also has deeper roots that are unrelated to neoliberalism" (Kotz 2008, p. 2).

Dumenil and Levy (2005) argue that all the features of capitalism which they list "point to the crucial position of finance at the centre of the new neoliberal setting" (p. 17). For these authors, "it is finance that dictates the forms and contexts in the new stage of internationalization, it is not internationalization or globalization that creates the insuperable necessity for the present evolution of capitalism. Once the leadership of finance has been identified at the root of neoliberalism and the internationalization of capital, one is very close to an interpretation of recent trends in class patterns" (p. 17).

Lapavitsas (2011) views financialization "as a systemic transformation of mature capitalist economies that comprises three fundamental elements: first, large non-financial corporations have reduced their reliance on bank loans and have acquired financial capacities; second, banks have expanded their mediating activities in financial markets as well as lending to households; third, households have become increasingly involved in the realm of finance both as debtors and as asset holders" (pp. 611–12).

These brief quotes view financialization in terms of a regime shift and new stage of capitalism. Financialization is viewed here in terms of the definition given by Epstein (2005a), and as a highly important feature of capitalism for at least the past one and half centuries. The forms which financialization (and in some periods de-financialisation) has taken have shifted over time as periodizations such as those of Minsky (1988) would indicate. Our focus here is on the processes of financialization since *c.* 1980, and to consider the particular forms and features of the growth and

evolution of the financial sector, and its relationships with the rest of the economy since *c*. 1980.

Ashman and Fine (2013) provide a brief summary of the main features of the era of financialization since *c*. 1980: "the phenomenal expansion of financial assets relative to real activity (by three times over the last 30 years); the proliferation of types of assets, from derivatives through to futures markets …; the absolute and relative expansion of speculative as opposed to or at the expense of real investment; a shift in the balance of productive to financial imperatives within the private sector whether financial or not; increasing inequality in income arising out of the weight of financial rewards; consumer-led booms based on credit; the penetration of finance into ever more areas of economic and social life such as pensions, education, health, and provision of economic and social infrastructure; …" These authors continue that the consequences of financialization have been perceived to include: "reductions in overall levels and efficacy of real investment as financial instruments and activities expand at its expense …; prioritising shareholder value, or financial worth, over other economic and social values" (p. 156).

The global reach of the processes of financialization which have occurred in almost all countries (see, for example, Bonizzi 2014). Central and Eastern European countries (former COMECON countries) were largely exempt until 1990, but strong processes of financialization are now evident there, as well as in countries such as China. Financialization has been accompanied by globalization (in terms of growth of trade, foreign direct investment and international financial markets). Within the general growth of the financial sector, there has been more rapid growth of financial markets, engaged in an expanding set of financial assets, derivatives, and securities. Further banks have generally become more engaged with financial markets, and the demarcation between banks and markets has become increasingly blurred.[2] De-regulation and financial liberalization have been vigorously promoted by the financial sector itself and enacted.

These are general features of financialization, but the growth of financial sectors has been pervasive across the world. The specific forms they

[2] See Sawyer (2014) for a critique of the bank-based vs. market-based dichotomy, and authors such as Christophers (2015), Hardie and Howarth (2013), Hardi et al. (2013) for the arguments on the fusion between banks and markets.

take vary from country to country, and the timing of these developments similarly varies. The term 'variegated financialization' can be used to signify the pervasive but differentiated forms of financialization.[3]

In this chapter the term financial sector is used in preference to finance as the financial sector involves people and interest groups with motives and actions, whereas finance is an activity. Although there is talk of financial markets and market forces they are not anonymous markets but again people and interest groups. The financial sector is involved in the allocation of finance and funds, and has and pursues its own interests. The financial sector can be considered separate from the 'real sector', and considered in terms of finance capital vs. industrial capital. The focus on the scale of the financial sector does not capture the nature of the relationships between finance capital and industrial capital.

2.3 Financialization and Economic Performance

The intention of this section is to provide an overview of the empirical work, which bears on the question of the relationship between financialisation and economic performance. This includes the growth of the financial sector and growth, the occurrence and costs of financial crisis, financial liberalization and growth, the pursuit of shareholder value and investment, and financialization and inequality.

Finance and Growth

There is a long-standing set of literature on the relationship between the size of the financial sector (often summarized in terms of 'financial development' and 'financial deepening') and the pace of economic growth.

The growth of the financial sector has often been evaluated under terms such as financial development, financial deepening, and the perceived

[3] See Brown et al. (2015) for some evidence on the spread of the financial sector and the differences across countries leading into notions of variegated financialization. See also Ferreiro and Gómez (2016).

role of financial development as a promoter of savings and investment (in terms of raising the level of savings through the provision of liquidity and financial assets, an assumed causal relationship from savings to investment, and the monitoring roles of financial institutions).

There has been a long-standing literature on the relationships between financial development and deepening and economic growth. Financial deepening, often measured by variables such as bank deposits to GDP, focuses on the growth of the formal financial sectors and also the variables used are dimensions of financialisation. That literature has generally found a positive relationship between financial development and economic growth, though the causal relationships involved are matters of debate. A more recent literature has tended to find a much weaker relationship, and often finding an inverted U-shaped relationship such that industrialized countries are often operating on the negative part of the curve.

Levine (2005), in his extensive review of the empirical literature, concluded that "a growing body of empirical analyses, including firm-level studies, industry-level studies, individual country-studies, time-series studies, panel-investigations, and broad cross-country comparisons, demonstrate a strong positive link between the functioning of the financial system and long-run economic growth. While subject to ample qualifications and countervailing views noted throughout this article, the preponderance of evidence suggests that both financial intermediaries and markets matter for growth even when controlling for potential simultaneity bias. Furthermore, microeconomic-based evidence is consistent with the view that better developed financial systems ease external financing constraints facing firms, which illuminates one mechanism through which financial development influences economic growth. Theory and empirical evidence make it difficult to conclude that the financial system merely—and automatically—responds to economic activity, or that financial development is an inconsequential addendum to the process of economic growth" (p. 921).

Arestis et al. (2015) conducted a meta-analysis of the empirical evidence on the effects of financial development on growth. They conclude that in terms of the correlations between financial development and growth the usage of market-based proxies of financial development appear to lead to lower correlations than the use of either liquid liabilities

or market-based variables. However, "the estimated coefficients of bank-based measures and complex indices are found statistically insignificant in all specifications. … Additionally, panel data, which are frequently used from the late 1990s onwards, produce smaller correlations. The same seems to hold for time series. … [H]owever, the results suggest the existence of a statistically significant and economically meaningful positive genuine effect from financial development to economic growth" (pp. 557–9).

Valickova et al. (2015), based on an examination of 67 studies on financial development and economic growth, conclude that "the studies imply a positive and statistically significant effect [of financial development on growth], but the individual estimates vary widely" (p. 506). They report that the effect appears to be weaker in less developed countries and to decrease across the globe after the 1980s. Further, they suggest that stock markets enable faster economic growth as compare with other financial institutions.

Bezemer et al. (2016) analyse data from 46 countries over the period 1990–2011, observing that financial deepening supports investments and the reallocation of factors of production between sectors. However, they find that a large credit-to-GDP ratio can be a drag on growth, with rising credit-to-GDP ratios coinciding with shifts in the composition of credit towards real estate and other asset markets and hence away from investment in productive assets. They "find that the growth coefficient of different credit stocks scaled by GDP is insignificant or negative, especially credit stocks supporting asset markets. We observe insignificant or negative correlations of credit stocks with output growth. … The positive effect of credit flows diminishes at higher levels of financial development. … Bank credit has shifted away from nonfinancial business toward asset markets, where it has no or small growth effects" (p. 667).

Authors have reported on at least some weakening of the links between financial deepening and economic growth. Rousseau and Wachtel (2011) argue that "we show that it [the finance–growth link] is not as strong in more recent data as it was in the original studies with data for the period from 1960 to 1989" (p. 276). Arcand et al. (2012) "use different empirical approaches to show that there can indeed be 'too much' finance. In particular, our results suggest that finance starts having a negative effect

on output growth when credit to the private sector reaches 100 % of GDP. We show that our results are consistent with the 'vanishing effect' of financial development and that they are not driven by output volatility, banking crises, low institutional quality, or by differences in bank regulation and supervision" (p. 1).

Cecchetti and Kharroubi (2012)[4] reached two significant conclusions. The first is that the size of the financial sector has an inverted U-shaped relationship with productivity growth and that after some point the further enlargement of the financial sector tends to reduce growth. They interpret these findings in terms of a large financial sector drawing scarce resources away from the rest of the economy and the adverse effects of financial booms and busts on growth. They conclude that "more finance is definitely not always better" (p. 14).

Beck et al. (2013) find that while in the long run financial intermediation increases growth and reduces growth volatility, both effects have become weaker over time. However, they find that "The size of the financial sector while controlling for the level of intermediation in an economy does not seem to affect long-run growth or volatility. Our analysis also shows that neither the size of the financial sector nor intermediation is associated with higher growth in the medium run" (p. 13).

Sahay et al. (2015) use a broad, measure of financial development, and find that the effect of financial development on growth is inverted U-shaped, with the effects weakening at the higher levels of financial development, coming from financial deepening rather than from greater access or higher efficiency. The weakening effect is viewed as impacting on total factor productivity rather than on the accumulation of capital. When the pace of financial development is relatively rapid then financial deepening can lead to economic and financial instability.

Cournède et al. (2015) in an OECD study note that "over the past fifty years, credit by banks and other intermediaries to households and businesses has grown three times as fast as economic activity". Based on 50 years of data for OECD countries, they conclude (p. 6) that further growth of the financial sector as far as most OECD countries are

[4] For other studies see, for example, Barajas et al. (2012, 2013), Rioja and Valev (2004, 2005), Aghion et al. (2005), Dabla-Norris and Srivisal (2013).

concerned is likely to slow down the rate of economic growth rather than raise it.

The particularly significant view to arise from the recent literature is that the previous findings of positive relationships between financial development and more generally the size of financial sector with economic growth has weakened and often turned negative. As such, these more recent findings feed into the idea that the financial sector may have become too large.

Finance and Crisis

In the present era of financialization there has been a burst of financial crises, and the occurrence of these crisis can be linked with financial liberalization and the ways in which the financial system has developed. Laeven and Valencia (2013) identify 147 banking crises, of which 13 were borderline events, over the period 1970–2011, and a further 211 currency crises and 66 sovereign debt crises. In the recent global financial crisis, the authors identify 13 systemic banking crises and 8 borderline cases in the period 2007 to 2011. Financial crises impose severe costs on the economy reducing output and employment, and are part of the general costs of financialization. Laeven and Valencia (2013; Table 4) cover the outcomes of banking crises over the period 1970 to 2011. They report the output loss as 23.2 percent of GDP for all the countries involved with advanced economies and emerging economies having losses around 33 percent while developing countries were immune to significant output losses. The fiscal costs were estimated at 1.7 percent of GDP for all countries, ranging from 8.3 percent in advanced economies to 1.3 percent and 1.1 percent in emerging and developing countries, respectively. There were substantial increases in debt averaging 12.1 percent of GDP across all countries.

Bova et al. (2016) construct a database on realizations of contingent liabilities, which documents more than 200 episodes across 80 countries for the period 1990 to 2014. Information is provided in each episode on the size and type of liability and type of fiscal response. Their analysis of the data finds that the costliest contingent liabilities are related with

the financial sector. They report (p. 1) that the fiscal costs of contingent liability realisation averages 6 percent of GDP but can go as high as 40 percent of GDP in the case of major financial sector bailouts.

Financial Liberalization and Growth

A feature of the era of financialization (and of others) has been financial liberalization and de-regulation (see Arestis 2016, for further references and discussion). At the theoretical level, McKinnon (1973) and Shaw (1973) propounded the 'financial liberalization' thesis, arguing that government restrictions on the banking system restrain the quantity and quality of investment. The financial liberalization thesis argues for the removal of interest rate ceilings, reduction of reserve requirements and abolition of directed credit programmes. In short, liberalize financial markets and let the free market determine the allocation of credit. With the real rate of interest adjusting to its equilibrium level, low-yielding investment projects would be eliminated, so that the overall efficiency of investment would be enhanced. Further, as the real rate of interest increases, saving and the total real supply of credit increase, which induce a higher volume of investment. Economic growth would, therefore, be stimulated not only through the increased investment but also due to an increase in the average productivity of capital. Moreover, the effects of lower reserve requirements reinforce the effects of higher saving on the supply of bank lending, whilst the abolition of directed credit programmes would lead to an even more efficient allocation of credit thereby stimulating further the average productivity of capital.

Bumann et al. (2012) undertook a meta-analysis based on 60 empirical studies. Their meta-regression analysis leads them to the following main results. "First, we conclude that although our results indicate that, on average, there is a positive effect of financial liberalisation on growth, the significance of this effect is only weak. Second, for most of the variables that may help explaining the heterogeneity of results about the relationship between financial liberalisation and economic growth we do not find any significant results. There are two exceptions. Our analysis suggests that data from the 1970s generate more negative financial liberalisation

coefficients which suggests that financial liberalisation policies carried out during the 1970s seem to have a stronger negative relationship with growth. Moreover, our results show that studies that take into account a measure of the level of development of the financial system report lower t-statistics for the relationship between liberalisation and growth" (pp. 43–5).

Shareholder Value, Investment and Industrial Restructuring

Financialization has been associated with the rise of the push for the maximization of shareholder value, as, for example, in the formulation of van der Zwan (2014) quoted above and reflected in Minsky's notion of money manager capitalism. Financialization often involves the growth of the financial sector's ownership and dealings in equity, and the growth of financial markets. There has been the speed-up in the trading of equity (as with other financial assets), and emphases on short-term share-price performance rather than on longer-term growth prospects. The particular significance of these developments here comes from the impact on decisions on investment, employment, output etc., as made by corporations.

The advocacy of the pursuit of 'shareholder value' is a route through which shareholder interests are imposed on managerial interests. It also acts in the interests of the financial sector who gain from increasing stock market valuations. Lazonick and O'Sullivan (2000) provide "an historical analysis of the rise of shareholder value as a principle of corporate governance in the United States" (p. 13) with a shift of corporate strategy from focus on retention of corporate profits and their reinvestment in corporate growth in the 1960s and 1970s to a strategy of distribution of profits to shareholders with pressures for reduction of labour employment.

Hein (2012) summarizes a range of arguments on the generally adverse effects of 'shareholder value' under financialization on investment. It is argued that shareholders (most of whom are financial institutions) impose on corporations a larger distribution of profits and hence a higher dividend payment ratio. The lower retention of profits ratio,

and on occasions share buybacks, mean reduced internal finance for real investment. Hein labels this the "internal means of finance channel" A further channel, labelled "preference channel", arises from the weakening of the preference of managers for growth (which translates into firms pursuing growth) as managerial remuneration schemes are based on short-term profitability and share price.

Hein (2012) views the overall effect of financialisation on investment (and thereby on growth of capital stock) to be negative. "Financialisation has been associated with increasing shareholder power vis-à-vis management and labourers, an increasing rate of return on equity and bonds held by rentiers, and decreasing managements' animal spirits with respect to real investment, which each have partially negative effects on firms' real investment" (p. 116).

The often-observed rises in profit rates and shares in industrialized countries over the past three or more decades can be compared with a tendency for investment to slow. As van Treeck (2009) observes, a popular microeconomic explanation of that association is the pursuit of shareholder value "has induced firms to develop a larger preference for profitability at the expense of investment (and potentially jobs and growth)" (p. 908).

A similar view comes from Dallery (2009), who argues that financialization and shareholder power imposes constraints on managers which entail a relatively small drop in investment and accumulation. Financialization places pressures on wages and labour intensity and it can increase real fragility, and the overall outcome can be no detriment to accumulation. In those cases where shareholders in effective manage the firm there is a finding of a much greater decrease in accumulation though the extent of the reduction depends on assumptions on the objectives of shareholders and their time horizons.

Inequality and Poverty

The relationships between financialization and inequality and poverty are not straightforward, and since financial development and growth can take many forms and working through a variety of institutional arrangements

the relationships will vary over time and space. It is easy to point to features of the financial system and institutions, which are intended to aid the poor—microfinance institutions, credit unions being notable examples. At the other end of the spectrum private equity companies operate to make high returns for the already rich.

Kim and Lin (2011) argue that in the main theoretical studies on the relationship between income inequality and financial development have argued that financial deepening can be an instrument for the improvement of income distribution. They find, however, that the stage of financial development of a country strongly impacts on that prediction. Overall, their "policy implication is that a minimum level of financial development is a necessary precondition for achieving reduction in income inequality through financial development" (Kim and Lin 2011, Abstract).

Beck et al. (2007) have found "that financial development disproportionately helps the poor. Greater financial development induces the incomes of the poor to grow faster than average per capita GDP growth, which lowers income inequality" (p. 46). However, whilst their results suggest that financial development is beneficially to the poor, their research does not cast light on how to foster financial development which is poverty reducing.

Demirguc-Kunt and Levine (2009) argue that "theory provides sound reasons for believing that the poor disproportionately benefit from financial development. … Financial development that operates on the extensive margin facilitates entrepreneurship by people with promising ideas, but little collateral and income. This both reduces inequality of opportunity and enhances aggregate efficiency" (p. 45). However, they argue that there are theoretical arguments pointing in the other direction, as growth of the financial sector can involve greater provision of financial services to rich individuals and well-established firms. On balance these authors conclude that "the results of cross-country, firm-level, and industry-level studies, policy experiments, as well as general equilibrium model estimations all suggest that there is a strong beneficial effect of financial development on the poor and that poor households and smaller firms benefit more from this development compared with rich individuals and larger firms. Empirical research suggests that an improvement in

financial development expands economic opportunities, particularly for those whose opportunities had previously been tightly curtailed" (p. 47).

Jauch and Watzka (2011) investigate the impact of financial development on the distribution of income in African countries, and find, contrary to previous findings a positive relationship between financial development and income inequality within countries. "Better-developed financial markets lead to higher gross income inequality. … The positive relationship is highly significant but is only of a small magnitude." (p. 27).

For the USA Onaran et al. (2011) find that income has been redistributed towards rentier income and non-rentier profits and away from wages which reduces consumer expenditure, though a secondary redistribution of profits in favour of rentier income has a positive effect on consumer expenditure. They do find that "higher rentier income suppresses investment through both lower investable funds available to the firm and shareholder value orientation, and an increase in non-rentier profits has a positive effect on investment." (p. 637).

A more direct linkage with financialization comes from Lin and Tomaskovic-Devey (2013) who find that increasing dependence on financial income is associated with a reduced share of income going to labour, and higher dispersion of workers' earnings and higher share of compensation accruing to top executives. They find that after allowing for explanations such as "deunionization, globalization, technological change, and capital investment, the effects of financialisation on all three dimensions of income inequality are substantial. Our counterfactual analysis suggests that financialisation could account for more than half of the decline in labor's share of income, 9.6 % of the growth in officers' share of compensation, and 10.2 % of the growth in earnings dispersion between 1970 and 2008" (Lin and Tomaskovic-Devey 2013, p. 1284).

Das and Mohapatra (2003) present evidence of a strong statistical association between the financial liberalization and income shares. They find that the data support that financial liberalization is positively related with the highest income quintile's share of income and a negative relationship between liberalization and the income share of the middle class, and no association between liberalization and the lowest income quintile. They do though find that the general level of income in a country rises after financial liberalization.

Mis-selling and Market Fixing

The press and media have carried plenty of stories of the mis-selling by the financial sector and of exploitation of market power and price fixing, and, by implication, the detriment of the non-financial sector. Mis-selling and exploitation of market power is, of course, not unique to the financial sector though it may be much more prevalent there. The possibilities for mis-selling may be greater through, for example, the complexity of products being offered, the extent of 'small print', and a lack of financial awareness by the public. Many financial products relate to future gains, and the future is fundamentally uncertain. The possibilities of selling financial products promising high gains, often based on Ponzi-style finance and exploiting leverage, are manifest. We report on some of the examples of mis-selling by the financial sector in recent years, and these provide some further evidence on the costs imposed by the financial sector on the rest of society.

The title of Dzimwasha (2015) paper suggests that the 20 largest global banks paid $235billion in fines for a range of mis-selling in the seven years following the 2008 financial crisis. The main offenders were Bank of America, which faced by far the largest levy of around $80 billion since 2008, and J.P. Morgan, paying up to $20 billion. The banks were fined $141 billion for mis-selling US mortgages and $44 billion in compensation to UK customers. Zingales (2015) reports that fines paid by financial institutions to US regulatory agencies amounted to $138.59 billion over the period 2010–2014. Fines imposed in the UK by the Financial Services Authority and its successor, the Financial Conduct Authority, amounted to just under £3.5 billion during the years 2009 to 2015.[5] HSBC (2016) reports that it "is party to legal proceedings and regulatory matters in a number of jurisdictions arising out of its normal business operations", and lists a wide range of such proceedings.

Robert Jenkins provides a listing the 'misdeeds' of banks at http://www.finance-watch.org/hot-topics/blog/1186-jenkins-bank-misdeeds. He gives over 50 proven cases and 25 currently under investigation.

[5] Calculated from http://www.fsa.gov.uk/about/press/facts/fines and http://www.fca.org.uk/firms/being-regulated/enforcement/fines/2015-fines.

These range from mis-selling (e.g., of payment protection insurance and interest rate swaps), manipulation of markets (e.g., precious metals markets, US Treasury Market auction/client sales, energy markets), aiding and abetting tax evasion and money laundering for violent drug cartels, collusion with Greek authorities to mislead EU policy makers on meeting Euro criteria, etc.

The mis-deeds and mis-sellings by the financial sector impose significant costs on the rest of the economy, and the illustrations given above are, of course, only those which have been caught. Mis-selling is likely to shift profits towards the financial sector, in so far as it is not caught and invoke imposition of penalties.

2.4 Towards De-financialization

The Need for De-financialization

The arguments presented above can be summarized in terms of the nature of financialization over the past few decades, that many of the aspects of financialization have been detrimental to economic performance in terms of tending to slow economic growth and investment; thereby becoming more prone to financial crises and the associated losses of recession, and devoting resources, often highly trained labour, to trading activities in securities etc., which bring little economic benefits. In this section the focus is on ways in which the financial sector can be restructured and downsized to be more conducive to serving economic, social and environment needs.

The idea that the financial sector is in some sense too large and does not focus on its key roles is not a new one, though it is one that has frequently been dismissed by economists and politicians (not to mention by the financial sector itself). Over three decades ago, in his Fred Hirsch lecture, Tobin (1984) voiced sceptical views of the efficiency of our vast system of financial markets and institutions, which as he noted "run against current tides—not only the general enthusiasm for deregulation and unfettered competition but my profession's intellectual admiration for the efficiency of financial markets" (p. 2). Tobin considered efficiency

under four heads: information-arbitrage, fundamental-valuation, full-insurance and functional. He argued that securities markets do very little to enable the translation of household saving into the funding of investment. Only a small part of the large volume of transactions of securities and equity markets is involved with the financing of real investment. He remarked that "in many respects … the system serves us as individuals and as a society very well indeed" but he doubted the value of "throwing more and more of our resources, including the cream of our youth, into financial activities remote from the production of goods and services, into activities that generate high private rewards disproportionate to the social productivity" (p. 14).

Stiglitz (1994) argued "that much of the rationale for liberalizing financial markets is based neither on a sound economic understanding of how these markets work nor on the potential scope for government intervention. Often, too, it lacks an understanding of the historical events and political forces that have led governments to assume their present role. Instead, it is based on an ideological commitment to an idealized conception of markets that is grounded neither in fact nor in economic theory" (p. 22). He argued that financial innovations often contribute little to the achievement of economic efficiency, and may well be welfare-decreasing. He gave as an example technology which permitted faster transactions may do little for economic efficiency but absorbs resources which could have been used elsewhere. Overall he postulates that "Improvements in secondary markets do not necessarily enhance the ability of the economy either to mobilize savings or to allocate capital" (p. 22).

Zingales (2015) poses the question in the title of his paper which formed the basis of presidential address to the American Finance Association of 'does finance benefit society', and then comments that for an academic economist the answer would appear to be obvious". But he argues that there is a need to "acknowledge that our view of the benefits of finance is inflated. While there is no doubt that a developed economy needs a sophisticated financial sector, at the current state of knowledge there is no theoretical reason or empirical evidence to support the notion that all the growth of the financial sector in the last forty years has been beneficial to society" (p. 3). He continues by arguing that there is both theory and empirical evidence that a component of that growth has been pure rent

seeking, and that a task of academics is to use research and teaching to reduce the rent-seeking dimension of finance.

Kashkari (2016), President and CEO of the Federal Reserve Bank of Minneapolis, argues that although too big to fail banks "were not the sole cause of the recent financial crisis and Great Recession, there is no question that their presence at the center of our financial system contributed significantly to the magnitude of the crisis and to the extensive damage it inflicted across the economy." (p. 5). He then argues that the problem of too big to fail has to be solved in light of the scale of job losses, home foreclosures and fiscal costs. He argues that there is a range of options which need to be seriously considered. These include the break-up of large banks into smaller less connected entities, the "turning of large banks into public utilities by forcing them to hold so much capital that they virtually can't fail (with regulation akin to that of a nuclear power plant)" (p. 5), and the taxation of "leverage throughout the financial system to reduce systemic risks wherever they lie" (p. 5).

The evidence cited above pointed in the direction that the further growth of the financial sector would likely constrain rather than enhance growth. As Black (2010) pointed out in the context of the USA, "forty years ago, our real economy grew better with a financial sector that received one-twentieth as large a percentage of total profits (2 %) than does the current financial sector (40 %)". Those I have just cited above could be viewed as suggesting in various ways that the financial sector has become too large in terms of its use of resources relative to the economic and social benefits provided by the financial sector. Financial instability and the associated costs of financial crisis have resulted from financialization and financial liberalization. As the financial sector has shifted towards the generation of, and then high-volume trading, in derivatives, securitization, etc., it has shifted away from the facilitation of savings and the financing of investment. It is then perhaps not surprising that the growth of the financial sector (relative to GDP) is not linked with economic growth as the growth of the capital stock is no longer being facilitated by the operations of the financial sector. The ways in which the financial sector has changed over the past four decades can be contrasted with what are often said to be the key functions of the financial system. Minsky (1993), for example, identified six functions of a banking

and financial system: "operating the payments mechanism, including the mechanism for making payments at a distance.

- Providing safe and secure outlets for transaction balances and household savings.
- Financing housing and providing consumer credit.
- Providing commercial banking services such as loans and sundry services to business.
- Providing investment banking services, including determining feasible liability structures for firms and acting as an intermediary in the placement of the part of the liability structure that is not bankable.
- Providing trust services as well as portfolio advice and asset management for households" (p. 34).

The thrust of the approach here is to develop the roles of a range of alternative financial institutions whose focus is more on those roles than on the development of, and then extensive trading in, financial assets. It also has to be remembered that the financial institutions are the channels through which funds flow from surplus units to deficit units, and the direction in which the funds are channelled is heavily dependent on the credit allocation decisions made by the financial institutions. In the next subsection I offer some remarks on credit allocation by financial institutions on the grounds that different types of financial institutions will make different credit allocation decisions, and the suitability of a diversity of financial institutions The thrust of the approach here is to develop the roles of a range of alternative financial institutions whose focus is more on those roles than on the development of and then extensive trading in financial assets. It also has to be remembered that the financial institutions are the channels through which funds flow from surplus units to deficit units, and the direction in which the funds are channelled is heavily dependent on the credit allocation decisions made by the financial institutions. In the next subsection some remarks are offered on credit allocation by financial institutions on the grounds that different types of financial institutions will make different credit allocation decisions, and the suitability of a diversity of financial institutions arises from the diversity of decision making. In this respect, the line of

argument advanced by Groeneveld 2015) is followed when he writes that "diversity in ownership and business orientation leads to diversity in risk appetite, management, incentive structures, policies and practices as well as behaviours and outcomes. It offers greater choice for customers and society through enhanced competition that derives in part from the juxtaposition of different business models" (p. 6).

Credit, Loans and Financial Institutions

Financial institutions provide credit, funds and finance to non-financial institutions and households. The relationships between financial institutions and non-financial institutions may be viewed in terms of market relationships in a perfectly competitive market where there is trade under conditions of anonymity and tendency to uniformity of price. But, as Stiglitz and Greenwald (2003, p. 26) amongst others argue, interest rates cannot be parametric prices, the interest rate set varies with credit risk assessment rating of potential borrowers and amount to be borrowed, and the markets for capital, loans and credit cannot be treated like an auction market. The nature of the relationships between financial institutions and customers becomes highly relevant for the ways in which finance and credit are provided, on what terms and to whom, and the monitoring and other efforts of financial institutions to ensure the repayment of loans. It is then in the nature of credit that there will be what may be termed credit rating and pricing of credit which reflects assessment of likelihood of default (partial or total). Informational problems give rise to equity rationing as well as to credit rationing, and firms will be limited in their ability to raise equity capital. And it is often observed that a rather small proportion of new funds are raising through issue of new equity (Stiglitz and Greenwald, op. cit., p. 34), and indeed through share buy-backs and mergers the contribution of equity markets to additional funding can be negative.

The financial sector operates in the provision of funds to industry to favour some types of firms over others. It is a frequently expressed argument that there is, in some sense, a lack of funding for small and medium-sized enterprises. In a similar vein, research and development

activities may not secure sufficient funding from external sources. A major and obvious difficulty here is the finding of the appropriate benchmark against which to judge whether there is the right level of funding for, say, small and medium-sized enterprises and at the 'right price'. In a world of risk where the probability of default by a given category of borrowers is well established, it would be rather straightforward to assess whether banks were using the correct information, though asymmetric and moral hazard problems would blur the picture. In a world of fundamental uncertainty there is no firmly established benchmark of the likelihood of default by a borrower. The likelihood of default has to be assessed by the borrower without a clear benchmark of what that likelihood is.

The credit allocation processes depend on risk assessments which in an uncertain world can only be perceptions of frequency of default, etc., rather than based on well-established probability distributions. There have been many large literatures on how banks and other financial institutions approach lending to different social, ethnic groups and gender and in effect discriminate against some and practice financial exclusion. There are other literatures on lending to SMEs (small and medium-sized enterprises), lending for innovation, research etc., which have tended to express concerns over the lack of finance for those type of firms and activities.

The pervasiveness of credit rationing extends across all types of financial systems. Financial systems and subsystems will differ in how credit rationing is dealt with, how it impacts on who receives credit and at what price. Two broad comments may be made. The first is that financial systems develop what appear to be discriminatory practices through favouring some groups over others in their credit rating assessments. The discrimination can be along ethnic lines, gender, area of residence etc.

The second is that relational banking and similar arrangements develop to aid credit assessment and to ease monitoring issues. Causal observation suggests that the nature of the relationship, e.g. short-term vs. long-term, spot market vs. contractual, between banks and (potential) borrowers differ substantially between countries. The ways in which the monitoring and assessment issues are addressed clearly differ substantially between financial systems.

Alternative Institutional Structures

Two major aspects stand out in thinking about the role of different types of financial institutions. The first is whether these institutions are focused on what should be the key roles of the financial sector, namely providing vehicles for savings and funding investment (as well as providing a payments system), and the effectiveness of their operations. The second is the ways in which loans are allocated, to whom and under what conditions. This second aspect is particularly important as different forms of financial institutions will take different allocation of funds decisions.

Financial banking institutions cover a range of different forms—clearing or commercial banks, savings banks, investment banks and universal banks. Banks differ substantially in terms of their ownership structures—private, public (State), mutual and co-operative. Depending on ownership and management structures, the objectives which could be said to be pursued by banks differ. The objectives of privately owned banks would generally be that of profits—though a range of objectives may be stated (providing employment, for example), and the effective decision-makers in a bank may pursue other objectives such as growth and size (as postulated in the managerial theories of the firm). The objectives of public and mutual ownership are often more difficult to state (at least on any universal principles) but would often include the provision of finance for stated aims—e.g., to support industrial development, to provide housing finance, to facilitate savings and provide housing finance etc. As the question arises for privately owned banks and whether their managers will seek to maximize profits, so the question arises for public and mutual organizations as to whether their managers will maintain the objectives which are set for them, or whether their interests will lie elsewhere.

Ayadi et al. (2010) and others have drawn the distinction between *Stakeholder Value* (STV) banks and *Shareholder Value* (SHV) banks. They "conceptualise SHV banks as those whose primary (and almost exclusive) business focus is maximizing shareholder interests, while STV banks in general (and cooperative banks in particular) have a broader focus on the interests of a wider group of stakeholders (notably customer-members in the case of cooperative banks, the regional economy and the society in the case of savings and public banks)" (p. 7). Another way of expressing a

similar idea is to draw on the notion of 'double bottom lines'—that is for financial institutions (in this context but can be extended to others) there is the bottom line of profits—at least the requirement to earn sufficient profits to survive and grow, and the second bottom line of other objectives which can include serving the local community, providing finance for specific groups etc. There are important differences between shareholder value institutions and stakeholder institutions. Two mentioned by Ayadi et al. (2010, p. 9) are the potential intermediation margin and how value added is distributed between the stakeholders.

Block (2014) views a good way forward is the introduction of "significant competition from financial intermediaries who are not seeking to generate profits. These could take the form of credit unions, community banks, nonprofit loan funds, or banks that are owned by government entities; but the key is that their mission is defined as facilitating economic development in a particular geographical area. With this mission, they have a reason to employ loan officers who develop the skill set needed to provide credit to individuals and firms who fall outside the parameters of the standard lending algorithms" (p. 16). He advocates a "a combination of governmental supports and grassroots entrepreneurialism to create an expanding network of non-profit financial institutions that would redirect household savings to finance clean energy, growth of small and medium-sized enterprises, and infrastructure" (p. 3). This would be an illustration of the general idea that local and mutual financial organization would make different lending decisions as compared with the large profit making financial institutions.

Mutual and Cooperative Local Financial Institutions

A major form of stakeholder value institutions is mutual and cooperative banking. Groeneveld (2015) advocates such retail banking as one which "demonstrably results in a moderate risk profile and close links with the real economy and local communities" (p. 6). In a similar vein, the argument is put that "empirical evidence in this study suggests that no radical differences exist between cooperative banks and their peers in terms of performance and efficiency. More important, there are economic, sys-

temic and welfare benefits to be derived from a successful cooperative sector in the banking systems in Europe. A financial system populated by a diversity of ownership and governance structures, and alternative business models, is likely to be more competitive, systemically less risky and conducive to more regional growth than one populated by a single model" (Ayadi et al. 2010, p. vi).

Ayadi et al. (2010) argue that there are many reasons why cooperative banks have less incentive to take excessive risks. These include that while they have to break even they do not have to strive for maximization of profits which can induce highly risky behaviour. They are able to adopt a longer-term horizon in their decision-making and lending practices and be under less short-termist pressures. These authors stress the strong local presence of cooperative banks "which allows them to have a better understanding of the needs and the risk profiles of their customers and ultimately to mitigate acute asymmetric information". Their empirical results "highlight that despite slightly lower profitability, the cooperative bank model is not consistently different than other banks in terms of efficiency and market power. … In addition to providing cases where cooperative banks are comparable (if not better) than their peers, our finding also highlight the role of diversity in contributing to broader financial stability" (p. 16).

Regional Banking

The development of more localized banking can come from regional banking. Klagge and Martin (2005) put a case for regional banking in terms of three advantages. "First, the presence of a local critical mass of financial institutions and agents—that is of a regionally identifiable, coherent and functioning market—enables local institutions, SMEs, and local investors to exploit the benefits of being in close spatial proximity. … Second, the existence of regional capital markets specialising in local firms may help to keep capital within the regions, as local investors direct their funds into local companies—and hence into local economic development—rather than investing on the central market. … Third, in a nationally integrated financial system, the case can be made for a

regionally decentralized structure on the grounds that it increases the efficiency of allocation of investment between the centre and the regions" (p. 414). However, they acknowledged limitations. Regional financial institutions may largely raise their funds locally as well as providing funds and credit to local firms, and their ability to raise funds dependent on the economic prosperity and development of the region.

Minsky (1993) advocated the establishment and support for Community Development Banks (CDBs), which had characteristics of providing 'narrow banking'. The characteristics of CDBs would be to operate of payments system, to provide a secure depository for savings, to provide commercial banking services, to fund housing and consumer debt, and to provide investment banking services and asset management services and advice.

The local aspects are stressed by Sikka (2014) when he writes that "banks should be part of local communities. They should not be permitted to up sticks and leave local communities in the lurch. Maintaining a socially desirable network of branches should be a necessary quid pro quo for a deposit-taking licence and the state's deposit protection guarantee. Each branch closure must be sanctioned by the regulator, and banks must be required to demonstrate that after closure, the local community's access to banking services will not suffer" (p. 24).

Microfinance Institutions

Our analysis shows that the diversity of institutional forms is important to foster market dimension, guarantee a good cover of the several vulnerable groups and a diversified offer of other services" (pp. 45–6). The objectives for microfinance institutions are often portrayed in terms of the 'double bottom line'—that is both profitability (or at least break even) and social objectives such as aiding poverty reduction, promoting social inclusion particularly of women. The pursuit of the social inclusion objective is intended to come from the provision of credit to those previously excluded from credit which enables them to establish a business (even if a one-person business). Robinson (2001, p. xxx) viewed microfinance in terms of "the large-scale provision of small loans and

deposit services to low-income people by secure, conveniently located, competing commercial financial institutions [which] has generated the processes needed to democratize capital. … Appropriately designed financial products and services enable many poor people to expand and diversify their economic activities, increase their incomes, and improve their self-confidence. Financial institutions knowledgeable about microfinance can become profitable and self-sustaining while achieving wide client outreach" (Robinson 2001, p. xxx). As Lagoa and Suleman (2014, pp. 45–6) indicate, microfinance institutions have been something of a niche of the financial system, and that there is a diversity of institutions which serve as microfinance institutions. Microfinance institutions "have a leading role in terms of loans disbursed, in reaching to non-bankable clients and specific vulnerable groups, in the offer of other services, in large organisational dimension, and good recovery rate. Others have been more sceptical of microcredit arguing that the original concept of the provision of credit "to establish or expand income-generating projects—was transmuting into the much wider concept of microfinance, meaning the supply of a whole range of financial services to the poor, including microcredit, micro-insurance, micro-savings, and so on" (Bateman and Chang 2014).

Many would argue that MFIs suffered from 'mission creep' and became more focused on profit than on poverty relief. Microfinance institutions have suffered from financialisation in being sucked into operating as profit-seeking financial institutions, and from the financing of consumer debt rather than the provision of investment. The 'development model' which lay behind microfinance could be seen as groups (whether because poor, on the grounds of gender, etc.) could not otherwise secure credit, and this acts as a constraint on their economic activities. The reasons why they could not otherwise secure credit would include transactions costs for small loans, discrimination, etc. Providing those groups with credit would then enable investment to be undertaken. But there is the need for support (education, management skills, infrastructure) and the need for demand for what they produce. Further, MFI represents the allocation of existing funds which detract from their use elsewhere: it may of course be socially preferred.

State Development and Investment Banks

State development and investment banks have often been viewed in terms of their role in economic development through their abilities to channel funds into industrialization. There are now a range of state development and investment banks around the world; some notable examples are the German KfW, Brazilian development bank, and recent proposals such as the BRICs Development Bank (Griffith-Jones 2014), and the European Investment Bank (EIB); and recently established but relatively small-scale ones such as the UK Green Investment Bank. United Nations Department of Economic and Social Affairs (2005) provides a history of national development banks. The report also illustrates the different institutional forms which development banks can take and different objectives which have been assigned to development banks.

Povel and Heidebrecht (2015) point to a wide range of financial instruments, which development banks (DBs) have at their disposal. They argue that "by adjusting the financing terms to the particular need, DBs optimize promotional efficiency (i.e. reach the promotional purpose with minimal public funds) and distributional justice (i.e. poorer recipients get higher concessional funding)". As they indicate, development banks can be condemned as instruments of state intervention which are prone to political capture and mission creep. It is important, however, that state development banks operate in ways which do not merely replicate private banks, and that their decisions over allocation of loans and funding are linked with the political objectives of the government.

Griffith-Jones (2015) argues that "Well run development banks can provide the vision- and part of the resources, to do those things that at present are not done at all. This requires good development banks with the expertise and the strategic vision to fund new sectors and technologies. The fact that development banks can provide long-term loans, have a long-term development perspective, as well as require lower returns further facilitates this financing." She postulates four functions which it is important for development banks to play. These are the provision of counter-cyclical finance, "funding a dynamic vision and strategy of growth and structural transformation", the mobilization of financial

resources and the funding of public goods. Development banks, as with the other types of financial institutions which have been reviewed in this section, provide benefits of diversity with a more diversified financial system leading to less systemic risk, and different types of financial institutions having different strengths (and weaknesses).

Ethical Banking

A range of banks and financial institutions are seeking to operate on different bases to that of solely profit maximization. One example is those linked with the Global Alliance for Banking on Values (GABV) which "is a foundation with an established charter, made up of the world's leading sustainable banks, from Asia, Africa, Australia, Latin America to North America and Europe. Members include microfinance banks in emerging markets, credit unions, community banks and sustainable banks financing social, environmental and cultural enterprise" (http://www.gabv.org/). Another sector of growing significance would be that of Islamic banks and finance, which confines its financial activities to those which are Sharia compliant with respect to the payment of financial rewards (notably the prohibition on interest), the financial products which can be offered and the activities of businesses such as the production of alcohol, pornography or weapons.

Financial institutions operating along these lines at least offer the potential that savers can express their social values through the provision of funds to such institutions. They also offer possibilities for the channeling of funds in specific directions in line with the social objectives of the institution. The specific issues which arise are (as with microfinance) whether such institutions suffer from 'mission creep', and whether the pressures push them towards profits. Much may then depend on whether the activities into which these alternative financial institutions put funds are ones which yield an acceptable rate of profit—and hence that while the social returns to such investments may be high, are the private returns similarly so. But, if the private returns are indeed relatively high, then profit-seeking financial institutions would themselves be willing to lend. Thus it can be argued that alternative financial insti-

tutions would, in effect, require subsidies which can come in the form of direct government subsidy or through savers willingness to accept a lower rate of interest.

Credit Allocation Policies

There may be arguments for a more direct intervention by government to guide the allocation of credit in specific directions which are those which help to meet social and development objectives. We mention here two possible avenues to explore.

The first is the provision of guidance (by government) for the lending practices of banks: that is, requirements that a specified proportion of their lending are to those sectors identified for development and growth. This could, for example, focus on the funding of green and environmentally friendly investment. This could draw on the US experience of the Community Reinvestment Act (CRA), introduced in 1977 and revised in 1995, whereby banks and other financial institutions are legally required to direct a portion of funds to lending to the local community. "The Community Reinvestment Act is intended to encourage depository institutions to help meet the credit needs of the communities in which they operate, including low- and moderate-income neighborhoods, consistent with safe and sound operations. The CRA requires that each depository institution's record in helping meet the credit needs of its entire community be evaluated by the appropriate Federal financial supervisory agency periodically. Members of the public may submit comments on a bank's performance. Comments will be taken into consideration during the next CRA examination. A bank's CRA performance record is taken into account in considering an institution's application for deposit facilities".[6]

There are possibilities for influencing decisions made by financial institutions on the allocation of funds. Reserve ratio requirements of various types are already in place. In the context of macroeconomic policy there has been advocacy of variable reserve requirements, for example, on mortgages during house price booms. More generally, the idea of asset-

[6] http://www.federalreserve.gov/communitydev/cra_about.htm; accessed March 2014.

based reserve requirements (e.g., Palley 2004). Reserve ratio requirements are generally related to the risk assessment of the assets concerned. This idea could be readily extended to relate the reserve ratio requirements to the nature of the assets concerned and the purpose for which the funds have been provided. Campiglio (2016), for example, has proposed green reserve requirements. This is not to underestimate the difficulties of specifying and monitoring which asset classes would be eligible for lower reserve requirements. And some (such as 'green investment') would face fewer difficulties than others (e.g. specifying whether the loan had been used for 'good quality' jobs). In a world of fundamental uncertainty, the assessment of risk is not unproblematic and the difficulties of making the assessments of the nature of assets and which reserve requirements apply confront similar issues. The purpose of varying reserve requirements in the manner indicated here is a part of the general idea of finding ways of influencing the allocation of funds and loans in socially efficient directions, rather than by the profits assessments of financial institutions.

2.5 Downsizing the Financial Sector

The argument advanced above was to the effect that the financial sector had, in some significant senses, become 'too large', and in particular the ways in which the financial sector had expanded in recent decades has been through the growth of financial markets and the extent of trading in existing financial assets. It can further be argued that the financial sector is often undertaxed relative to non-financial sectors. The possible use of taxes to influence the size and nature of the financial sector is now considered.

Financial Transactions Taxes

The case for financial transactions taxes considered here comes from the discouragement of transactions in financial assets.[7] Keynes (1936) advocated what would now be termed a financial transactions tax which

[7] See, for example, Arestis and Sawyer (2013) for recent discussion on financial transactions taxes, and the references cited there.

"might prove the most serviceable reform available, with a view to mitigating the predominance of speculation over enterprise in the United States" (p. 102). Keynes (op. cit.) saw the changing balance between what he termed enterprise and speculation as disadvantageous. "When the capital development of a country becomes a by-product of the activities of a casino, the job is likely to be ill-done. The measure of success attained by Wall Street, regarded as an institution of which the proper social purpose is to direct new investment into the most profitable channels in terms of future yield, cannot be claimed as one of the outstanding triumphs of laissez-faire capitalism—which is not surprising, if I am right in thinking that the best brains of Wall Street have been in fact directed towards a different object" (p. 101).

Financial transactions taxes (FTTs) are often advocated for their tax revenue possibilities. The considerations here are more that FTTs would reduce the volume of such transactions viewed as excessive with possible effects on market volatility and absorbing resources.

The underlying rationale for financial activity taxes (FAT) can be viewed in terms of the relative undertaxation of the financial sector in that indirect taxes such as value added tax are often not applied to the financial sector.[8] There are, of course, examples of where forms of indirect taxation (other than financial transactions tax) are applied to parts of the financial sector. This can be complemented by the use of FAT to seek to reduce the size of the financial sector. The argument can be put that levying taxes on a sector will have effects on the demands for the goods and services of that sector. The tendency to undertax the financial sector would imply that other sectors are relatively overtaxed and those sectors perhaps relatively smaller than they would have been, and the financial sector relatively larger.

"a FAT would effectively be a tax on value added and so would partially *offset the risk of the financial sector becoming unduly large because of its favorable treatment under existing* ***VATs.*** For technical reasons, financial services are commonly VAT-exempt—which means that, purely for tax reasons, the financial sector may be under-taxed and hence perhaps 'too

[8] See Sawyer (2015) for further discussion on financial activity taxes.

big'… Taxing value-added in the financial sector directly would mitigate this" (emphasis in original, IMF 2010, p. 22).

"The EU's common value added tax system has generally exempted mainstream financial services including insurances and investment funds. Article 135(1) of the VAT Directive provides an exemption from VAT for most financial and insurance services". There is an option for member states to tax financial services. "The difficulty is, however, to technically define the price for specific financial operations. Around two-thirds of all financial services are margin based which makes the implementation of the invoice-credit VAT system very difficult in this respect. In practice however this difficulty seems to be surmountable—for instance in Germany when the granting of loans is subject to VAT under the option to tax, an acceptable methodology seems to have been found to tax these margin-based operations" (EC 2011, p. 13). Insurance premia can also be subject to being taxed (as in the UK). EC (op. cit.) presents estimates of the potential tax advantage of the VAT exemption of the financial sector and put it at the order of 0.15 percent to 0.20 percent of GDP. "In summary, the VAT exemption for a large share of financial services is an important issue. It possibly results in a preferential treatment of the financial sector compared with other sectors of the economy as well as in distortions of prices" (p. 15). Buettner and Erbe (2014) find that a 4 percent FAT in Germany would generate similar revenues and welfare effects as the repeal of VAT exemption (at a rate of 19 percent) for the financial sector.

A FAT is essentially a tax on the sum of profits and remunerations of the financial sector, and, as such, has features of being close to a variant for a value added tax on the sector since sum of profits and remunerations is a good proxy for value-added. Cannas et al. (2014) then note that a FAT "present little distortions to the extent that it can be designed to mostly tax the rents of the sector" (p. 4). The European Commission (2011) considered three variants of a FAT—(i) profits of financial institutions in cash-flow terms plus remuneration paid by the sector; (ii) as (i) with remuneration replaced by notion of 'excessive remuneration', (iii) sum of cash flow profits above a specified return on capital and 'excessive' remuneration.

> "A FAT could also in theory reduce the size of financial institutions to the extent that the tax is passed through into higher prices for financial services and that the demand for these services is sufficiently elastic. The pass-through into high prices is more likely under the broader design of the FAT because for the same rate the tax would be higher but also because smaller designs of the FAT would increasingly target the economic rent and not the normal profit. A FAT would however normally have little effect on leverage" (Cannas et al. 2014, p. 19).

The proposals for financial activity taxes have received rather little attention in recent years, particularly relative to those for a financial transactions tax. Those two types of tax are not mutually exclusive as the FTT relates to transactions in specific financial assets (depending on the proposals), whereas the FAT relates to the value added of financial institutions. They are both revenue raising and would tend to reduce the size of the financial sector.

A FAT would help remove the relative undertaxing of the financial sector through its general exemption from VAT (and the counterpart the relative overtaxing of the real sector). From that perspective, it can clearly be argued that there are distortions in the tax system which favour the financial sector over the non-financial sector, and this line of argument would also point to the financial sector being 'too large' (and the non-financial-sector 'too small').

There could be elements within a FAT, depending on its precise design, of an 'excessive profits' tax. The IMF (2010) argued that "with inclusion of profits only above some high threshold rate of return, the FAT would become a tax on 'excess' returns in the financial sector. As such it would *mitigate excessive risk-taking* that can arise from the undervaluation by private sector decision-makers of losses in bad outcomes (because they are expected to be borne by others), since it would reduce the after-tax returns" (p. 22). It is undoubtedly the case[9] that there has been, at least up until the financial crisis, a boom in the profits of the financial sector and a shift of profits from the non-financial sector to the financial sector. In that regard, however, it should be observed that what

[9] See, for example, Brown et al. (2015).

are deemed non-financial corporations often make a substantial portion of their profits from financial activities. The questions which would arise in this context are, first, whether the financial sector should be singled out in this manner for its 'excessive returns' to be taxed, and not the 'excessive returns' in other sectors. In a similar vein, it could be asked whether excessive risk-taking has particularly severe consequences in and for the financial sector. A further question would be how well targeted would the mitigation of excessive risk-taking be, and whether this form of the FAT would be a valid instrument (particularly as compared with forms of regulation and codes of conduct for the determination of variable pay and bonuses).

2.6 Some Concluding Thoughts

This chapter has sought to consider the broad effects of financialization on the real economy and economic performance. It has indicated something of the nature of the growth of the financial sector in most countries and also globally. The arguments above have been to the effect that the financial sector has in various ways become too large, and that measures should be taken to reduce the size of the financial sector and to restructure the sector, making it both more diverse and more socially responsible. The growing resources devoted to financial services have harmed, rather than aided, economic growth. One of the key purposes of de-financialization is to reduce the size of the financial sector and seek to re-establish the main roles of the financial sector and specifically its role as a collector and allocator of funds. De-financialization could combine the use of taxation (notably financial transaction and financial activities taxes) to reduce the scale of the financial sector and the promotion of alternative forms of financial institutions based of public and mutual ownership and organized on a relatively small scale. Each of these forms of financial institutions can have their benefits as well as their costs, and the appropriateness of the different forms will depend on a country's past and current experiences. There are advantages to be gained from diversity and the ways in which different forms of financial institution make decisions on the allocation of funds differ.

In sketching such proposals it is well recognized that their adoption (or anything along similar lines) and implementation face some very formidable obstacles. Financialization has involved not only the growth of the economic scale of the financial sector but also its growing social and political importance. Political importance and power here effectively means the ability to set the political agenda, the power to block policies viewed as detrimental to the interests of the financial sector, access to policymakers and government ministers, and so on. The lobbying by the financial sector and political donations, especially in the USA, are notorious. The ways in which the financial sector has successfully pushed for de-regulation over the years to the benefits of its profits and salaries are also well documented. The ideas of regulatory capture are also well-known, and the financial sector has always involved regulation, but regulation in whose interests? As Bernie Sanders expressed it: "Many people think Congress regulates Wall Street, but in fact it's Wall Street that regulates Congress" (Bernie Sanders twitter, 8 March 2016). Is it then reasonable to think that there could be a combination of political forces which could serve to defeat the financial sector, or at least diminish its scale and to organize it so that it better serves economy, society, and environment?

The political forces, which could overcome the power of the financial sector, appear to be weak and the prospects for a successful set of campaigns to reorganize and restructure the financial sector not too bright. And de-financialization would involve a concerted attempt to throw into reverse the trends over the past century or more of an expanding financial sector, though our proposals seek to address some of the ways in which the financial sector has particularly expanded in the past three decades. However, in terms of benefits for the real economy, the growth of the financial sector has run its course. The experiences since the global financial crisis of 2007/09 have been ones of effective policies to reform and restructure the financial sector and its political power appears to remain as strong as ever. But the arguments of this paper are that the financial sector often operates against the interests of the rest of the economy, people, firms, and government. The proposals sketched above would be the development of alternative financial institutions, which would more directly serve communities and people. Political campaigns have to be

built around those who could benefit from alternative forms of financial institutions, including consumers, workers, and the alternative forms of financial institutions as well as firms in the non-financial sector to have some chance of success.

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3

Financialization and the Financial Balance Sheets of Economic Sectors in the Eurozone

Jesús Ferreiro and Carmen Gómez

Abstract The process of financial liberalization has given rise to a widespread financialization process in most developed economies and many emerging economies. One of the most striking features of this process is the huge increase recorded in the size of the financial balance sheets not only of the total economy but also of the different economic sectors (public and private, financial and non-financial ones). However, despite the generalized nature of this process, significant differences remain among countries, and these differences could help to explain the different economic performances of these countries. The chapter will analyse the behavior of the balance sheets of the private and public agents in the Eurozone member states. The main objectives of the chapter are to detect the existence of significant differences among countries in the evolution of the size of the financial sheets of the different agents and to analyse

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whether the financialization process has had an impact on the economic activity of Eurozone countries.

Keywords Financialization • Great Recession • Financial balance sheets • Eurozone

JEL Classification E21 • E22 • E44 • O16 • O52

3.1 Introduction[1]

The last decades have witnessed a rapid growth of financial sectors in developed and emerging and developing economies. This expansion of the financial sector, financial institutions and financial products has given rise to what has been labeled the 'financialization' process. This concept encompasses not only the rising size of financial sectors, but, mainly, the rising influence of finances in non-financial agents' decision making: "financialisation means the increasing role of financial motives, financial markets, financial actors and financial institutions in the operation of the domestic and international economies" (Epstein 2005, p. 3)

But, although we are talking of a recent phenomenon typical of modern economies, "capitalist economies have always relied heavily on finance" (Brown et al. 2015, p. 6). Therefore, what actually defines and is characteristic of the current financialization process is the fact that the influence of finances in the economic process, and in the political and social arenas, is significantly larger than in the past (Sawyer 2015).

For this reason, most studies about the financialization process usually begin with a definition of this process that is focused mainly in the description (and further explanation) of the consequences of financialization instead of a precise definition of this process. Thus, for instance, for Hein and van Treeck (2010) the main consequences of financialization would be their effects on the objectives and constraints of (financial and

[1] This chapter draws on research funded by the European Union Seventh Framework Programme (FP7/2007–2013), Research Project Financialisation Economy Society and Sustainable Development (FESSUD (Project Number: 266800).

non-financial) corporations, mainly large corporations, with the consequent impact on corporate investment, the creation of new opportunities and risks for families due to the larger influence of wealth and indebtedness on households' decisions about consumption; and, lastly, the impact generated in income distribution due to the change in the power relations among shareholders, managers, and workers.

Fine (2013) emphasizes that the financialization process has involved "the phenomenal expansion of financial assets relative to real activity (…); the proliferation of types of assets, from derivatives to future markets (…); the absolute and relative expansion of speculative as opposed to or at the expense of real investment; as shift in the balance of productive to financial imperatives within the private sector whether financial or not; increasing inequality in income arising out of weight of financial rewards; consumer-led booms based on credit; the penetration of finance into ever more areas of economic and social life such as pensions, education, health, and provision of economic and social infrastructure; the emergence of a neo-liberal culture of reliance upon markets and private capital and corresponding anti-statism despite the extent to which the rewards to private finance have in part derived from state finance itself (…) the continued role of the US dollar as world economy (…) And however financialisation is defined, its consequences have been perceived to be: reductions in overall levels and efficacy of real investment (…); prioritizing shareholder value, or financial worth, over other economic and social values; pushing of policies towards conservatism and commercialization in all respects; extending influence of finance, more broadly, both directly and indirectly, over economic and social policy; placing more aspects of economics and social life at the risk of volatility from financial instability and , conversely, places the economy and social life at risks of crisis from triggers within particular markets" (p. 6).

In a shorter, and more operative, way we can state that the main elements that define the financialization process are: (i) the rising weight and size of financial activities, sectors, institutions and products, in modern market economies; (ii) the rising size of indebtedness of private agents (families and non-financial corporations); and (iii) the rising influence of financial variables on the non-financial private agents' decisions on their resources allocation processes.

Having said that, it is evident that although financialization is a common process to all developed economies, including the European ones, and to many emerging and developing economies, and that the main reasons of this process have been the widespread policies of liberalization and deregulation of the financial system (Sawyer 2011; Stockhammer 2011; Tyson and McKinley 2014; Hein 2015), it is true that the intensity, and the consequences, of this global process, differ markedly among countries, leading to a variegated process (Brown et al. 2015; Hein et al. 2016; Sawyer 2015).

The existence of these strong differences in the direction and intensity of the domestic financialization process, combined with the different economic impact of these processes, makes it necessary to study the national financialization processes and also the joint study of those economies that have similar levels of development and similar social, political and institutional frameworks. In this sense, this chapter analyzes the similarities and differences in the financialization of the economies that are members of the Eurozone. More specifically, given the polyhedrical nature of this process, we have focused our analysis on the study of the financial balance sheets of the main institutional sectors that form the economies of the eurozone.

As we have mentioned above, although financialization is a process that is common to developed, emerging, and developing economies, there are significant differences in the development of finances among countries, even among those economies with similar structural characteristics. Thus, in the case of the European Union member states, Ferreiro et al. (2016a) and Carrasco et al. (2016), show, through an analysis of the size and the evolution of the financial balance sheets of the European Union countries, that there are significant differences between the Eurozone countries and the non-Eurozone European Union member states. Moreover, they also show that, within the Eurozone the size of the financial balance sheets is much higher in the 11 countries that created the Eurozone in the year 1999 than in the countries that joined the Eurozone after this date.

To summarize, in this chapter we will focus our study on the analysis of the financial balance sheets of the Eurozone countries. Our objective is to analyse the existing differences in the size and evolution of these finan-

cial balance sheets, paying particular attention to the differences in the composition of their sectoral financial balance sheets, and in the changes registered since the onset of the Great Recession.

The chapter is structured as follows. In the first section we will test the hypothesis of the existence of a variegated financialization process in the countries belonging to the Eurozone. To this end, we will analyse the existence and the dimensions of differences in the size of financial balance sheets in the Eurozone economies and the evolution of these differences. This analysis will be made not only for the national financial balance sheets of the total economy, but also for the main sectors for which there is available information; namely, households, non-financial corporations, financial corporations, general governments and the rest of the world. In the second section, we will analyse whether the Great Recession has had a similar impact on national (and sectoral) financial balance sheets. Our objective in this section is to build a typology of countries according to the evolution before (in the years 1999 to 2008) and during the Great Recession (during the period 2008 to 2014) of the main components (net financial assets, assets and liabilities) of the different sectoral financial balance sheets. The third section of the chapter will study whether financialization in the Eurozone before and during the Great Recession has had a significant and common impact on the economic activity in the Eurozone. The final section summarizes and concludes.

3.2 Does There Exist a Variegated Financialisation Process in the Eurozone?

As mentioned in the previous section, although financialization is a widespread process in all developed economies, and also many emerging ones, there are significant differences with regard to its intensity. These differences also occur in the case of the economies that are members of the Eurozone, something up to the mark given the structural differences that exist among these countries.

The objective of this section is to analyse the size of these differences, and to check whether these differences have been reduced over time. With this aim, and using the data provided by Eurostat, we have analysed

the evolution of financial balance sheets in Eurozone countries between the years 1999 and 2014, years for which data are available for most Eurozone economies. We have analysed the evolution of the size, measured as a percentage of national GDPs, of the main components of these balance sheets, that is, the size of financial assets, financial liabilities and net financial assets (assets minus liabilities). This breakdown has been made for both the total economy and also its different sectors, namely: financial corporations, non-financial corporations, general government, households and non-profit institutions serving households (hereafter households) and the rest of the world.

To analyze the dynamics of these variables we have calculated for each year and variable both the unweighted mean and the standard deviation of the respective national data. This procedure allows us to analyze not only the existing tendency (if any) of this variable, but also the differences among countries. In other words, the evolution of the mean size of the financial balance sheets of the Eurozone economies allows us to detect the existence (and the intensity) of the financialization processes in the Eurozone. Moreover, the evolution of the standard deviation of the size of the national financial balance sheets allow us to record the evolution of the differences in the national financialization processes; that is whether the differences have remained steady along time or, on the contrary, whether they have changed in the sense of a convergence process (smaller differences) or a divergence process (larger differences). Table 3.1 shows the main results obtained with this analysis.

When we focus on the financial balance sheets of the whole economy, the data show an intense growth of the average size of financial balance sheets in euro countries, regardless of whether we measure it by the size of financial assets or by the size of financial liabilities. As can be observed, there has been a substantial increase since the year 2002. This jump is explained by the lack of data for some countries: data for Ireland and Slovenia are only available since the year 2001; data for Luxembourg are only available since the year 2002; and, finally, data for Latvia and Luxembourg are only available since the year 2004. In any case, the main reason for the increase registered in the year 2002 is explained by the case of Luxembourg. The reason is that along the whole

Table 3.1 Financial balance sheets by sectors of euro area countries (percentage of the GDP)

	Total Economy						Non-Financial Corporations					
	Average (percentage of GDP)			Standard Deviation			Average (percentage of GDP)			Standard Deviation		
	Assets	Liabilities	Net Financial Assets	Assets	Liabilities	Net Financial Assets	Assets	Liabilities	Net Financial Assets	Assets	Liabilities	Net Financial Assets
1999	242.07	283.50	−41.44	199.72	198.30	73.42	74.3	204.1	−129.8	37.8	82.3	70.8
2000	252.46	291.45	−39.01	201.53	199.86	64.57	76.4	193.9	−117.5	37.3	76.3	66.1
2001	312.76	343.18	−30.42	291.87	286.27	48.04	75.9	180.1	−104.2	36.3	60.2	47.6
2002	805.80	834.66	−28.88	2082.71	2077.32	32.57	79.5	183.7	−104.2	52.2	80.9	46.3
2003	855.45	880.95	−25.50	2219.99	2203.00	33.30	87.9	188.1	−100.2	69.3	81.6	35.0
2004	852.87	876.59	−23.73	2192.68	2169.92	38.21	84.8	187.1	−102.3	73.4	78.7	31.1
2005	1030.88	1056.87	−26.00	2662.89	2645.01	37.34	89.6	195.4	−105.8	67.3	73.9	30.7
2006	1112.96	1137.68	−24.73	2815.74	2783.81	45.44	100.4	209.6	−109.2	94.3	87.9	31.6
2007	1194.25	1227.74	−33.49	2968.25	2953.97	39.43	109.0	225.0	−116.0	120.3	132.8	30.2
2008	1149.58	1185.79	−36.22	2552.76	2533.21	45.85	98.1	202.8	−104.7	71.3	85.5	34.4
2009	1266.57	1309.46	−42.92	2842.27	2826.51	52.43	110.5	223.9	−113.4	86.6	101.6	37.5
2010	1314.88	1359.31	−44.44	2936.55	2941.58	51.08	112.2	225.7	−113.5	70.3	97.0	43.0
2011	1323.96	1363.07	−39.10	2999.00	2991.60	54.84	113.4	220.8	−107.4	76.1	99.1	44.2
2012	1416.84	1455.02	−38.17	3356.80	3337.51	60.32	121.0	228.8	−107.8	90.0	105.5	37.4
2013	1408.91	1449.21	−40.29	3395.06	3388.53	58.54	121.0	236.4	−115.4	89.5	113.1	48.9
2014	1551.04	1587.70	−36.68	3863.23	3858.99	62.03	130.2	244.2	−114.0	107.2	132.1	50.1

Table 3.1 (continued)

	Financial Corporations						General Government					
	Average (percentage of GDP)			Standard Deviation			Average (percentage of GDP)			Standard Deviation		
	Assets	Liabilities	Net Financial Assets	Assets	Liabilities	Net Financial Assets	Assets	Liabilities	Net Financial Assets	Assets	Liabilities	Net Financial Assets
1999	240.51	247.57	−7.06	156.32	155.21	29.38	37.9	66.8	−28.9	21.1	30.3	44.0
2000	244.69	249.48	−4.77	156.56	154.36	11.05	34.0	65.6	−31.6	16.1	31.2	40.2
2001	276.83	280.01	−3.16	215.36	215.45	8.52	33.8	62.7	−29.0	15.3	31.6	40.4
2002	751.61	750.66	0.96	1981.35	1970.77	12.43	34.8	60.0	−25.2	17.7	33.0	44.9
2003	793.73	796.56	−2.82	2097.85	2090.19	10.71	35.2	59.7	−24.5	18.6	32.2	44.2
2004	798.14	798.20	−0.07	2069.74	2061.16	14.07	34.6	59.0	−24.4	18.7	32.6	43.2
2005	977.01	978.36	−1.36	2546.59	2542.18	13.38	34.8	58.7	−23.9	19.7	34.1	44.0
2006	1052.24	1052.46	−0.21	2671.99	2664.67	12.50	34.4	56.1	−21.8	21.4	33.7	44.2
2007	1129.93	1129.38	0.55	2797.83	2788.03	14.76	34.8	53.3	−18.6	21.7	32.9	43.5
2008	1100.76	1096.47	4.27	2438.99	2426.64	16.06	33.7	57.6	−23.8	18.0	33.3	42.0
2009	1205.48	1203.67	1.82	2706.18	2699.67	14.89	39.1	68.5	−29.5	21.1	34.4	46.0
2010	1254.25	1251.50	2.75	2822.02	2821.25	11.23	41.0	73.1	−32.1	22.6	32.1	45.0
2011	1265.51	1259.07	6.46	2885.17	2875.22	18.68	40.5	75.2	−34.7	20.1	31.7	41.4
2012	1347.32	1339.02	8.31	3226.62	3215.73	19.24	45.2	86.8	−41.7	21.6	40.3	47.4
2013	1333.27	1325.68	7.58	3271.79	3266.03	15.72	46.0	90.5	−44.5	22.7	42.8	50.1
2014	1464.19	1455.43	8.75	3728.20	3723.13	17.50	46.7	96.3	−49.6	24.2	44.0	53.6

(*continued*)

Table 3.1 (continued)

	Households						Rest of the World					
	Average (percentage of GDP)			Standard Deviation			Average (percentage of GDP)			Standard Deviation		
	Assets	Liabilities	Net Financial Assets	Assets	Liabilities	Net Financial Assets	Assets	Liabilities	Net Financial Assets	Assets	Liabilities	Net Financial Assets
1999	166.9	42.4	124.5	77.8	29.3	63.5	188.04	145.45	42.59	149.21	134.25	73.44
2000	160.3	44.2	116.1	72.0	29.6	58.2	197.92	157.85	40.08	150.75	138.01	64.58
2001	149.9	44.0	105.9	68.1	28.1	53.7	226.13	194.76	31.38	208.71	207.15	48.19
2002	145.1	45.5	99.6	65.3	27.4	49.7	705.42	675.65	29.74	2004.29	2009.29	32.80
2003	150.1	48.1	102.1	66.4	27.2	50.6	748.51	722.19	26.34	2131.91	2148.71	33.53
2004	152.3	49.2	103.1	67.4	26.9	53.4	750.64	726.21	24.44	2105.69	2128.53	38.29
2005	160.2	55.1	105.0	71.0	28.9	57.9	922.07	895.19	26.88	2579.96	2598.04	37.30
2006	165.4	59.0	106.4	71.0	27.9	59.3	992.89	967.29	25.61	2718.02	2750.15	45.46
2007	162.4	61.9	100.6	68.0	28.0	57.0	1081.72	1047.25	34.47	2880.77	2895.14	39.28
2008	152.5	64.4	88.0	63.7	29.3	52.6	1035.25	998.02	37.24	2455.36	2475.52	45.70
2009	167.4	69.3	98.1	65.1	31.0	53.2	1141.02	1096.81	44.22	2733.36	2750.02	52.13
2010	168.1	69.7	98.4	65.3	31.3	52.1	1190.58	1144.41	46.17	2857.14	2853.26	50.64
2011	164.4	67.8	96.6	66.7	31.3	52.3	1202.29	1161.22	41.06	2911.48	2920.28	54.53
2012	170.2	67.2	103.0	68.9	31.5	54.0	1294.16	1253.94	40.22	3252.30	3272.59	60.21
2013	178.2	66.1	112.1	74.0	31.1	55.1	1290.80	1249.08	41.71	3301.62	3308.89	58.41
2014	183.6	65.5	118.1	76.9	30.9	57.4	1423.92	1385.69	38.25	3741.48	3746.23	61.86

Source: Our calculations based on Eurostat, Annual Sector Accounts (ESA 2010), Financial Balance Sheets

period the size of the financial balance sheet in Luxembourg is more than ten times higher than the average size for the whole Eurozone.

Regarding the evolution of the net financial assets, data show that, taken as a whole, the Eurozone countries have registered a permanent debtor position (that is, negative net financial assets or net financial liabilities). Although the net financial liabilities in the euro countries showed a declining trend until the year 2006, since this year they have increased constantly.

When we focus our analysis on the national differences, measured by the evolution of the annual standard deviations, we can see that in terms of the financial assets and the financial liabilities, the differences among countries have been rising, thus leading to a significant divergence process in the Eurozone countries related to the size of the national financial balance sheets. Thus, in the year 2004 the size of financial assets ranged from 31.2 percent of GDP in Lithuania to 9817 percent of GDP in Luxembourg (and 1316 percent of GDP in Ireland); while the size of financial liabilities ranged from 72.3 percent of GDP in Lithuania to 9752 percent of GDP in Luxembourg (and 1629 percent of GDP in Ireland). Ten years later, in 2014, the size of financial assets ranged from 53.7 percent of GDP in Lithuania and 17,173 percent of GDP in Luxembourg (compared with 2787 percent of GDP in Malta), and the size of financial liabilities ranged from 97.2 percent of GDP in Lithuania to 17,917 percent of GDP in Luxembourg (and 2790 percent of GDP in Ireland).

In the case of net financial assets, since the year 2004, the year for which national data are available for all countries, we observe a steady divergence process with regard to their size. Thus, if in the year 2004 the size of net financial assets ranged from −86.2 percent of GDP in Estonia to +65.5 percent of GDP in Luxembourg, in 2014 this range was from −139.6 percent of GDP in Cyprus to +79 percent of GDP in Netherlands.

The greater divergence among Eurozone economies is also registered when we analyse the financial balance sheets of non-financial corporations. Since the decade of the 2000s the average size of financial assets and liabilities of non-financial corporation has continued to rise. However, this dynamic does not happen in the case of the net indebtedness of non-financial corporations. Thus, the net financial liabilities of these corporations has remained quite steady, at around 110 percent of the GDP.

When we focus on the differences between countries, we can observe the existence of two different phases. Up to the year 2007 the differences in the size of the financial assets and liabilities and in the net financial liabilities of non-financial corporations in the Eurozone experienced a strong increase, peaking in the year 2007. With small changes, the differences in the size of financial assets and financial liabilities fall until the year 2010, and since then they have risen again, reaching figures close to those registered in 2007. Thus, in the year 2004 the size of financial assets ranged from 30.3 percent of GDP in Latvia to 363 percent of GDP in Luxembourg (and 135 percent of GDP in Belgium), while financial liabilities ranged from 96.3 percent of GDP in Greece to 456 percent of GDP in Luxembourg (and 252 percent of GDP in Netherlands). In the year 2007, before the onset of the financial crisis, the size of the financial assets oscillated between 31.9 percent of GDP in Latvia and 586 percent of GDP in Luxembourg (registering 159 percent of GDP in Belgium), and financial liabilities oscillated between 126 percent of GDP in Greece and 742 percent of GDP in Luxembourg (258 percent of the GDP in Netherlands). Finally, in 2014 the financial assets ranged from 43.4 percent of GDP in Greece to 408 percent of GDP in Luxembourg, while financial liabilities ranged from 117 percent of GDP in Lithuania to 592 percent of GDP in Luxembourg (and 549 percent of GDP in Ireland).

Regarding net financial liabilities, the divergence registered before the onset of the crisis fell until the year 2007, and has been increasing since 2008. Thus, the range of maximum and minimum values of net financial liabilities changed between 2004 and 2007 from −53.9 percent of GDP in Germany and −176.9 percent of GDP in Cyprus, to −61.9 percent of GDP in Germany and −161.4 percent of GDP in Finland. In 2014 these values had reached −57.1 percent of GDP in Germany and −265.3 percent of GDP in Cyprus.

In the case of financial corporations, the average size of financial assets and liabilities has been increasing constantly. This tendency, however, does not take occur with regard to net financial assets. Between 1999 and 2006, with the single exception of the year 2002, financial corporations maintained a net debtor positions. But since 2007, with the onset of the financial crisis, these corporations have registered a net creditor position, which, moreover, has a rising tendency.

This rising tendency in the size of financial assets and liabilities, and the change to a net creditor position of financial corporations, have come with a larger divergence in the Eurozone. Thus, in 2004, the range of the size of financial assets varied between 111 (Latvia) and 9723 percent of GDP in Luxembourg (1044 percent of GDP in Ireland), and in the size of financial liabilities between 66 percent of GDP in Lithuania and 9238 percent of GDP in Luxembourg (1057 percent of GDP in Ireland). Ten years later, in 2014, ranges have increased, for financial assets from 97.5 percent of GDP in Lithuania to 16,550 percent of GDP in Luxembourg (2909 percent of GDP in Malta), and for financial liabilities from 98.1 percent of GDP in Lithuania to 16,515 percent of GDP in Luxembourg (2952 percent of GDP in Malta).

It is remarkable that the dispersal of the net debtor/creditor position of financial corporations has risen since 2007. Thus, in the year 2004, the net financial assets of financial corporations ranged from −23.9 percent of GDP (Estonia) to +35.2 percent of GDP (Luxembourg), and in 2014 those figures moved to −42.9 percent of GDP in Malta and +35 percent of GDP in Luxembourg.

Regarding households, it can be seen that the mean size of financial assets remained relatively constant until the onset of the financial crisis. However, since 2009 the size of financial assets has increased, peaking in 2014. Conversely, the size of financial liabilities kept rising until 2010, when it peaked at 69.7 percent of GDP, before entering into a smooth decline. Regarding net financial assets, they had a sharp fall in the years 2007 and 2008, rising again since 2009.

The differences in the size of financial liabilities in the Eurozone countries have remained almost unchanged. Thus, in 2004 the size of households' financial liabilities ranged from 12.6 percent of GDP in Lithuania to 111 percent of GDP in Netherlands, whilst in 2014 the range was from 148 percent of GDP in Cyprus to 31 percent of GDP in Lithuania. On the contrary, in the case of the financial assets, with the exception of the years 2007 and 2008, the differences have been growing: in 2004 the size of households' financial assets ranged between 47.2 percent of GDP in Slovakia and 267 percent of GDP in Belgium, whilst in 2014 the range was between 320 percent of GDP in Netherlands and 75 percent of GDP in Slovakia.

Differences in the size of households' net financial assets have registered a rising trend, only broken in the period 2008 to 2010, when

there was a decline in the dispersal of net financial assets. Since 2011, the differences have begun to increase again, returning to figures similar to those registered before the crisis. As a result, the range of maximum and minimum values registered in 2004 (196 percent of GDP in Italy and 32 percent of GDP in Slovakia) and increased ten years later (234 percent of GDP in Belgium and 39 percent of GDP in Slovakia).

Regarding the financial balance sheets of the Eurozone general governments, the size of financial assets remained steady until the onset of the Great Recession, at around 35 percent of GDP, skyrocketing since 2009 due to the impact on public finances of the bank rescues. With regard to the financial liabilities they followed a declining tendency until 2007, rising since 2008 because of the larger fiscal deficits. The result of both processes was that the net financial liabilities of general governments, which had fallen until 2007, increased rapidly since 2008, peaking at almost 50 percent of GDP in 2014.

In the case of financial assets, the dispersal of the national sizes has been rising permanently. In the year 2004, the financial assets of general governments ranged from 19 percent (in Spain) to 94 percent of GDP (in Ireland). In the year 2014, these figures increased, reaching 25 percent of GDP in Slovakia and 125 percent of GDP in Finland. For its part, the widespread decline in the size of financial liabilities registered before the crisis did not come with a fall in its dispersal. However, the increase registered since 2008 has come with a larger divergence; thus, the minimum and maximum values recorded in 2004 (9 percent of GDP in Estonia and 116 percent of GDP in Italy) have enlarged to 14 percent of GDP (Estonia) and 181 percent of GDP (Greece).

The pattern followed by net financial assets is very similar to that of financial liabilities, and, thus, although the dispersal of the latter remained quite steady until the onset of the Great Recession, since then it has increased, peaking in 2014. As a result, the minimum and maximum values in 2004 (–94 percent of GDP in Italy and +45 percent of GDP in Finland) increases in 2014 up to –132 percent of GDP (Greece) and +54 percent of GDP (Finland).

As for the financial balance sheet of the rest of the world, as expected, the data show a rising tendency in the size of the financial assets and liabilities and also in their dispersal. Table 3.1 shows a marked increase

in the size of the average net debtor position of the Eurozone countries that has only started to decline since the year 2011. Nonetheless, this process of external adjustment comes with a larger dispersal of national figures. Thus, in 2004 the highest net debtor position was that of Estonia (86 percent of GDP) and the highest net creditor position was that of Luxembourg (65.5 percent of GDP). In 2014 the highest net debtor position was that of Cyprus (142 percent of GDP) and the highest net creditor position was that of Netherlands (76 percent of GDP).

In summary, the data about the composition and evolution of the financial balance sheets of the sectors in the Eurozone countries show that the financialization process in these countries has implied a remarkable increase in the size of the financial assets and liabilities and of the value (in absolute terms) of net financial assets. However, there are exceptions to this pattern. If we focus on the financial balance sheets of private sectors (households, financial corporations, and non-financial corporations) we can see that in some countries and sectors the size of the financial balance sheets declined between 1999 and 2014; in non-financial corporations the size of financial assets has declined in Germany (from 105.6 to 103 percent of GDP) and Slovakia (from 108.7 to 81.9 percent of GDP). This decline has also happened in financial liabilities in Germany (from 168.1 to 160.1 percent of GDP), Netherlands (from 343.8 to 244.5 percent of GDP), Slovakia (from 186.2 to 147.2 percent of GDP) and Finland (from 354 to 216.1 percent of GDP).

In the case of financial corporations, the shrinking of the financial system takes place only in Slovakia, where the size of the financial assets of financial corporations fell from 165.7 to 134.2 percent of GDP, and the size of the financial liabilities fell from 177.8 to 134.1 percent of GDP:

Finally, in the case of households the size of financial assets fell between 1999 and 2014 in Belgium (from 298.9 to 293.3 percent of GDP) and in Greece (from 204.7 to 139.4 percent of GDP), whereas the size of the financial liabilities only fell in German households (from 71.1 to 54.9 percent of GDP).

These data, along with the generalized increase in the standard deviations of the national sizes of the financial assets, liabilities, and net financial assets, confirm the hypothesis of a variegated financialisation process among the eurozone countries.

3.3 The Impact of the Great Recession on the Composition of Financial Balance Sheets

In the previous section we saw that since the onset of the financial crisis in 2007–2008 and the subsequent Great Recession, there has been a clear change in the evolution and the tendency of the sectoral size of the financial assets and liabilities and the net financial assets.

We will now focus our attention on the performance before and during the Great Recession of net financial assets in the Eurozone countries. With this aim, we will analyse the evolution of sectoral net financial assets in two periods: 1999–2008 and 2008–2014. First, we will study for each sector in which countries the net financial assets have increased or declined. Second, we will study in each country the changes in the size of financial assets and liabilities. With this procedure, we will set a typology of countries that share a similar performance of assets, liabilities, and net financial liabilities. As far as we can conclude that there coexist different groups of countries, we are able to show the existence of different processes of financialization in Eurozone countries. In any case, we wish to emphasize that we are focusing our analysis on the sign of the changes registered and not on the size of these differences. Therefore, within each group there could be (and there are indeed) large differences in the size of these changes, as will be seen.

The possible groups of countries would be the following ones:

(i) Group 1: formed by countries where the size of financial assets and liabilities increases, and where net financial assets increase due to the larger rise in financial assets.
(ii) Group 2: formed by countries where the size of financial assets and liabilities increases, and where net financial assets decline due to the larger rise in financial liabilities.
(iii) Group 3: formed by countries where the size of financial assets and liabilities declines, and where net financial assets increase due to the larger decline in financial liabilities.

(iv) Group 4: formed by countries where the size of financial assets and liabilities increases, and where the size of net financial assets declines due to the larger decline in financial assets.
(v) Group 5: formed by countries where the size of financial assets increases and the size of liabilities declines, and therefore the size of net financial assets increases.
(vi) Group 6: formed by countries where the size of financial assets declines and the size of liabilities increases, and therefore the size of net financial assets declines.

Since in groups 1 and 2 there is an increase in the size of financial assets and liabilities (regardless of the evolution of net financial assets), we can argue that in these countries there is a clear-cut process of financialization given the increasing size of the financial balance sheets. By contrast, in the countries belonging to groups 3 and 4 we would find a de-financialization process because of the declining size of the financial assets and liabilities. Finally, countries belonging to groups 4 and 5 would form an indeterminate set of countries due to the opposite changes registered in both sides of the financial balance sheets.

As we have pointed out, we have calculated for each Eurozone country and sector, the change registered in the main components of the financial balance sheets (assets, liabilities, and net financial assets) before and during the Great Recession; that is, first, the difference between the value registered in 2008 and the value for the year 1999 (or the first available year); and second, the difference between the value registered in 2014 and the value for the year 2008. The data for the 19 euro countries and the different sectors are shown in Table 3.2.

The data in Table 3.2 clearly show the remarkable differences in the dynamics of the sectoral financial balance sheets in the Eurozone. These differences are more easily seen in Table 3.3, where for each component of the sectoral financial balance sheets we show the mean of the value for the Eurozone countries, the standard deviation, and the minimum and maximum values.

In addition to confirming the existence of significant differences in the performance of all items before and during the Great Recession, Table 3.3 shows the differences existing among countries, both when these dif-

Table 3.2 Change in the financial balance sheets by sectors of eurozone countries (percent of the GDP)

	Total Economy						Non-Financial Corporations					
	1999–2008*			2008–2014			1999–2008*			2008–2014		
	Assets	Liabilities	Net Financial Assets	Assets	Liabilities	Net Financial Assets	Assets	Liabilities	Net Financial Assets	Assets	Liabilities	Net Financial Assets
Belgium	167.9	228.1	−60.2	−13	−19.7	6.6	80.9	88.2	−7.3	28.9	44.3	−15.3
Germany	87.3	67.5	19.8	−5.2	−26.4	21.1	−10.1	−25.2	15.1	7.5	17.2	−9.7
Estonia	151.9	175.8	−23.9	31.1	−1.6	32.7	25.1	38.6	−13.5	20.6	26.1	−5.4
Ireland	827.8	906.2	−78.6	715.3	724.5	−9.2	9.3	16.3	−7	267.4	308.5	−41.1
Greece	36.7	103	−66.3	26.7	63.5	−36.8	12.1	−57.9	70.1	2.9	27.3	−24.5
Spain	39.8	83.3	−43.6	13.7	28.9	−15.2	17.6	42.1	−24.5	8.3	5.4	2.9
France	84	102.6	−18.6	52.2	59	−6.8	−10.3	−32.8	22.4	30.6	45.3	−14.7
Italy	4.1	26.4	−22.3	26.4	28.4	−2	4.9	37	−32.1	9.2	−4.1	13.3
Cyprus	1015.6	905.2	110.4	−48.4	12.1	−60.5	−6.7	−34.1	27.5	−10.1	75.4	−85.5
Latvia	53.9	90.3	−36.3	71	47.9	23	−1.6	15.8	−17.3	15.6	26.7	−11.3
Lithuania	20.6	37.6	−17	10.8	3.1	7.7	15.7	17.2	−1.5	10.4	−10.2	20.6
Luxembourg	2534.4	2479	55.4	5819.8	5889.1	−69.3	91.6	58.7	32.9	69.4	111.6	−42.2
Malta	1710.9	1743.6	−32.7	363.1	322.1	41	16.6	24.9	−8.4	44.6	2.6	42.1
Netherlands	229.6	137.7	92	297.8	211.3	86.5	16.2	−121.4	137.6	55.2	22.1	33.2
Austria	159.7	154.9	4.8	30.5	18.2	12.3	31.1	24	7.2	23.4	24.2	−0.8
Portugal	63.5	124.7	−61.1	19.2	37.1	−17.9	10.2	29	−18.8	19	22.1	−3.1
Slovenia	68.8	105.1	−36.3	54	62.6	−8.6	8.9	30.7	−21.8	−0.2	1.5	−1.6
Slovakia	−122	−112.2	−9.8	45.6	65	−19.4	−31.1	−52	20.9	4.3	13	−8.7
Finland	149.8	−21.3	171.1	117	111.1	5.9	38.3	−166.7	205	3.9	28.8	−24.9

(*continued*)

Table 3.2 (continued)

	Financial Corporations						General Government					
	1999–2008*			2008–2014			1999–2008*			2008–2014		
	Assets	Liabilities	Net Financial Assets	Assets	Liabilities	Net Financial Assets	Assets	Liabilities	Net Financial Assets	Assets	Liabilities	Net Financial Assets
Belgium	116	139.5	–23.5	–30.8	–40.4	9.5	4.5	–25.5	30.1	5	28.7	–23.7
Germany	101.1	95.9	5.2	–39.2	–52.7	13.4	–1.6	8.1	–9.7	11.4	14.1	–2.7
Estonia	98.3	91.1	7.2	–13.7	–17.5	3.8	–15.8	–2.4	–13.4	9.9	5.3	4.6
Ireland	805.4	813	–7.6	405.2	362.1	43.1	11.7	–1.5	13.3	9	78.2	–69.2
Greece	36.2	19.5	16.6	39.2	21.5	17.7	–3	22.7	–25.9	21.9	62.4	–40.5
Spain	83.6	72.5	11.1	6.9	11.8	–4.9	3.7	–20.8	24.6	10.4	70.7	–60.3
France	90.7	102.9	–12.2	48.5	41.8	6.7	–3.6	8.1	–11.6	6.6	37.6	–31.1
Italy	38.6	9.9	28.7	50.8	35.8	15	0.8	–9.2	10	4.9	44.2	–39.3
Cyprus	1082.3	961.4	120.9	–41.8	–53.1	11.3	–4.7	–9.7	5	25.4	64.7	–39.3
Latvia	47.4	44.9	2.5	12.6	13.6	–1	1.2	5.3	–4.2	8.5	24.1	–15.5
Lithuania	70.6	67.1	3.5	–8.1	–7	–1	–30.8	–15.4	–15.4	3.7	35.6	–31.9
Luxembourg	2420.2	2401.4	18.6	5730.7	5756.2	–25.4	2.9	6.9	–4	6.8	14.5	–7.7
Malta	1709.4	1720.8	–11.4	356.4	388.1	–31.7	–5.5	–6.1	0.7	7.7	12.9	–5.3
Netherlands	211.7	228.4	–16.7	285.6	286	–0.4	–0.2	–6.3	6	–0.6	20	–20.6
Austria	116.4	113	3.4	–22.9	–31.5	8.6	1.2	9.4	–8.1	11.5	27	–15.6
Portugal	103.3	107.9	–4.7	3.4	–1.8	5.2	–3	20.3	–23.4	19.6	68	–48.4
Slovenia	62.4	69.1	–6.8	–1.6	–10.6	9.1	–12.8	–4.6	–2.1	42.8	69	–26.3
Slovakia	–45.7	–56.5	10.8	14.2	12.8	1.4	–33	–19.1	–13.8	6.2	26.6	–20.4
Finland	100.7	108.2	–7.5	109.9	105.2	4.6	–12.5	–14.2	1.6	36.6	32.6	4

Table 3.2 (continued)

	Households						Rest of the World					
	1999–2008*			2008–2014			1999–2008*			2008–2014		
	Assets	Liabilities	Net Financial Assets	Assets	Liabilities	Net Financial Assets	Assets	Liabilities	Net Financial Assets	Assets	Liabilities	Net Financial Assets
Belgium	–50.4	9.1	–59.4	44.8	8.6	36.2	228.1	166.6	61.5	–19.7	–13.5	–6.1
Germany	–2.2	–11.3	9.2	15.2	–4.9	20.1	103.3	122	–18.7	–16	4.2	–20.1
Estonia	44.4	48.5	–4.1	14.3	–15.4	29.7	81.5	57.5	23.9	0.3	33.1	–32.7
Ireland	1.2	64	–62.8	33.7	–24.3	58	646.6	568.1	78.5	752.4	743.1	9.3
Greece	–89.4	37.7	–127.1	24.1	13.6	10.5	103	36.7	66.3	63.5	26.7	36.8
Spain	–18.7	36.1	–54.8	38.9	–8.2	47.1	83.6	40.1	43.6	28.6	13.3	15.2
France	–2	15.1	–17.1	36.4	4.2	32.2	102.6	83.5	19.1	59	51.1	7.9
Italy	–10	18.7	–28.7	13	4	9	26.4	3.1	23.3	28.4	24.5	3.9
Cyprus	–11.7	31.5	–43.1	79	26	53	905.2	1015.6	–110.3	12.1	–49.5	61.6
Latvia	6.9	24.2	–17.3	34.4	–16.5	50.8	33.6	–2.8	36.3	39.2	62.6	–23.3
Lithuania	29.7	33.3	–3.5	15.5	–4.5	20	37.6	20.7	16.9	3.1	10.6	–7.5
Luxembourg	19.7	11.8	7.9	13	6.9	6.1	2416.2	2471.6	–55.4	5710.2	5640.9	69.3
Malta	2.4	16.1	–13.7	44.4	8.4	36	1743.6	1710.8	32.8	322.1	363.2	–41
Netherlands	–9.8	25.1	–34.9	77.9	3.6	74.2	140.8	233.1	–92.3	205.1	290.6	–85.4
Austria	10.8	8.4	2.4	18.6	–1.4	20	145.9	150.7	–4.7	–9.7	1.7	–11.5
Portugal	20.8	35	–14.3	20.3	–8.1	28.3	124.7	64.1	60.7	37.1	16.3	20.6
Slovenia	10.2	9.9	0.3	12.9	2.8	10.3	70	33.7	36.3	25	16.4	8.6
Slovakia	–12.2	15.4	–27.6	20.8	12.6	8.4	–36.2	–46	9.8	32.9	13.5	19.4
Finland	–3.6	24.6	–28.1	34.6	12.3	22.3	–21.3	149.8	–171.1	111.1	117	–5.9

Source: Our calculations based on Eurostat, Annual Sector Accounts (ESA 2010), Financial Balance Sheets

*For Ireland and Slovenia, the figures correspond to the difference between the year 2008 and 2001. For Latvia and Malta, their figures correspond to the difference between the year 2008 and 2004. For Luxembourg, the figure corresponds to the difference between the year 2008 and 2002

Table 3.3 Main statistics of the change in the components of sectoral financial balance sheets in the periods 1999–2008 and 2008–2014

Sector	Item	Mean (percentage of GDP)	Standard Deviation	Minimum (percentage of GDP)	Maximum (percentage of GDP)
Total Economy 1999–2008	NFA	–2.8	66.1	–78.6 (Ireland))	171.1 (Finland)
	Assets	383.4	686	–122 (Slovakia)	2534 (Luxembourg)
	Liabilities	386.2	675	–112.2 (Slovakia)	2479 (Luxembourg)
Total Economy 2008–2014	NFA	–0.5	35.3	–69.3 (Luxembourg)	86.5 (Netherlands)
	Assets	401.5	1324	–48.4 (Cyprus)	5820 (Luxembourg)
	Liabilities	401.9	1340	–26.4 (Germany)	5889 (Luxembourg)
Non-Financial Corporations 1999–2008	NFA	20.3	59.7	–32.1 (Italy)	205 (Finland)
	Assets	16.8	29.3	–31.1 (Slovakia)	91.6 (Luxembourg)
	Liabilities	–3.6	62.7	–166.7 (Finland)	88.2 (Belgium)
Non-Financial Corporations 2008–2014	NFA	–10.4	26.1	–85.5 (Cyprus)	33.2 (Netherlands)
	Assets	29.2	63.2	–10.1 (Cyprus)	267.4 (Ireland)
	Liabilities	39.6	72.2	–10.2 (Lithuania)	308.5 (Ireland)
Financial Corporations 1999–2008	NFA	7.3	30.5	–23.5 (Belgium)	120.9 (Cyprus)
	Assets	381.5	665.7	–45.7 (Slovakia)	2420 (Luxembourg)
	Liabilities	374.2	658.6	–56.5 (Slovakia)	2401 (Luxembourg)
Financial Corporations 2008–2014	NFA	4.5	15.6	–31.7 (Malta)	43.1 (Ireland)
	Assets	363.4	1307	–41.8 (Cyprus)	5731 (Luxembourg)
	Liabilities	359	1314	–53.1 (Cyprus)	5756 (Luxembourg)
General Government 1999–2008	NFA	–2.1	14.8	–25.9 (Greece)	30.1 (Belgium)
	Assets	–5.3	11.4	–33 (Slovakia)	4.5 (Belgium)
	Liabilities	–2.8	13.4	–25.5 (Belgium)	20.3 (Portugal)
General Government 2008–2014	NFA	–25.7	20.5	–69.2 (Ireland)	4.6 (Estonia)
	Assets	13.0	11.4	–0.6 (Netherlands)	42.8 (Slovenia)
	Liabilities	38.7	23.1	5.3 (Estonia)	78.2 (Ireland)

(*continued*)

Table 3.3 (continued)

Sector	Item	Mean (percentage of GDP)	Standard Deviation	Minimum (percentage of GDP)	Maximum (percentage of GDP)
Households 1999–2008	NFA	–27.2	32.7	–127.1 (Greece)	9.2 (Germany)
	Assets	–3.4	29	–89.4 (Greece)	44.4 (Estonia)
	Liabilities	23.9	16.8	–11.3 (Germany)	64 (Ireland)
Households 2008–2014	NFA	30.1	19.3	6.1 (Luxembourg)	74.2 (Netherlands)
	Assets	31.1	19.9	12.9 (Slovenia)	79 (Netherlands)
	Liabilities	1.0	12.2	–24.3 (Ireland)	26 (Cyprus)

Source: Our calculations based on Eurostat, Annual Sector Accounts (ESA 2010), Financial Balance Sheets
NFA: Net Financial Assets

ferences are measured using the standard deviations and when we observe the differences between the minimum and maximum figures for each component. Therefore, we verify that the financialization processes in the Eurozone does not have the same intensity, confirming the existence of a variegated of financialization.

Financial Balance Sheets of the Total Economy

It is frequently argued that financialization, with respect to the liberalization of the international financial transactions, is directly related to the surge in balance of payments imbalances. This relationship has been the object of deep analyses in the case of European countries, in general, and principally in the case of the eurozone economies. Thus, in the latter case, a number of papers have studied the joint impact of the monetary integration process and the financial liberalization of the generation of structural imbalances in the balance of payments of these countries (see, for instance, Carrasco and Peinado 2015; Carrasco and Serrano 2014; Dodig and Herr 2015a).

First, we will analyse the performance of the financial balance sheets of the total economy before the onset of the Great Recession. To that end, we have calculated the difference between the size of financial assets and

liabilities and net financial assets between the year 1999 and 2008 (or the first available year). In this period we have obtained four groups, formed by the following countries:

- Group 1: Austria, Cyprus, Germany, Luxembourg and Netherlands.
- Group 2: Belgium, Estonia, France, Greece, Ireland, Italy, Latvia, Lithuania, Malta, Portugal, Slovenia and Spain.
- Group 4: Slovakia.
- Group 5: Finland.

Therefore, the 17 countries included in groups 1 and 2 would have recorded a clear financialization process, due to the larger size of the financial balance sheets of these economies. The opposite result takes place in Slovakia, where both financial assets and liabilities decline, being the only country where a de-financialization process took place before the Great Recession.

As a whole, before the crisis the size of net financial assets rose in 6 countries, falling in the remaining 13 ones. The size of financial assets increased in 18 countries (falling in 1 country), and, finally, the size of financial liabilities increased in 17 countries (falling in 2 countries).

The performance of financial balance sheets since 2008 (calculated as the difference between the values of the different items in the year 2014 and 2008) offers different outcomes. Now, the Eurozone countries can be gathered together in five groups:

- Group 1: Austria, Finland, Latvia, Lithuania, Malta, and the Netherlands.
- Group 2: France, Greece, Ireland, Italy, Luxembourg, Portugal, Slovakia, Slovenia, and Spain.
- Group 3: Belgium and Germany.
- Group 5: Estonia.
- Group 6: Cyprus.

Therefore, since the beginning of the crisis net financial assets have increased in 9 countries (declining in 10 countries), and the size of financial assets and liabilities increased in 16 countries (falling in 3 countries).

Comparing both periods, we can notice that there is a change of group in 10 countries. Slovakia now joins the set of countries that record a financialization process due to the larger size of the financial assets and liabilities. Moreover, during the Great Recession a definancialization process has taken place in Belgium and Germany where there is a fall in the size of the financial balance sheets.

For the whole set of euro economies, there has not been a significant change in the national financialization processes. Before the crisis net financial assets had declined in 13 countries, while during the Great Recession this decline happened in only a few less countries (10). In the case of financial liabilities, the number of countries where there was an increase in their size fell from 17 to 16, and the number of countries that have recorded a rise in the financial assets declined from 18 to 16 countries.

These results show the large differences in the evolution of the financial balance sheets of Eurozone countries before and during the Great Recession. These differences, which confirm the hypothesis of the variegated process of financialization in the eurozone, stand out even more so when we analyse the net financial position of the national financial balance sheets and their evolution.

Between 1999 and 2008 only Belgium kept positive net financial assets, thereby maintaining a creditor position against the rest of the world. On the contrary, a debtor position occurred in 13 countries: Austria, Cyprus, Estonia, Finland, Greece, Ireland, Italy, Latvia, Lithuania, the Netherlands, Portugal, Slovenia, Slovakia, and Spain. Two countries, Germany and Luxembourg, moved from a net debtor to a net creditor position; finally, France and Malta changed from a creditor to a debtor position.

During the Great Recession, Belgium and Germany maintained their net creditor position, while Cyprus, Estonia, France, Greece, Ireland, Italy, Latvia, Lithuania, Portugal, Slovakia, Slovenia, and Spain maintained their net debtor position. Luxembourg went from a creditor to a net debtor position, and four countries (Austria, Finland, Malta and the Netherlands) went from a debtor to a creditor position.

All these results, however, may hide different performances at a sectoral level. Therefore, in the next subsections we will analyse how the sectoral financial balance sheets have evolved.

Financial Balance Sheets of Non-Financial Corporations

In the period 1999–2008, according to the changes registered in the financial balance sheets of non-financial corporations, the Eurozone countries gathered in five groups:

- Group 1: Austria and Luxembourg.
- Group 2: Belgium, Estonia, Ireland, Italy, Lithuania, Malta, Portugal, Slovenia and Spain.
- Group 3: Cyprus, France, Germany and Slovakia.
- Group 5: Finland, Greece and the Netherlands.
- Group 6: Latvia.

Therefore, between 1999 and 2008 the net financial assets of non-financial corporations increased in 9 countries (falling in 10 countries). For its part, the size of financial assets grew in 14 countries (falling in 5), and financial liabilities increased their size in 12 countries.

According to our previous definition, before the Great Recession there was a financialization process in 11 countries (those included in groups 1 and 2). Conversely, 4 countries (those included in group 3) faced a definancialization process. In this sense, it is striking that the two biggest Eurozone economies (France and Germany) registered a definancialization process before the onset of the crisis.

Since the year 2008, the Eurozone countries formed four groups:

- Group 1: Malta, the Netherlands, and Spain.
- Group 2: Austria, Belgium, Estonia, Finland, France, Germany, Greece, Ireland, Latvia, Luxembourg, Portugal, and Slovakia.
- Group 5: Italy and Lithuania.
- Group 6: Cyprus and Slovenia.

As a result, between 2008 and 2014 the net financial assets of non-financial corporations rose in 5 countries, declining in 14, and the size of financial assets and financial liabilities increased in 17 countries.

As opposed to the precedent period, no country during the Great Recession has faced a definancialization of the non-financial corporations

sector. Indeed, there was an increase in the size of the financial balance sheet of these corporations in 15 countries.

When we focus our analysis on the performance of the non-financial corporations in the Eurozone we can detect significant changes in the national financialization processes. If before 2008 the size of financial assets had declined in 10 countries, after 2008 this decline took place in 14 countries. Regarding financial liabilities, the number of countries where their size increased went from 12 to 17 countries; and the number of countries where the financial assets rose went from 14 to 17 countries.

In a similar way, 14 Eurozone countries changed in terms of their grouping. It is remarkable that the four countries that before the crisis registered a definancialization process have changed their grouping. In Cyprus there is a change from a rise in the size of net financial assets to a situation in which there is a decline in the net financial assets due to a decline in the size of financial assets (amounting to 10.1 percent of GDP) and a rise in the size of financial liabilities (+75.4 percent of GDP). However, in the other three countries (France, Germany, and Slovakia) there has been during the Great Recession a decline in the net financial assets of the non-financial corporations as a result of a larger size of financial assets (30.6 percent of GDP in France, 7.5 percent of GDP in Germany, and 4.3 percent of GDP in Slovakia) that is smaller than the increases recorded in the financial liabilities (45.3 percent of GDP in France, 17.2 percent of GDP in Germany, and 13 percent of GDP in Slovakia).

Financial Balance Sheets of Financial Corporations

In the period 1999–2008, the evolution of the financial balance sheets of financial corporations leads to the existence of three groups of countries:

- Group 1: Austria, Cyprus, Estonia, Germany, Greece, Italy, Latvia, Lithuania, Luxembourg, and Spain.
- Group 2: Belgium, Finland, Ireland, France, Malta, the Netherlands, Portugal, and Slovenia.
- Group 3: Slovakia

During this period net financial assets of financial corporations grew in 11 countries, declining in 8. On its part, the size of financial assets and financial liabilities increased in 18 countries, only declining in Slovakia. As a result of this performance, in the years previous to the Great Recession there was a financialization process in 18 countries, while only Slovakia faced a definancialization process.

After the onset of the Great Recession, the gathering of the Eurozone countries has changed markedly and, thus, in the period 2008–2014 we can find four groups of countries:

- Group 1: Finland. France, Greece, Ireland, Italy, and Slovakia.
- Group 2: Latvia, Luxembourg, Malta, Netherlands, and Spain.
- Group 3: Austria, Belgium, Cyprus, Estonia, Germany, and Slovenia.
- Group 4: Lithuania.
- Group 5: Portugal.

Thus, between 2008 and 2014 the net financial assets of financial corporations grew in 13 countries, falling in the remaining 6 countries; the size of financial liabilities increased in 12 countries, falling in 7, and the size of financial liabilities increased in 11 countries, falling in 8 countries.

It is evident that since 2008 there has been a change in the financialisation process of financial corporations in the eurozone countries. If before the onset of the crisis, the size of financial assets had only declined in one country, since 2008 this fall is registered in 7 countries, and while before the crisis the size of financial liabilities had only fallen in 1 country, since 2008 this decline has taken place in 8 countries.

We can also check that 15 out of the 19 Eurozone countries have changed their grouping. But the most remarkable fact is that since 2008 there has been a definancialization process in 7 countries: Austria, Belgium, Cyprus, Estonia, Germany, Lithuania, and Slovenia. In these countries there has been a combined decline in the size of financial assets (falling between 1.6 percent of GDP in Slovenia and 41.8 percent of GDP in Cyprus) and in the size of financial assets (whose fall ranges from 7 percent of GDP in Lithuania and 53.1 percent of GDP in Cyprus).

It is also important to emphasize that in the case of financial corporations many countries have registered a change in the sign of the financial position

of these corporations, leading to a substantially different performance during the Great Recession compared to that registered in the years 1999 to 2008. Between 1999 and 2008, financial corporations of France, Germany, Luxembourg, Portugal, Slovenia, and Spain kept a net creditor financial position, while in countries like Austria, Greece, Ireland, and Slovakia financial corporations maintained a debtor position. Moreover, four economies (Belgium, Finland, Malta, and Netherlands) went from a debtor to a creditor position, and five countries (Cyprus, Estonia, Italy, Latvia, and Lithuania) made the opposite change, that is, from a debtor to a creditor position. However, a widespread change of financial corporations to a net creditor position has been registered during the Great Recession. Between the years 2008 and 2014, financial corporations of Cyprus, Estonia, France, Germany, Italy, Luxembourg, Portugal, Slovenia, and Spain (9 countries) maintained a net financial creditor position, and another 6 countries (Austria, Belgium, Finland, Greece, Ireland, and Slovakia) went from a debtor to a creditor position. Only two countries (Malta and Netherlands) kept during these years a net debtor position, and two other countries (Latvia and Lithuania) went from a creditor to a debtor position.

Financial Balance Sheets of Households

Between 1999 and 2008, the evolution of the households' financial balance sheets mean that we can gather the Eurozone countries into four groups:

- Group 1: Austria, Luxembourg, and Slovenia.
- Group 2: Estonia, Ireland, Latvia Lithuania, Malta, and Portugal.
- Group 3: Germany.
- Group 6: Belgium, Cyprus, Finland, France, Greece, Italy, the Netherlands, Slovakia, and Spain.

During these 10 years net financial assets of households grew in 4 countries, declining in the other 9. On its part, the size of financial assets increased in 9 countries (declining in 10), and, lastly, the size of financial liabilities increased in 18 economies, with Germany being the only country where the households reduced their liabilities.

If we characterize the financialization process by the changes in the size of the financial balance sheets, then 9 countries (those included in groups 1 and 2) registered a financialization process before the onset of the Great Recession; only in Germany can we talk of the existence of a definancialization process.

We want to emphasize the similarities and differences existing between the sector of non-financial corporations and the households sector. In both cases the process of financialization came with deterioration in the net financial assets that affected 11 countries in the case of non-financial corporations and 15 countries in the case of households). However, while in the case of the non-financial corporations there was an increase in the size of financial assets (12 countries) and of financial liabilities (15 countries), in the case of households the size of financial assets only increased in 9 countries and the size of financial liabilities increased in 18 countries.

After the onset of the financial and economic crisis in 2008, there has been an abrupt change in the grouping of the Eurozone countries, with the result that in the period 2008 to 2014, there have been only two groups of countries:

- Group 1: Belgium, Cyprus, Finland, France, Greece, Italy, Luxembourg, Malta, Netherlands, Slovenia, and Slovakia.
- Group 5: Austria Estonia, Germany, Ireland, Latvia, Lithuania, Portugal, and Spain.

This change implies that, although in all Eurozone countries there was an improvement in the households' net financial assets, we can detect the existence of two different strategies in terms of the improvement of the households' financial positions. In the countries included in group 1, this improvement is the result of an increase in the size of financial assets that is larger than the increase of financial liabilities; however, in the countries included in group 5, the improved financial position of households is explained by the combined increase of financial assets and the fall of the size of financial liabilities.

Therefore, although in all the Eurozone countries there has been an increase in the size of households' financial assets, there is a deleveraging process of households only in 8 countries while the size of their financial liabilities has grown in 11 countries.

However, the existence of only two groups of countries in relation to the strategy to improve the households' financial position does not imply that within each group the changes recorded in the size of financial liabilities and assets are similar; rather, the opposite is the case. Thus, regarding the countries that are included in group 1, the minimum and maximum values of the changes recorded in the components of the households' financial balance sheets ranged in the case of net financial assets from 8.4 percent of GDP in Slovakia to 74.2 percent of GDP in Netherlands; in the case of financial assets, from 12.9 percent of GDP in Slovenia to 79 percent of GDP in Cyprus; and, finally, in the case of financial liabilities from 3.6 percent of GDP in Netherlands to 26 percent of GDP in Cyprus.

In the case of the countries included in group 5, these values oscillate for net financial assets between 20 percent of GDP in Austria and Lithuania, and 58 percent of GDP in Ireland; for financial assets between 14.3 percent of GDP in Estonia and 38.9 percent of GDP in Spain; and, finally, in the case of financial liabilities, between −1.4 percent of GDP in Austria and −24.3 percent of GDP in Ireland.

We wish to underline again the differences existing between the adjustment process that has taken place during the Great Recession of the financial balance sheets in the cases of households and non-financial corporations. In the case of the latter, in most countries (14 countries) there has been a deterioration in the financial position of non-financial corporations. However, in the case of households, the financial position of this group improves in all 19 euro economies. Moreover, only in 2 countries (Italy and Lithuania) has there been a decline in the size of the financial liabilities of non-financial corporations. On the contrary, in the case of households the decline in the size of their financial liabilities has occurred in 8 countries.

Financial Balance Sheets of General Governments

Between 1999 and 2008, the performance of the financial balance sheets of the Eurozone general governments has led to a gathering of the countries into five groups:

- Group 2: Austria, Latvia, and Luxembourg.
- Group 3: Cyprus, Finland, Malta, and the Netherlands.

- Group 4: Estonia, Lithuania, Slovakia, and Slovenia.
- Group 5: Belgium, Ireland, Italy, and Spain.
- Group 6: France, Germany, Greece, and Portugal.

As in the cases of private financial and non-financial sectors, the period before the onset of the crisis was characterized by a strong deterioration in the net financial position of general governments. Thus, there was a decline in the size of net financial assets in 11 countries (those included in groups 2, 4, and 6). The main reason of this process was the fall in the size of financial assets (which fell in 7 countries), because in 12 countries a fall in the size of financial assets was registered (countries belonging to groups 3, 4, and 5).

The onset of the financial crisis in 2007–2008 and the subsequent Great Recession has led to an enormous deterioration of the European public finances which has given rise to a widespread increase of fiscal imbalances (that is, fiscal deficits and outstanding public debt), due not only to the impact of the decline and the slowdown of economic activity on public budget balances through the working of the built-in stabilizers but also to the implementation of expansionary discretional fiscal policies. Although since the year 2010 in the European Union, in general, and in the Eurozone countries, in particular, there was a generalized change in the fiscal policy stance towards an adjustment of fiscal deficits. In most Eurozone countries the size of public debt has been growing; as a result, since the year 2008 the size of the public debt and the financial liabilities of general governments have increased in all the Eurozone countries with no exception.

But, besides the impact of the crisis on public finances and the consequence of the discretionary expansionary fiscal policies on public budget balances, financial balance sheets of Eurozone general governments have been deeply affected by bank rescues. In addition to their direct impact on non-financial public revenues and expenditures and on the public budget balances (Ferreiro et al. 2015, 2016b; van Riet 2010; Stoltz and Wedow 2010), the measures of support to trouble financial institutions have generated an increase of the size of financial assets of general governments, and, thus, this component of the financial balance sheets has increased in all eurozone countries.

In sum, as a result of this process, in the years 2008 to 2014, eurozone countries can be gathered in three groups:

- Group 1: Estonia and Finland.
- Group 2: Austria, Belgium, Cyprus, France, Germany, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Portugal, Slovakia, Slovenia, and Spain.
- Group 3: The Netherlands.

As a whole, there has been a deterioration of the net financial position of general governments in 17 euro countries, and only in Estonia and Finland has the financial position improved. The size of financial assets of general governments has increased in all euro governments, apart from The Netherlands. But the most characteristic feature of this process is that the financial liabilities of general governments have grown in all Eurozone countries.

Regarding the evolution of the net financial position of general governments, most countries (13 countries) have permanently maintained a net debtor position. This has been the case for Austria, Belgium, Cyprus, France, Germany, Greece, Ireland (with the only exception of the year 2007), Italy, Malta, The Netherlands, Portugal, Slovakia, and Spain. On the contrary, 3 countries (Estonia, Finland and Luxembourg) have recorded a net creditor position since 1999. Finally, Latvia, Lithuania, and Slovenia, which before 2008 had had a net creditor position, have registered a net debtor financial position since that date.

3.4 Financialization and Economic Activity in the Eurozone

Besides the analysis of the main determinants of the financialization processes, most studies (theoretical but also empirical) of this process have been focused on the analysis of the economic impact on financialization. Thus, a high number of studies have argued that the origins of the current financial and economic crisis must be found in the financialization process, and that, consequently, we cannot correctly understand

the origins and the consequences of the current Great Recession if we do not pay the necessary attention to the huge development of finances that has taken place in the last decades and the consequent larger size of financial activities and the unparalleled larger size of the financial sector (Detzer and Herr 2014; Hein et al. 2015; Hein and Dodig 2014).

Although the studies emphasize the existence of different, but simultaneous, transmission channels of financialization (Hein 2011), they all share the basic idea that the rising size and relevance of finances has given rise, as we mentioned in the introduction section, to a dramatic change in the decision-making processes and the allocation resources of all agents and sectors, mainly in the case of non-financial agents, in the case of both households and non-financial corporations.

As a result of these changes, the economic growth of the countries where an intense process of financialization has taken place would have been seriously damaged. On the one hand, corporate investment would have been negatively affected as a result of the decline in the own resources resulting of a corporate policy that favours, mainly in the case of larger corporations, the distribution of profits (dividends) instead of its allocation to increase productive investment. Moreover, productive investment would have also been damaged as a result of a generalized strategy, again mainly in the case of larger corporations, to allocate the rising resources obtained via external borrowing to the purchase of financial assets. On the other hand, the rising level of household indebtedness would have led families to increase their levels of consumption and to shrink, in a parallel way, private savings (Hein 2010, 2011).

Therefore, the final result of the financialization process would have been a break in the presumed positive nexus between economic growth and financialization (or, in other words, financial depth, financial development, and so on); and, thus, nowadays, mainly in the case of developed countries, the economies with the largest size of finance, the level (and growth) of the financial sector would have a negative impact on economic activity and economic growth (Arestis 2017).

Following this line of research, the objective of this section is to study whether the financialization process in the Eurozone countries has had an impact on the economic activity of these countries, and whether this impact would have changed due to the Great Recession.

We will analyse whether the changes in the size of financial balance sheets in the Eurozone economies have affected the relevant macroeconomic variables, namely, real Gross Domestic Product (GDP), total real gross fixed capital formation (GFCF), real gross fixed capital formation made by non-financial corporations, households' consumption and households' saving rate. Given that we are also interested in knowing whether the onset of the Great Recession has affected that relationship, we will analyse it in two different periods: the period before the crisis (years 1999 to 2008) and the period corresponding to the Great Recession (years 2008 to 2014).

In all the cases, we have used as independent explanatory variables the change measured as a percentage of the GDP of the size of financial assets, financial liabilities or net financial assets. Therefore, for each explanatory variable (X) we measure this change in the same way: $X_t - X_{t-n}$, where t represents the last year of each period and t–n represents the first year of each period. In the case of the period that takes place during the Great Recession the first and last year are the same for all the countries, that is, 2008 and 2014, respectively. However, in the case of the period before the Great Recession the first and the last year are the years 1999 and 2008, respectively, except for those countries for which the available data start at a later date. Thus, the first available year is different for Ireland and Slovenia (year 2001), Luxembourg (year 2002) and Latvia and Malta (year 2004).

In all this analysis, we have run cross-section regressions using OLS, where data used represent the change in the related variables of each of the 19 euro countries.

For each model we have run two kinds of regressions for the two periods analysed (1999–2008 and 2008–2014); namely, where i represents the corresponding eurozone country (19 countries-observations in total):

- $Y_i = \beta_0 + \beta_1 X_i + u_i$
- $Y_i = \beta_0 + \beta_1 X_i + \beta_2 X^2{}_i + u_i$

The first regression tries to test the existence of a linear relationship between the dependent variable and the independent variable (change of financial assets, change of financial liabilities, or change of net financial

assets). However, the second equation tries to test the existence of a non-linear quadratic relationship between the dependent and the explanatory variable.

With the estimation of a quadratic relationship we want to test the existence of a marginal increasing or decreasing impact of the financialization process on the economic activity, to be stricter, with the variable representing it. In this sense, we are trying to test the hypothesis defended by a number of recent contributions that argue that the current size of finances (or private debt) is excessive, having a negative impact on economic activity once the size of these debts overcomes a certain level or threshold (Arcand et al. 2015; Bouis et al. 2013; Dabla-Norris and Srivisal 2013; Law and Singh 2014).

Financialization and Real GDP

First, we have analysed whether the financialization process has had any impact on the economic activity of the Eurozone countries before and during the Great Recession. Specifically, we have tested whether the change (measured as a percentage of real GDP) of net financial assets, financial assets, or financial liabilities recorded for each period in the euro countries has had a significant effect on the evolution of the real GDP.

In this sense, the dependent variable represents the percentage change of the real GDP, measured according to the following formula: GDP_t–$GDP_{t-n}/GDP_{t-n}*100$. Data about real GDP come from the AMECO database. Regarding the independent variables, these are related to the changes in the main components of the financial balance sheet of Total Economy. We have run three regressions, one for each of the possible explanatory variables: the change in the size of net financial assets; the change of the size of financial assets; and the change in the size of financial liabilities.

All the regressions offer similar results. We have not found any significant relationship between the variation in the GDP and the change recorded in the net financial assets, in the financial assets or in the financial liabilities, neither in the period 1999–2008 nor in the years 2008 to 2014. This result takes place when we test the existence of a linear or a quadratic relationship between the dependent and the explanatory variable.

Therefore, the financialization process would have not been a determinant of the increase of the GDP before the crisis (between 1999 and 2008, the mean GDP increase in the Eurozone amounted to 33.2 percent, in parallel to an average increase of financial assets and liabilities of 383 and 386 percent of GDP, respectively, and a decline in the average size of net financial assets amounting to −2.8 percent of GDP) or the decline in the GDP that has taken place during the Great Recession (between 2008 and 2014, the average GDP decline in the Eurozone amounted to −1.2 percent, in parallel with an average increase of financial assets and liabilities of 401 and 402 percent of GDP, respectively, and a decline in the average size of net financial assets amounting to −0.5 percent of GDP).

Financialization and Gross Fixed Capital Formation of the Total Economy

Second, we have analysed whether the financialization process has had any impact on the the level of investment of Eurozone countries. Thus, we have again tested whether the change (measured as a percentage of real GDP) of net financial assets, financial assets, or financial liabilities recorded for each period in the euro countries has had a significant effect on the evolution of the investment measured in real terms.

In this sense, the dependent variable represents the percent change of the real gross fixed capital formation (GFCF) of the Total Economy, measured according to the following formula: $GFCF_t - GFCF_{t-n} / GFCF_{t-n} * 100$. Data about real GFCF (measured at 2010 prices) have been obtained from the AMECO database. Regarding the independent variables, these are related to the change in the main components of the financial balance sheet of the Total Economy. We have run three regressions, one for each of the possible explanatory variables: the change in the size of net financial assets; the change of the size of financial assets; and the change in the size of financial liabilities.

We have not found any significant relationship between the variation of the GFCF and the change recorded in the net financial assets, in the financial assets or in the financial liabilities, neither in the period

1999–2008 nor in the years 2008 to 2014. This result takes place when we test the existence of a linear or a quadratic relationship between the dependent and the explanatory variable.

Therefore, the financialization process would have not been a significant determinant of the increase of the investment before the crisis, when the average increase of total investment in the euro countries amounted to 54.5 percent, or of the decline in investment that has affected euro economies since 2008, during the Great Recession, when the average decline of investment in the Eurozone countries amounted to –19.6 percent.

Financialization and Gross Fixed Capital Formation of Non-Financial Corporations

The previous analyses show that the financialization process in the Eurozone countries has not been a significant determinant of the evolution of the GDP and the total GFCF. However, since we are dealing with the dynamics of the economic activity and the financial balance sheets of te Total Economy, these outcomes may hide a potential impact on the particular performance of individual sectors.

Therefore, in the following sections we will focus on the attention of the potential impact of financialization on the economic activity of private sectors, that is, households and non-financial corporations.

In the case of non-financial corporations, our analysis will test the potential impact of the changes in the main components of the financial balance sheets of non-financial corporations in the Eurozone countries (that is, the change measured as a percentage of the GDP of net financial assets, financial assets, and financial liabilities of non-financial corporations) on the investment made by this sector. Thus, the dependent variable in this case is the percent change of real gross capital formation made by non-financial corporations ($GFCF_t – GFCF_{t-n}/GFCF_{t-n}*100$).

Data on gross fixed capital formation of non-financial corporations have been obtained from the Eurostat. However, these data are at current prices. Therefore, we have transformed these nominal data into real values at 2010 prices using the Price deflator gross fixed capital formation of total economy obtained from the AMECO database.

Given that there are no available data of GFCF of non-financial corporations for Malta and Luxembourg, and we have data for the remaining 17 euro countries, we estimate relevant relationships only for the latter. Moreover, there are missing data for some countries, mainly in the period previous to the Great Recession. Therefore, for some countries the period prior to the Great Recession starts after the year 1999: Ireland and Slovenia (in 2001), Luxembourg (in 2002), Latvia, Lithuania and Malta (in 2004) and Greece (in 2006).

Regarding the period 1999 to 2008, there is no significant relation between the change in the size of real investment of non-financial corporations and the change in the size of net financial assets, financial assets, or financial liabilities of these corporations. This result implies that the financialisation of non-financial corporations between 1999 and 2008 (the average increase of financial assets and liabilities of non-financial corporations was +11.8 and −7.2 percent of GDP, with an increase in the average size of net financial assets amounting to 19 percent of GDP) would have not been a determinant of the average increase (+54.5 percent) of investments of non-financial corporations.

However, when we analyse the performance of the investment of non-financial corporations in the years 2008 to 2014 we have detected a significant impact on investment of non-financial corporations of the change of financial assets and liabilities.

Table 3.4 shows the results of the OLS estimations. During the Great Recession, investment of non-financial corporations declined by 15.3 percent in Eurozone countries. Column 2 shows the existence of a quadratic relationship between the change of investment and the change in the size of financial assets of non-financial corporations. The sign of the coefficients implies that the change of financial assets has a positive but decreasing effect on the change of GFCF of NFCs, with the inflection point being an increase of financial assets equivalent to 189.3 percent of GDP. This implies that above this figure, the rise of financial assets had a negative impact on GFCF of non-financial corporations; this only happens in Ireland, where the increase in financial assets amounted to 267 percent of GDP.

The sign and the values of the constant and the coefficients of assets imply that the increase in the size of financial assets has contributed to

Table 3.4 OLS Estimation Results. Dependent Variable: Change of Gross Capital Formation of Non-Financial Corporations (2008–2014)

Variable	ΔGFCF of non-financial corporations	ΔGFCF of non-financial corporations
Constant	–35.54 (0.000)	–23.52 (0.000)
Financial Assets	1.01 (0.001)	
Financial Assets^2	–0.002 (0.013)	
Liabilities		0.207 (0.000)
R^2	0.744	0.382
F-statistics	20.353 (0.000)	
Wald *F*-statistics		33.700 (0.000)
Durbin-Watson	2.15	1.81
Jarque-Bera statistics	0.433 (0.805)	3.703 (0.157)

p-values in parenthesis

compensate the declining trend in the investment of non-financial corporations. Indeed, the investment of non-financial corporations would have only grown in the countries where the financial assets of these companies had increased above 39 percent of GDP, something that only happened in Ireland and the Netherlands.

In the case of financial liabilities, the impact of this variable on the GFCF of non-financial corporations would have been positive, although the investment of non-financial corporations would have been positive only in those countries where the liabilities grew above 114 percent of GDP, which only happened in the case of Ireland (where the increase amounted to 308 percent of GDP).

Financialization and Private Consumption

In this section, we analyse the impact of financialization on households' economic activity. In this subsection we study the impact of the changes in the components of the financial balance sheets of households (that is, the change measured as a percentage of the GDP of net financial assets, financial assets, and financial liabilities of non-financial corporations) on private consumption. Thus, the dependent variable in this section will be the percentage change in real private consumption (C_t–C_{t-n}/ C_{t-n}*100).

Data on real private final consumption (2010 prices) of households have been obtained from the AMECO database. Given that the first available year for the households' financial balance sheets is 2001 for Ireland and Slovenia, 2002 for Luxembourg and 2004 for Latvia and Malta, for these countries the analysis covering the period before the Great Recession begins in these years.

During the Great Recession we have found no significant relationship between the change in the size of households' private consumption and the change in the size of net financial assets, financial assets, or financial liabilities of these agents. This result implies that the fall of private consumption registered between 2008 and 2014 (on average private consumption in Eurozone countries fell 2.1 percent in this period) cannot be attributed to the changes recorded in the households' financial balance sheet (in this period, financial assets rose by 31.1 percent of GDP, financial liabilities increased by 1 percent of GDP, and net financial assets rose by 30.1 percent of GDP).

However, when we have analysed the performance of private consumption in the years 1999 to 2008 we have detected a significant impact on consumption of the change in financial assets and liabilities.

Table 3.5 shows the results of the OLS estimations. Before the Great Recession, private consumption increased 32.7 percent in Eurozone countries, while households' financial assets declined on average by 3.4 percent of GDP. Column 2 shows the existence of a quadratic relationship between the change of consumption and the change in the size of financial assets of households. The sign of the coefficients implies that

Table 3.5 OLS estimation results. Dependent Variable: Change of Private Consumption of Households (1999–2008)

Variable	ΔPrivate Consumption	ΔPrivate Consumption
Constant	27.08 (0.000)	12.44 (0.235)
Financial Assets	0.70 (0.023)	
Financial Assets^2	0.01 (0.036)	
Liabilities		0.85 (0.026)
R^2	0.30	0.26
F-statistics	3.430 (0.057)	5.885 (0.026)
Durbin-Watson	2.074	2.18
Jarque-Bera statistics	2.040 (0.360)	5.845 (0.053)

p-values in parenthesis

the change of financial assets has a positive and increasing effect on the change in private consumption. Therefore, before the Great Recession the declining rise of households' financial assets would have contributed to moderate the growth in private consumption.

However, the evolution of households' financial liabilities would have had a larger impact on private consumption. On average, households' financial liabilities grew 23.9 percent of the GDP in this period, what would have increased private consumption by 20.3 percent. This result reinforces the idea that before the Great Recession private consumption was fuelled by increased household borrowing.

Financialization and Households Gross Saving Rate

Besides the impact on private consumption, we have also analyzed whether households' financialization process may have affected households' savings. Therefore, in this subsection we have analysed the impact of the changes in the components of the financial balance sheets of households (that is, the change measured as a percentage of the GDP of net financial assets, financial assets, and financial liabilities of non-financial corporations) on the households' saving rate. Thus, the dependent variable has been the absolute variation of households' gross saving rate ($S_t - S_{t-n}$).

Data on national savings rates have been obtained from the AMECO database, and the variable used has been the households' gross saving rate, that is, the gross savings as a percentage of the households' gross disposable income.

Data on households' gross saving rate is not available for Malta, and, therefore, we only have 18 observations or countries. Furthermore, data for Luxembourg are only available since the year 2006. As a result, the first year of the period before the Great Recession is 1999, with the exception of Ireland and Slovenia (starting in 2001), Latvia (starting in 2004), and Luxembourg (starting the year 2006).

Before the year 2008, we have only found a significant direct relationship between the change in the households' gross saving rate and the change in net financial assets (see Table 3.6). Between 1999 and 2008 gross saving rates in the Eurozone fell, on average, by 0.4 percentage points.

Table 3.6 OLS estimation results. Dependent variable: Change of Households' Gross Saving Rate (1999–2008)

Variable	ΔGross saving rate
Constant	0.892 (0.437)
Net Financial Assets	0.05 (0.059)
R^2	0.205
F-statistics	4.130 (0.059)
Durbin-Watson	2.76
Jarque-Bera statistics	6.474 (0.039)

p-values in parenthesis

Table 3.7 OLS Estimation Results. Dependent Variable: Change of Households' Gross Saving Rate (2008–2014)

Variable	ΔGross saving rate
Constant	−0.13 (0.959)
Assets	−0.115 (0.084)
AR (1)	0.171 (0.533)
R^2	0.23
F-statistics	2.046 (0.166)
Durbin-Watson	1.82
Jarque-Bera statistics	1.354 (0.508)

p-values in parenthesis

Households' net financial assets declined on average by 25.6 percent of the GDP. Therefore, by itself, the decline in the households' net financial assets would have generated a fall in the savings rate amounting to 1.3 percentage points (higher than the registered fall), which can give us an idea of the significant impact of the decline of household's net financial wealth on the savings rate.

However, when we analyse the determinants of the change in gross saving rate during the Great Recession, the only significant relationship is with regard to the change of households' financial assets.

Table 3.7 shows the result of the OLS estimation. During the Great Recession, only the change in the size of financial assets had a significant impact on the change of households' gross saving rate. According to this estimation, the larger size of financial assets (on average, they grew by 30.4 percent of the GDP) would have led to a decline in the gross saving rate in the years 2008 to 2014 (on average, households' gross saving rate fell 3.6 percentage points)

3.5 Summary and Conclusions

The analysis of size and the evolution of the financial balance sheets in the Eurozone countries confirms the hypothesis of a variegated financialization process. The analysis of the performance of the financial balance sheets of the Eurozone countries shows the existence of significant differences among countries. These differences arise not only when we have analysed the financial sheets of the total economy but also when we have analysed the performance of the different sectoral financial balance sheets.

Moreover, what is really important to confirm is the existence of a variegated financialization process; this is due to the fact that these differences have increased during the last decades.

The existence of these differences arise again when we have studied the performance of the total and sectoral financial balance sheets both in the years previous to the onset of the Great Recession and in the subsequent years, that is, since 2008. In this sense, although there are, in some sectors at least, common trends with regard to the changes registered before and after 2008 in the net financial assets; however, we have been able to detect strong differences related to the main determinant of this change, that is, whether changes in net financial assets are mainly explained by changes in financial assets of by changes in financial liabilities.

Initially, it could be expected that given the structural differences between the Western and the Central and Eastern countries that joined the Eurozone after the creation of the European Monetary Union, the analysis shows that the groupings resulting of the changes in the net financial assets (at a national and at a sectoral level) include in most cases 'old' and 'new' Eurozone countries. Therefore, differences in the level of development, and even in the dimension of the financialization process, exist between and within old and new countries.

Finally, the empirical analysis carried out in the last section has shown that we cannot argue that the financialization process (before and during the Great Recession) has had any impact on the level of general economic activity. In other words, we cannot say that the changes in the size of the national financial balance sheets and in the size of their component have been a significant determinant of the changes in the gross

domestic product and the total gross fixed capital formation. However, the different estimations show that financialization has affected the economic decisions made in relation to private non-financial assets, that is, by non-financial corporations and households. Thus, the change in the size of financial assets and liabilities has influenced the performance of gross capital fixed formations of non-financial corporations since the year 2008. In the case of households, in the period 1999–2008, the change in the size of financial assets and liabilities affected the performance of private final consumption. Finally, the change in the size of net financial assets was a determinant of the changes in the gross saving rate before the recession, while the change of financial assets has affected the performance of gross saving rates since the year 2008.

This result does not necessarily imply that the financialization process has not had a true impact on the economic activity of the economies of the Eurozone and on their corresponding sectors, in the periods and variables for which we have not found a statistically significant relation. To reach a clear-cut conclusion about this hypothesis, we should make an individual study of each Eurozone economy. However, this analysis is outside the scope of this paper.

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4

Achieving Financial Stability and Growth in Africa

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Abstract This paper analyzes how financial systems and their regulation in African low-income countries (LICs), still in their early stages of development, could be shaped to achieve simultaneously the goals of financial stability and inclusive growth. This draws on understanding the features of financial systems in LICs, their challenges and relative strengths, and on lessons arising from the global financial crisis, as well as previous experiences of crises in emerging economies, which tended to arise from excessively liberalized and little regulated financial systems. The paper draws on literature surveys and in-depth case studies of Kenya, Nigeria, Ghana, and Ethiopia. It concludes that although financial sectors may need to be deepened in African LICs, to improve access to credit by smaller companies and poorer people, the pace of expansion should be fairly slow, to avoid developmentally costly crises. Furthermore, public development banks need to play a bigger role for funding structural transformation.

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4.1 Introduction[1]

Roles of Finance

The aim of this paper is to see how the financial systems and their regulation in African low-income countries (LICs), still in their early stages of development, could be better shaped to achieve simultaneously the goals of financial stability and inclusive growth. This draws on an understanding of the features of financial systems in LICs, both their challenges and their relative strengths, and on possible lessons arising from the global financial crisis, as well as previous experiences of crises in emerging economies, which tended to arise from excessively liberalized and little regulated financial systems.

Finance is crucial for development. Without a well-functioning financial system that channels finance to the right places in the right form, inclusive growth is impossible. This is not just a question of the quantity of finance, although this is extremely important, but also what we might call its *quality*. Different types of economic activities (and actors) require different types of finance in terms of cost, maturity, and risk characteristics. The more financial systems are able to meet these needs, the more likely they are to be supportive of inclusive growth. As well as its potential to foster growth, however, the financial sector, especially if very liberalized and poorly or insufficiently regulated, can also generate instability and

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crises, with devastating consequences for development. Increasing understanding of the role that financial structure and regulation can play in balancing these objectives in low-income countries is the aim of this paper.

More broadly, the international community has defined sustained and inclusive growth as its main economic aim, as reflected, for example, in the UN adopted Sustainable Development Goals. At a national level, governments are broadly committed to the same goals. Additionally, in a globalized world economy, countries and enterprises need to be internationally competitive to sustain such growth.

A well-functioning financial sector, both national and international, needs to play important roles to achieve these aims. Indeed finance has been compared to the blood circulating in the body, enabling it to live and function well.

To achieve this key positive role, the financial sector needs to encourage and mobilize savings (for example, by protecting the safety of savings), intermediate these savings at low cost, ensure savings are channeled into efficient investment, as well as helping manage the risks for individuals and enterprises. Because the financial sector has such important effects throughout the economy it also needs to adhere to a key principle of the Hippocratic Oath that medical doctors swear to, which is to do no harm to the rest of the economy. Therefore there should be as few and as small crises that stem from the financial sector, as these have huge costs, both fiscal and on growth, employment and investment.

Liberalization of Finance and Its Impact

It could be argued that the financial sector performed these functions relatively well both in developing and developed countries in the post-World War II period. Domestic financial sectors were relatively small and fairly tightly regulated, partly because after the Great Depression a number of regulatory measures were applied, including the Glass–Steagall Act which separated investment and commercial banking as well as the existence of requirements for liquidity. At the same time, capital accounts were relatively closed, especially in developing countries. Developed countries liberalized their capital accounts, but most did so very slowly (Griffith-Jones et al. 2003).

However, from a policy perspective there were concerns that "financially repressed" systems, as they were then called, did not deliver sufficient finance to important sectors at low enough cost and at long enough maturity. From a more theoretical perspective, the idea that financial markets were efficient encouraged financial liberalization, with either light or no regulation. This covered both domestic and external liberalization. Latin America was a first mover on liberalization in the late 1970s, especially in the Southern Cone. This process was followed by frequent and costly crises, including the major Latin American debt crisis, which led to the so-called "lost decade" in terms of growth and development. Diaz Alejandro (1985) already then perceptively synthetized this as: "Good-bye financial repression, hello financial crisis." Increasingly frequent crises in different parts of the developing and emerging world followed, including the East Asian crisis, which involved some of the most successful developing countries.

The idea that these crises were transitory problems, which would be overcome once these financial markets matured and deepened (and became more like those of the developed countries, especially the US and the UK ones) was profoundly challenged when a major crisis hit the developed countries. This had started in 2007 in the USA, which had the most liquid and deepest financial market in the world, before spreading to the other developed area in the world, the European Union, and from there on to the rest of the world.

Furthermore, increased sustainable access to credit at low cost did not seem to improve as expected as a result of financial liberalization, especially for SMEs and for long-term investment (e.g., in infrastructure). Indeed, during and after crises, credit channels became blocked, especially with regard to long-term credit to the private sector. The procyclical nature of domestic finance, as well as of capital flows, became extremely evident.

An early insight on why liberalized financial and poorly regulated financial markets can be particularly damaging, and to a much greater extent than the liberalization of other markets, comes from Stiglitz (1994), who argues that market failures in financial markets are likely to be endemic as those markets are particularly information-intensive, thus making information imperfections and asymmetries as well as

incomplete contracts (Stiglitz and Weiss 1981) far more important and disruptive than in other economic sectors. Therefore, in important parts of financial markets, market failures tend to be greater than government failures. In such cases, government interventions are more desirable than in other sectors (for example, via the regulation of domestic financial markets and banks, as well as the management of the capital account, but also via the creation of public development banks), if their benefits outweigh their costs.

This approach to finance can be consistent with far freer markets in the rest of the economy, in sectors where markets are more efficient than governments. Indeed, it can be argued that the prevalence of market failures in financial and banking markets makes sufficient financial regulation a key precondition for the successful operation of the market in the rest of the economy. Furthermore, the gaps in private financial markets, for example in the provision of sufficient long-term finance, essential for structural transformation(especially but certainly not only in LICs), makes a strong case for the need of having well-run public development banks, that can provide such funds.

Boom–Bust in Capital Flows

A key market imperfection in the operation of financial markets, basically across the board, is the tendency to "boom and bust", thoroughly analyzed in historical terms in the book by Reinhart and Rogoff (2011). Building on the theoretical tradition of Keynes (1936) and Minsky (1977), Kindleberger (1978) had earlier developed an approach, which considers financial crises as a response to previous excesses. Such excesses seem clearly far greater in financial and banking markets that are more liberalized and not properly regulated. An interesting insight on private capital flows is provided by the IMF (2011), which gives evidence that financial market volatility has increased over time and that it has spread to transactions and flows which are generally considered to be less volatile (such as foreign direct investment). The latter occurs, for example, due to the development of derivatives, which are often used initially by foreign investors to hedge their exposure, but then moving on to use derivatives for more speculative activities.

In the case of 'booms and busts' of capital flows to developing and emerging economies, this was first seen in the post-World War II era in a major way in Latin America, starting in the late 1970s and ending in the major debt crisis of the 1980s, called the 'lost decade' to development. This pattern was characterized by Ffrench-Davis and Griffith-Jones (1994) as surges and reversals of capital flows; more famously, these reversals were called 'sudden stops', by Guillermo Calvo and his associates. Calvo et al. (1993) showed that an important part of the surge was being caused by factors external to the region, especially the level of US interest rates. Calvo (2013) later described how this paper and its main conclusions were challenged, particularly at the IMF, who then attributed such flows only, or mainly, to 'good fundamentals' in the countries, and did not contemplate the role of global capital markets and their imperfections in the origin of major capital flows surges and reversals. The IMF has, however, increasingly accepted the role of international capital market imperfections in generating boom–bust cycles of capital flows and has begun—especially more recently—to draw important policy implications from this experience, as discussed below.

As Devlin et al. (1994) argued, an important part of the explanation of both the surges, and the subsequent reversals, were due to intrinsic features on the 'supply side' of capital flows. This included institutional features, such as very short-term incentives to key actors, like the internationally active pension and mutual funds as well as the investment bankers who contributed to herding behavior (for more detailed analysis, see Griffith-Jones 1998). There were—and still are—many such institutional features which contribute to this pattern of capital flows, such as the pro-cyclical methodologies and behavior of rating agencies (see Reisen 2003; Goodhart 2010).

It is interesting that there is a recent econometric literature showing that financial crises are often preceded by booms of capital flows (for example Agosin and Huaita 2012; Borio 2012). In the case of Latin America, net capital flows during the pre-1980s debt crisis years (1977–1981) reached 4.5 percent of GDP annually (Ffrench-Davis and Griffith-Jones, op. cit.). It is important to stress a somewhat neglected fact that capital flows (in this case mainly intra-European ones) have played a major role in the origins of the recent European sovereign debt crisis. Indeed, it is not often

emphasized that in Europe capital flows were numerically larger than in Latin America. Thus, in Greece, the cumulated capital flows grew from around 30 percent of GDP in early 2002 to around 80 percent of GDP in early 2008 (almost 10 percent of capital flows as a proportion of GDP annually). In Spain, this stock grew from just over 20 percent of GDP in early 2002 to 60 percent in mid-2008, around 7 percent of capital flows as a proportion of GDP annually, with similar increases reported for Portugal (Pisani-Ferry and Merler 2012, based on Eurostat data).

From this comparison, it can be seen that capital flows were, on average, higher to the periphery European countries during the 2002–2008 years than they were to Latin America in the 1977–1981 pre-debt crises years. These massive capital flows were accompanied in Europe, as they had been previously in Latin America, by very low spreads as lenders and investors massively underestimated risk. As crises started in both cases, spreads either shot up, often to unsustainable levels, or credit rationing occurred so that countries became unable to raise new funds or loans. These experiences are highly relevant for African LICs, which had experienced a major surge of lending in the early 2010s, accompanied again by relatively low spreads; unfortunately, such lending has started to fall, and,-above all- the spreads to rapidly increase.

Key Features of African LICs' Financial Sectors

Returning to the main topic of this paper, African LICs, these countries have the greatest need for financial systems that can support inclusive growth. In 2013, aggregate per capita income for LICs was US$722, compared with US$4814 in middle-income countries (MICs), and US$39,116 in high-income countries (HICs) (Table 4.1).[2]

Table 4.2 shows that just 12.5 percent of people in LICs have deposit accounts at commercial banks, compared with more than 50 percent in MICs. The figures for high-income countries are close to 100 percent. These differences are reflected in the number of bank branches, which

[2] Current US$. Source: World Bank's World Development Indicators (WDI).

Table 4.1 Arithmetic Average Financial Depth Indicators by Income Group (2013)

	LIC	MIC	HIC
Private credit by deposit banks to GDP (%)	18.54	41.19	101.87
Financial system deposits to GDP (%)	26.70	45.93	93.32

Source: WDI

Table 4.1 describes average financial sector depth by income group, highlighting how the total size of the financial sector relates to income level of countries, and the scale of financial sector development required in LICs

Table 4.2 Average Financial Access Indicators by Income Group (2011)

	LIC	MIC	HIC
Bank branches per 100,000 adults	3.62	17.03	32.67
Depositors with commercial banks (per 1000 adults)	124.9	504.9	–

Source: WDI

are five times greater in middle-income to low-income countries, and ten times greater in HICs.

While credit is scarce in countries at lower levels of income, it is also expensive. As shown in Table 4.3, average lending-deposit spreads in LICs are nearly 15 percent, compared with 7.65 percent and 4.44 percent in MICs and HICs, respectively (we return in some detail to this issue below).

It is unlikely that these differences simply reflect greater risks. If this were the case we would expect to see a roughly similar level of profitability across country income groups. Instead, Table 4.3 shows that the average profitability of banks is much higher in lower-income countries. Returns on both assets and equity are roughly three times higher in LICs than in HICs.

Table 4.3 Average Financial Sector Profit and Spread Indicators by Income Group (2013)

	LIC	MIC	HIC
Bank return on assets (% after tax)	2.15	1.40	0.80
Bank return on equity (% after tax)	19.17	13.04	6.20
Bank lending-deposit spread (%)	14.87	7.65	4.44

Source: World Bank Global Financial Development Database (GFDD)

As well as risk, higher spreads could be because of higher costs. As shown in Table 4.4, overhead costs are far higher as a share of assets, but the difference is small when total costs are compared to income.

Conventionally, it is argued that excessive spreads (and profits) result from a lack of competition. Two measures used to measure competitiveness are shown in Table 4.5. These results appear less conclusive. While bank concentration is higher in LICs than MICs, there is little difference with regard to high-income countries. Other indicators also suggest that competition is somewhat lower in LICs, but the orders of magnitude are unclear and competitiveness in HICs is not generally higher than that in MICs. Furthermore, as reported in the case studies, though the number of banks has increased significantly in recent years, in countries like Ghana, spreads have hardly fallen.

To summarize this section, compared with countries at higher levels of income finance is more scarce in LICs, but also more expensive. Financial intermediaries are less efficient, but also much more profitable, and competitive pressures may be less. Financial exclusion remains the norm for most

Table 4.4 Average Financial Efficiency Indicators by Income Group (2011)

	LIC	MIC	HIC
Bank cost to income ratio (%)	60.99	56.27	55.52
Bank overhead costs to total assets (%)	5.54	3.82	2.07

Source: GFDD

Table 4.5 Average Financial Competitiveness Indicators by Income Group (2012)

	LIC	MIC	HIC
Bank concentration (%)[3]	75.74	66.06	74.29
H-statistic[4] (Closer to 1 implies greater competition)	0.46	0.63	0.64

[3] The assets of three largest banks as percentage of total banking assets.

[4] "A measure of the degree of competition in the banking market. It measures the elasticity of banks revenues relative to input prices. Under perfect competition, an increase in input prices raises both marginal costs and total revenues by the same amount, and hence the H-statistic equals 1. Under a monopoly, an increase in input prices results in a rise in marginal costs, a fall in output, and a decline in revenues, leading to an H-statistic less than or equal to 0. The closer the H-statistic is to 1, therefore, the greater the implied competition." (GFDD, Database explanatory notes).

people. The scope for well-managed financial sector development is thus very large in LICs. The potential for this to contribute to inclusive growth is similarly large. The potential risks are also significant, however. This is evidenced by the numerous and costly crises that have occurred in recent decades, both in emerging and in high-income economies. Sub-Saharan African LICs have suffered very few banking crises in the last decade, but this does not imply that there is any room for complacency, especially if financial sectors grows significantly and fast. There is no reason why Sub-Saharan LICs should be any different from other regions, unless careful prudential measures are taken and the pace of financial liberalization is controlled.

A difficult balancing act is required, therefore. Financial sector development is crucial for inclusive growth, but it also brings greater risks of instability and crises. Effective regulation, as well as prudent liberalization, is the key to achieving and maintaining this balance. There is a need to better understand how regulation in LICs should be designed to balance inclusive growth with financial stability. To understand this, we first briefly review the literature.

The following part of the paper draws on four detailed case studies, which were part of the ESRC/DID project. These explored how key issues of financial regulation, inclusive growth, and stability manifest in different country contexts. The studies were undertaken in Ethiopia, Ghana, Kenya, and Nigeria. The country studies show that, although all in the early to middle -stages of financial sector development, their financial systems already differ significantly from each other. Ghana and Kenya have systems with open capital accounts, which are dominated by private banks. Nigeria is a large, oil-based economy, with a more sophisticated financial system and domestic banks penetrating other African markets. Kenya also has a large number of banks in neighboring countries. Ethiopia has a heavily regulated bank-based financial sector in the early stage of development, with a large (though decreasing) role for government-owned banks—including a large public development bank—and restricted capital account opening. These differences are partly due to previous policy choices, and partly because initial conditions, such as economic structure, are different as well.

Despite these large differences, there are also similarities. The lessons we can learn from these national differences and similarities are distilled

below. Before doing so, however, we first recap the key findings from the general analysis and a review of the literature. After examining the most important results from the country case studies, the paper concludes with some policy recommendations and suggestions for future research.

4.2 Key Issues Arising from the Literature

For the issues of financial stability referred to in this paper, a significant event in recent times was the financial crisis of 2007/8. Most refer to this as the 'global financial crisis', while others—more accurately—term it the 'North Atlantic' financial crisis. The latter description captures the fact that the crisis emanated from the USA, spread to Europe, and resulted largely from the practices of US and European financial institutions. The former description captures the fact that the effects of this crisis have been global, though unevenly distributed. This crisis followed many previous crises in the developing and emerging economies, which had become so frequent after financial systems were liberalized.

As well as its financial and economic impacts, the 2007/2008 crisis has had other global effects, notably on academics', policymakers' and regulators' views with regard to financial sector development in general, and financial regulation in particular. Concerning structure, the financial institutions, mechanisms, and markets that developed in the world's major financial centres could no longer be viewed always as an example to which developing countries should aspire. Similarly, the 'sophisticated' risk-management practices of these financial centres proved to be ineffective at best, and highly damaging at worst, while the 'light-touch' regulation that accompanied these sophisticated techniques had disastrous consequences. For both financial sector structures and regulation, therefore, policy-makers in countries at all levels of development have had to think again.

At a broad level, the questions that arising from the studies include: (a) what is the desirable size and structure of the financial sector in African countries to maximize its ability to support the real economy? And (b) what are the desirable paths of development of the financial sector in Africa to help it maximize its contribution to growth, considering the features of African countries and lessons from recent crises?

The traditional positive link between deeper as well as larger financial sector and long-term growth, which began in the literature with Bagehot and Schumpeter, but then was reflected in quite a large part of the empirical literature, such as Levine (2005), is being increasingly challenged. Earlier authors like Easterly et al. (2000) had presciently suggested that financial depth (measured by private credit to GDP ratio) reduces volatility of output up to a point, but beyond that, it actually increases output volatility as well as decreases output growth. More recently, a number of papers are showing an inverse relation between size of financial sector and growth, especially beyond a certain level of financial development, which is estimated at around 80–100 percent of private credit to GDP. Thus, Bank for International Settlements (BIS) economists based on empirical work reach the following conclusions, which challenge much of earlier writing:

> "First, with finance you can have too much of a good thing. That is, at low levels, a larger financial system goes hand in hand with higher productivity growth. But there comes a point, where more banking and more credit lower growth. Secondly, looking at the impact of growth in the financial system—measured in employment or value added—on real growth, they find clear evidence that faster growth in finance is bad for aggregate real growth. This implies financial booms are bad for trend growth. Hence, macro prudential or counter-cyclical regulation, discussed below, is important." (Cecchetti and Kharroubi 2012, p. 5)

Finally, in their examination of industry-level data, they find that industries competing for resources with finance are particularly damaged by financial booms. Specifically, manufacturing sectors that are R&D-intensive suffer disproportionate reductions in productivity growth when finance increases.

Similarly, an IMF Discussion Paper (IMF 2012a) suggests empirical explanations for the fact that large financial sectors may have negative effects on economic growth. It gives two possible reasons. The first has to do with the increased probability of large economic crashes (Minsky 1977; Kindleberger 1978; Rajan 2005) and the second relates to the potential misallocation of resources, even in good times (Tobin 1984).

De la Torre and Ize (2011) point out that 'Too Much Finance' may be consistent with positive but decreasing returns of financial depth, which, at some point, become smaller than the cost of instability. It is interesting that the IMF Discussion paper (IMF 2012a) results are robust to restricting the analysis to tranquil periods, confirming that the 'Too Much Finance' result is not only due to financial crises and volatility, but also misallocation of resources.

It is also plausible that the relationship between financial depth and economic growth depends, at least in part, on whether lending is used to finance investment in productive assets or to feed speculative bubbles. Not only where credit serves to feed speculative bubbles—where excessive increases can actually be negative for growth—but also where it is used for consumption purposes as opposed to productive investment, the effect of financial depth on economic growth seems limited. Using data for 45 countries for the period 1994–2005, and Beck et al. (2011) and (2012) show that enterprise credit is positively associated with economic growth, but that there is no correlation between growth and household credit. Given that the share of bank lending to households increases with economic and financial development and household credit is often used for consumption purposes whereas enterprise credit is used for productive investment, the allocation of resources goes some way towards explaining the non-linear finance–growth relationship. In African countries, only a small share of bank lending goes to households. However, as financial sectors and economies grow, this will change, as has been the case in South Africa.

Rapidly growing credit to households—even though desirable and potentially welfare-enhancing when strengthening reasonable levels of domestic demand and financial inclusion, in a sustainable way—might, however, cause financial instability, as well as harming poorer people, if not regulated prudently. Excessive lending to the construction sector is another important source of financial instability, particularly when it creates a housing bubble.

As pointed out above, recent research, for example at the Bank of International Settlements and at the International Monetary Fund, estimates the most desirable range for the scale of the financial sector to be between 80–100 percent of private credit to GDP. This is about the

average level of HICs today, double that for MICs, and five times the average level in low-income countries. Therefore this link is less relevant for LICs than for countries with higher incomes. However, the link has some relevance for countries at all income levels for three reasons.

First, knowing that the expansion of the financial sector begins to constrain growth beyond a certain point allows developing country policymakers to take a long-term view of financial sector development. Second, income-group averages mask wide variations. While the average figure for HICs for the private credit to GDP is around 100 percent, the highest is 284 percent%. For LICs the highest level is 50 percent. Although the 'limit' remains above what exists in any LIC, the lower end of the range (i.e., 80 percent) is not so far away for some LIC countries. LIC country policymakers need to note this.

The third reason why this matters is that the optimal size of the financial sector will not be the same for all countries. A relatively small financial sector providing affordable and appropriately structured finance to the real economy will be more developmentally beneficial than a large financial sector focused on trading esoteric financial products. Credit to enterprises seems to have greater growth impacts than credit to households. This may be more the case in LICs which may suffer more from supply constraints than demand constraints. As the economy develops, and becomes more diversified, this may change. The composition of the financial sector is an important determinant of its activities, and policy and regulation have a major role to play in helping to shape this composition.

More broadly, of relevance for growth is thus the link between the structure of the financial sector and growth. The IMF in its Global Financial Stability Report (IMF 2012b) has interesting empirical analysis of the relationship between the structure of the financial sector and economic growth, as well as the volatility of this growth and financial stress. This is a fairly understudied area, and one which has hardly been applied to LICs. The preliminary empirical results of the IMF report suggest that cross-border connections through foreign banks may during crises be associated with instability, though their role may be more beneficial in normal times.

4.3 Access to Credit in African LICs

Crucial in the context of policymaking and research on finance in Africa is the extent to which the findings on the relationship between the structure and size of the financial sector and growth in more developed economies are relevant for and apply to African LICs because their financial systems are markedly different. In particular, these countries' banking systems are small in absolute and relative size, many of them reaching the size of mid-sized banks in high-income countries. Beck et al. (2011) report, for instance, that if measured in relative size based on the claims on the private domestic non-financial sector to GDP (private credit), the median for African countries as a whole (i.e., including North African countries) was 19 percent in 2009, while it was 49 percent for non-African developing countries. African financial sectors also show that levels of financial intermediation and access to financial services have remained limited for large segments such as SMEs, the agricultural sector or poor households. Many of those use informal financial services, which may be far more expensive.

Given the importance of SMEs in creating employment, the lack of credit supporting their activity in African financial systems is a major drawback for development. International financial indicators show that African businesses in general are disadvantaged due to less access to finance than competitors in other regions. Concurrently, SMEs enjoy particularly poor access to sources of finance, leaving them with internal cash flow as main source for investment finance. As a consequence, enabling African SMEs to have better access to financing sources has the potential to strengthen and accelerate growth if done on sustainable grounds and at reasonable cost, under adequate regulation.

The obstacles African SMEs experience in their domestic financial systems are mainly concentrated around the insufficient support by banking institutions, as well as lacking alternative sources of finance. Therefore, recent developments of deepening African financial markets might help SME growth if financial resources are successfully and sustainably channelled into this segment. International indicators such as domestic analysis via enterprise surveys, by company size, support the view that African SMEs have limited access to finance. However, these analysis tend to

neglect an analysis of creditworthiness of these companies, which may be a key explanatory variable in some cases for their limited access to credit.

Sub-Saharan African businesses and entrepreneurs have more difficulties in accessing finance, in comparison to the average for all countries. For a more detailed assessment of the ability of firms to have access to finance, the percentage of small, medium-sized and large firms that have a bank loan or a credit line can be useful. Sub-Saharan African small and medium-sized firms have poor access to finance when compared to the situation in other developing regions (only 17 percent of them do, as opposed to 40 percent in Latin America, and 32 percent in East Asia), performing only better than Middle East and North Africa region, according to World Bank data . This analysis of access to credit by firm size is taken further below for some Sub-Saharan African countries, by looking at firms of different sizes and the their ability to have a bank loan or a credit line.

In general, between 60 percent and 70 percent of SMEs in Sub-Saharan Africa reportedly need loans, however only 17 percent of small and 31 percent of medium-sized firms actually have access to finance. As a consequence, firms in Sub-Saharan Africa have to finance a high proportion of investment through internally generated cash flows (82 percent among small Sub-Saharan African firms, 78 percent amongst medium-sized firms and 72 percent amongst large firms, according to World Bank data).

Unsurprisingly, according to the World Bank, 48 percent of small enterprises and 42 percent of medium-sized enterprises in Sub-Saharan Africa have identified access to finance as a major obstacle to their business activities. This is an extremely high proportion, though some caution should be expressed, in that only creditworthy—and not all—SMEs should be granted credit.

4.4 The Structure of Financial Sectors and the Pace of Growth of Finance

Returning to the issue of structure of the financial sector, as it relates to categories of financial institutions, Griffith-Jones et al. (2016) discuss the potential importance of public development banks as part of this mix

as one of the insights that have been 'rediscovered' since 2008. The crisis showed how development banks could play a crucial counter-cyclical role, stepping in when private finance dried up. This prompted a broader reassessment of their record and potential. Once common in many countries, the record of development banks has not always been positive. Following a series of influential studies linking government-owned banks to lower growth, many development economists assumed they were a thing of the past. Theoretically, this reflected a very neoclassical view of finance, which believed almost ex ante that private finance was superior to public finance, without much review of empirical evidence.

But this was never true. Development banks have been central to the growth of large emerging economies (e.g., Brazil, India, and China), and remain integral to the financial landscape in Germany. As well as playing a counter-cyclical role, these institutions can help provide the long-term 'patient' finance, that is key to the development process, but which the private sector rarely provides at the scale needed.

Furthermore, development banks may be valuable for funding structural transformation, for example towards a more sustainable (in the environmental sense) and a more inclusive economy; public development banks, in both developing and developed economies, can play a key role for example in the transition to more renewable energy, as the German public development bank, KfW has so successfully done. More recent research, which controls properly for institutional quality, does not find that government ownership of banks is associated with lower growth. Indeed, when the crisis period is included, the opposite may be true. By implying a more diversified financial system, public development banks seem to contribute to financial stability.

As argued by Griffith-Jones et al. (op. cit.) and supported by the evidence in Spratt (2016), there thus remains a strong case for public development banks. There are risks, but the experience of several countries shows that these can be overcome. The question may therefore be not whether to create a development bank per se, but how to design and run a *good* development bank.

The final issue in this section seems to be the most important one. As has been understood by those working on financial crises in developing and emerging countries for many years, this relates to the importance of

the *rate* of credit growth. Independent of any threshold for the total size of the financial sector, an overly rapid expansion of credit—regardless of the starting level and the exact form this credit assumes—is strongly associated with financial crises.

Whether in the 2007/8 North Atlantic crisis, in the Nigerian financial crisis of 2009, or in many of the financial crises that have occurred around the world since the 1980s, rapid credit expansion tends to see finance allocated inefficiently (lowering long-term growth prospects), and asset price bubbles inflated, triggering instability and subsequent collapse. Given the perennial nature of such events, with us in one form or another for hundreds of years (but apparently accelerated in recent decades), there is every reason to think they will continue, unless financial regulation is far more effective. Rather than assuming that 'this time it's different', Griffith-Jones et al. (2016) argue strongly that regulation needs to counter these trends, with counter-cyclical mechanisms deployed to dampen credit growth when this becomes excessive, and vice versa.

Financial systems in many African countries share features which seem to increase their vulnerability to shocks in the economic and financial system, including limited financial regulatory capacity, macroeconomic volatility linked to the economic structure of the countries (e.g. natural resource dependence, and concentration of exports, which implies volatility of their terms of trade) and political pressure for financial deepening with a view to developing the real economy.

Fast credit growth might exacerbate vulnerabilities and enhance the risk of financial crises, as it has done in all other regions of the world. In the African context, the case of Nigeria provides a fairly recent illustration that banking crises might reflect a negative causation link between financial deepening and growth, even at relatively low levels of financial development. In 2004/2005 the Central Bank of Nigeria (CBN) mandated a steep increase in the minimum level of bank capitalization with a view to creating large internationally competitive banks and increase financial depth (Soludo 2004). Banks achieved this capitalization, which was high even by international standards, by means of equity investment, mergers and acquisitions, resulting in the consolidation of the banking sector, whereby the total number of banks declined from 89 to 25 banks. The consolidation in the domestic banking sector, along with abundant

capital flows in the wake of rising oil prices, increased the speed of credit creation with significant flows to sectors with little growth impact. Between 2006 and 2009 private credit tripled from 12 per cent to 36 per cent of GDP. In real terms (2002 prices) this meant that domestic borrowing by the private sector grew almost fivefold. (Griffith-Jones et al. 2016)

This growth of credit included loans used to finance share purchases, clearly an undesirable practice, setting the stage for a financial asset bubble, particularly in bank stocks (Sanusi 2010). The financial sector boom ended in a bust with a systemic banking crisis, accentuated by the impact of the North Atlantic crisis in 2009, as financial sector growth was excessive, partly because it had not been accompanied by the corresponding regulatory and supervisory upgrade. Consequently, non-performing loans as percentage of gross loans rose sharply from 9.5 percent in 2007 to almost 30 percent in 2009. Finally, nine financial institutions that were close to collapse had to be rescued at the total cost of US$4 billion. The cost of cleaning up the balance sheets and recapitalizing the banks concerned has been estimated at about 2.4 trillion Naira, equivalent to almost 8 percent of the country's GDP (IMF 2011). The Nigerian crisis provides additional evidence that there is no reason for complacency about the need for rigorous financial regulation in the African economies, especially in the face of rapid credit expansion.

With respect to the effects of foreign bank presence on financial stability and growth in Africa, the existing evidence is somewhat ambiguous and requires further research (for an interesting recent book, see Beck et al. 2014). There are indications that foreign banks can bring in experience from other regional economies and that they can help exploit scale economies in small host countries. Yet the benefits for financial access remain ambiguous, partly because of the greater reliance of foreign banks on so-called 'hard' information about borrowers as opposed to soft information, which often implies a focus on prime borrowers (Detragiache et al. 2008; Sengupta 2007).

Furthermore, it seems that foreign banks are fundamentally different from domestic banks. As argued by Rashid (2011), foreign banks seem less inclined to lending and their loans are likely to be more volatile than those offered by domestic banks. Despite strong foreign bank presence,

the effects of the global financial crisis on African banks have been limited. In part, this is due to the relatively limited presence of banks from developed economies in Africa (with a high proportion of foreign banks currently being regional ones, which is different from previous decades when foreign banks were predominantly developed country ones—see Brownbridge et al. 1998) and the fact that existing subsidiaries mostly fund themselves locally and not via their parents. This, however, limits the contribution that these foreign banks make to national savings (Fuchs et al. 2012a). In addition, reportedly large capital buffers—often above levels required by Basel III—have served to increase the resilience of African banks during the global financial crisis, although this may have involved some costs for intermediation (Fuchs et al. 2012b).

The fact that financial sectors in LICs tend to be relatively smaller and simpler provides an advantage in that governments have more policy space to influence the future nature and scale of their financial system. Furthermore, the fact that the financial sector is smaller may imply that it is politically less powerful; thus, potentially, this gives more autonomy to regulators and—more broadly governments—to shape the financial sector.

Thus, LICS have, on the one hand, the advantage of being latecomers to financial development and can benefit from positive and negative lessons from experiences and research on other countries. On the other hand, the incompleteness of LIC financial systems means that important challenges remain on extending access (to all types of financial services) to those excluded, such as a high proportion of poor households, microenterprises and SMEs. More generally, it is difficult to fund working capital and investment, especially for SMEs (and particularly at low spreads and longer maturities) crucial for growth and employment generation. The financing of infrastructure is a well-known problem in LICs, and the mobilization of sufficient long-term finance, as well as the most effective way to channel it to investment in that sector, is a key area of policy.

Another key issue is how financial structures affect inclusive growth and stability in LICs, and how financial regulation affects these structures, as well as the behaviour of financial sector actors. This relates mainly to three categories: the supply of finance (including access to finance); the cost of finance; and the maturity of finance.

Given the dominance of banks in LIC financial systems, and the importance of credit in determining growth and stability outcomes, the focus of our analysis is largely on bank credit. As LICs generally lack the structural features required to obtain the benefits of capital markets—such as sufficient liquidity, for example—policymakers in LICs should focus on improving the impact of the banking sector on growth and stability, and ensuring that the capital account is managed carefully to support this goal.

The first area to consider, as discussed above, is the supply of finance to firms and households. In both cases, access to finance (of any kind) is a major issue in LICs. Firms, particularly small and medium-sized enterprises (SMEs), regularly cite lack of external finance as the major constraint to growth. Financial inclusion of households in LICs is also the exception rather than the norm. Many of the reasons are the same: information on creditworthiness is rarely available in third-party form; the transaction costs of lending small amounts are high; borrowers may be located in relatively remote rural areas. As we saw in the tables above, the total size of the financial sector—i.e., the total credit available—is relatively low, and bank branches are few. As a result, finance tends to flow to activities less affected by these problems, such as blue-chip corporates and government.

Regulation can be used to reduce these problems for incumbent institutions: encouraging information sharing and credit bureau, and fostering innovative practices to reduce transaction costs, for example. Increasing the supply of finance to diverse sectors is likely to be easier with a diverse set of financial institutions: large and small banks; diversified and sector-specific; commercial and development-oriented, public and private. Microfinance institutions (MFIs) credit unions, cooperative banks and mobile banking will be a part of this. As well as supporting financial inclusion (households) and inclusive growth (SMEs), such an 'ecosystem' may also be positive for financial stability, as institutions will be exposed to different sectors and risks.

The argument for diversity also applies to large-scale infrastructure projects, which also face severe—though different—financing constraints. The case made for development banks is also relevant here. There is more potential to involve external financial institutions in infrastruc-

ture. Often these will be multilateral or bilateral development banks, with commercial institutions also participating in projects. The presence of an effective national public development bank is likely to increase the likelihood of successfully financing such projects, and improve their development outcomes (interview material).

There is an important case for the comprehensive regulation of all financial institutions. Also, regulation should be tailored to the specific characteristics of different sectors. If the aim is to encourage institutions to act in different ways, then regulation should be designed to support rather than stifle this. Though regulation should be comprehensive, it should be proportionate to the scale and the systemic risk of financial institutions, as well as their specific features.

'Unsustainable' debt is likely to lead to financial instability, whether for the private sector, households, or government. A large part of this relates to the cost of credit. As illustrated in Table 4.3, average spreads in LICs are double those of MICs, and three times the average in HICs. That profit levels are similarly divergent suggests this is not simply a reflection of higher risk. Costs are also higher, but not enough to account for the difference in spreads. For many, this suggests that competitive pressures are not strong enough. As pointed out below, however, it is noteworthy that there is little evidence that measures to increase competitiveness have been effective in reducing spreads.

For households and individuals, the cost of credit is also important, with much debate focusing on the high rates charged by many MFIs. While not certain, it is more likely that MFI rates more accurately reflect risk than is the case with commercial banks. This does not mean that the resulting debts are sustainable, however. Credit will only be developmentally beneficial—to firms, households, or indeed governments, if invested in activities with returns greater than the rate of interest charged. Increasing levels of non-performing loans (NPLs) in the microfinance sector suggest, at the very least, that this is not always the case. Debates on whether MFI rates should be capped continue.

As was seen very clearly in the US subprime market, extending credit to the financially excluded is not an end in itself. It will only be beneficial—for both inclusive growth and stability—if borrowers can invest this finance productively, and if they have the financial capacity to pay

them back. If not, the extension of credit is liable to make matters worse, not better, for poorer borrowers, as well as for financial system stability.

If government borrows at very high rates, resultant debt service payments reduce its ability to fund other activities. If financial institutions in LICs can obtain very good returns by just lending to government at high, risk-free rates, they will be less inclined to lend to the other parts of the economy. By providing financial instruments and building a yield curve, government borrowing is an important driver of financial sector development in LICs.

The final area to consider is the maturity of finance. Much of the finance that is available in LICs is short-term and expensive. As well as designing regulation to encourage banks to take a longer-term view, domestic investors such as pension funds that naturally take a long-term view, also given the long-term nature of their assets, and can commit large-scale finance are needed. This is a long-term process, but infrastructure needs in LICs are pressing and immediate. Again, we have a strong case for public development banks to help fill this gap.

External finance can also play a role, but international direct investors may demand very high returns to offset the risks they associate with LICs. This does not mean that there is no scope for such investment, but it is probably best deployed in conjunction with multilateral and bilateral development finance institutions, either as co-investors or as suppliers of risk mitigation. The creation of new development banks, like the AIIB and the BRICS bank, provide new and additional sources of finance for infrastructure (Griffith-Jones et al. 2016).

The issue of private capital flows and capital account management in LICs is key. Overall, the literature on the topic confirms that private capital flows, in some cases and under certain particular conditions, may carry important growth opportunities. A significant share of the literature focuses on the growth impact of FDI flows on growth in LICs, while much less quantitative work has been done on growth benefits of other types of private capital flows, especially bond flows and international bank lending. This is a cause of concern, as bond flows (especially to sovereigns) are becoming an important part of private capital flows in several sub-Saharan African LIC countries. Recent trends imply an increasing cost of bond borrowing by LICs, signaling an end of the boom-like enthusiasm for so-called frontier markets (Stiglitz and Hamid 2016).

Notwithstanding their growth benefits, private capital flows are also found to be a significant source of risks. Indeed, sudden surges in capital flows can lead to appreciation and volatility of real exchange rates, to inflation, stock market booms, and to credit expansion. Moreover, sudden capital flow reversals or stops can lead to depletion of reserves, sharp currency depreciations, as well as to currency and banking crises. This has happened on numerous occasions, and there is a risk again this could happen in LICs. Private capital flows are thus a double-edged sword, and therefore, it is important to develop adequate and effective capital account management policy tools.

A number of policy measures may help manage surges in capital flows. These include capital controls, macroeconomic measures (i.e., official foreign exchange intervention, exchange rate intervention, and fiscal policy), and structural reforms (i.e., financial sector reforms including prudential regulation and supervision, and easing restrictions on capital flows). The evidence on the types of capital account management tools that have been used in LICs over time is still limited and much more detailed information on the issues that might arise in implementing specific capital account management tools in LICs is needed.

The debate on the effectiveness of capital controls regained momentum in the aftermath of the 2008–09 crises. A broad consensus is emerging that capital controls may be a good tool to moderate the impact of capital flows (e.g., to prevent the build-up of financial sector risks), but they should be used in coordination with other macroprudential tools to prevent asset inflation and overvaluation. An important development is the significant change in position of the International Monetary Fund (IMF), which until not long ago had a position broadly against capital controls and favored capital account liberalization, while in the aftermath of the 2008–09 crises, it decided to endorse the use of capital controls under certain circumstances. (For a critique of the progress but also the insufficiency of the IMF position, which sees capital controls only as a tool of last resort, see Gallagher et al. 2012.)

A number of structural reforms may help manage capital flows. Financial sector reforms, which include among others prudential regulation and supervision, are a capital account management tool that aims to influence indirectly capital inflows or outflows with the objective of

reducing the vulnerability of an economy to systemic financial crises. Particularly relevant in this context are regulations on currency mismatches in the balance sheets of financial and non-financial agents. In this context, it is important to examine whether regulatory measures should be done via domestic prudential policies (e.g., regulating currency mismatches in the balance sheets of banks) or through capital controls, by analyzing their respective advantages and disadvantages. More precisely, domestic financial regulation may work for loans channeled through the banking system, whereas loans lent to non-financial companies directly may require capital controls, if they become too large.

The evidence in the academic literature on the effectiveness of macroeconomic measures to manage capital flows is mixed across the different types of policy instruments, with fiscal tightening appearing to be the most effective macroeconomic policy tool, although it is difficult to implement, and can have negative effects on growth. The evidence on the effectiveness of prudential regulation is instead still scarce and controversial. In particular, there is a research gap on whether regulatory and supervisory practices originated in the developed world may be successful in LICs that are characterized by different structural features, stage of development, and institutional capacities.

African LICs are not insulated from financial globalization despite their relatively low levels of financial integration, and therefore are vulnerable to the destabilizing effects of financial shocks generated elsewhere, as well as in their own countries. There are big challenges this grouping of countries face in adopting complex regulatory approaches developed internationally, in how to deal with foreign banks in their jurisdictions, and how best to manage risks arising from financial integration, as a result of capital account liberalization.

African LICs are responding to complexity in financial regulation by slowing down on the implementation of the most challenging aspects of it, particularly with regard to Basel rules. Moreover, they are choosing regulatory tools that are simpler and more suitable to their needs. Also, they are investing in regulatory capacity, although important regulatory and supervisory gaps remain—for example, they still lack countercyclical tools to address systemic risks and insufficient assessment of foreign exchange position of banks, although interviews with African

regulators indicate that they are making progress in these areas (interview material).

Capacity by regulators to deal with complex rules may be missing. However, complexity has recently been challenged both by developed country and developing country regulators, on the grounds of ineffectiveness and inappropriateness (see for example Haldane and Madouros). If simpler—and more effective—regulation is adopted by African LICs, then there is evidence (see Gottschalk 2015) showing that, on the whole, such countries do, on the whole, have the capacity to put in place a regulatory system appropriate to their needs and that is sufficiently good to ensure the safety of their financial systems. The few financial crises that the region has suffered more recently have had more to do with inappropriate policy choices than with capacity for effective banking regulation, as the Nigerian case discussed further below demonstrates.

4.5 Empirical Evidence from Case-Study Findings

The broad analysis outlined above allowed us to identify the key questions that would help frame the case studies referred to, which were Ghana, Kenya, Nigeria, and Ethiopia. We split here the discussion first in terms of the domestic sector, before examining later issues with respect to the external sector.

Domestic Credit, Inclusive Growth and Stability

The case studies show that LIC banks are well-capitalized and very profitable (see also Tables 4.3, 4.9 and 4.10 in this paper, the first for average of LICs, and the latter two Tables, for indicators for our four case study countries, which all have higher return on equity, than the already very high average for LIC countries, at 19 percent, in contrast with average for HICs at 6 percent). This is clearly positive, as the former provides a valuable buffer against financial instability. However, their very high levels of profits show that banks are charging their clients excessively, mainly

through high spreads (see Table 4.3 above and 4.6 below). The resulting high cost to borrowers is a clear problem, for the growth of the rest of the economy. In a recent empirical study, Aizenman et al. (2015) show that for Latin America and Asia the faster the growth of financial services and the larger the lending–deposit interest spread, the slower the growth of the manufacturing sector. The authors call this a financial Dutch disease, which could have similar effects in African LICs. Further research is clearly required on this important issue.

A common feature among the countries under study is the extremely high levels of spreads, although this is reportedly less so for Ethiopia. In Ghana and Kenya, and especially Nigeria, spreads are not only high but have not come down through time, despite a growing number of banks, including foreign banks, and increased competition. There are some exceptions, like Tanzania, where spreads have come down significantly in the last ten years to around 5 percent. High spreads occur for most LICs, (the average spread for LICs in 2013 was 14.87 percent in 2013, and 11.4 percent in the 1990–2012 period, see again Tables 4.3 and 4.6).

The case studies also see spreads remain high despite technological improvements and, in the case of Kenya, the creation of credit reference bureaus to reduce asymmetries of information and the establishment of branches across the country to reduce costs associated with the transportation of cash.

The common culprits suggested by banks to explain this phenomenon include: high transaction costs, a difficult business environment, poor infrastructure services, high salary costs (the latter especially among foreign banks), and high default rates.

However, in relation to the role of default rates, the evidence is that banks in Africa lend to creditworthy borrowers, whose default rates are

Table 4.6 Spread (lending rate- deposit rate) in %, 2013

	Kenya	Ghana	Ethiopia	Nigeria	LICs (*)
General	9.5	6.5	6.5	15.6	11.4
SME's	12.0				

*LICs: 1990–2012 average

Source: Central Bank of Kenya, Bank of Ghana, Central Bank of Nigeria, Central Bank of Ethiopia

low, not high, and which therefore do not justify high spreads. The high profitability of banks would support this, as high default rates would sharply reduce profit margins.

This is illustrated by the case of Kenya. In Kenya, total bank profits before tax increased from about US$70 million in 2002 to US$1256 million in 2012, an average annual growth rate of 38.7 percent. The main sources of income were interest on loans and advances (an average of 49.6 percent of total income during the period), which increased over time, reflecting an increase in their spreads. (Mwega 2016).This increase in profits seems excessive.

A common policy recommendation to lower interest rate spreads is to increase the level of banking competition, especially by attracting foreign banks to domestic markets. The expectation is that foreign banks bring new technology, introduce better management practices, and have lower transaction costs. But if more competition in the system, including from foreign banks, does not contribute to lower spreads, as the evidence seems to suggest, then regulatory measures might be a way to tackle the problem.

Mwega (2016) reports that a committee set up by the Kenyan National Treasury recommended the introduction of a common reference rate, which banks would have to follow. Where they charge above the reference rate, they would have to explain this. Even if this measure does not reduce spreads, it would at least increase transparency and help uncover the factors underlying high spreads, thus facilitating further corrective measures, which may even contemplate capping if all else fails. Indeed, other countries might wish to consider adopting common reference rates, and possibly contemplate capping as well.

Together with cost, the supply of finance (or access to finance) is a major issue in Africa. As Table 4.7 shows, credit to GDP in the case study countries is relatively low, especially in Ghana and Ethiopia. Amongst

Table 4.7 Credit to the private sector/GDP in %, 2010

Kenya	Ghana	Ethiopia	Nigeria
33.8	15.3	17.2	24.9

Source: African Development Indicators, AfDB (2013) except for Ethiopia which is World Bank (2013)

the case study countries, Kenya is making progress in expanding credit to SMEs as well as providing basic banking services to the wider population, the latter particularly through its innovative mobile banking operator M-PESA. The combination of competition and new technology are driving local banks to reach the lower end of the market. They are able to make significant profits, while taking calculated risks. Interestingly, foreign banks are starting to follow local banks in trying to expand their client base. However, even in Kenya, 25 per cent of the population remains excluded from financial services.

While microfinance institutions partly fill the gap, they are focused more on individuals and micro-entrepreneurs. Medium sized enterprises, and even many small enterprises, are not served by microfinance institutions, in what Justin Lin has called the 'missing middle' (Lin 2013). There may be a case for smaller and more decentralized banks being better at providing credit to small and medium-sized enterprises, as they have fewer asymmetries of information and lower transaction costs, partly as they may pay their staff more reasonable salaries.

As well as a more diverse mix of financial institutions, the way that these institutions are regulated is important. Banks are required to set aside capital for all the loans they make. The introduction of the Basel Capital Accord in the 1980s, and its subsequent adoption as the international standard, provided an important mechanism to prevent international competition resulting in a lowering of capital adequacy over time.

As we can see from Table 4.8, capital adequacy levels in our case study countries remains far above the required Basel level. There are good reasons why regulatory capital should be higher in lower-income countries, as risks to the banking sector are also higher, for example from external shocks. While stability may be furthered by capital requirements at high levels, they may discourage credit, particularly for borrowers deemed to

Table 4.8 Capital adequacy in %, 2013

Kenya	Ghana	Ethiopia	Nigeria
23.2	18.6	17.9	17.2

Source: Bank of Ghana, National Bank of Ethiopia, Central Bank of Kenya, Central Bank of Nigeria and IMF

Table 4.9 Return on assets in %, 2009–2012 average

	Kenya	Ghana	Ethiopia	Nigeria
Foreign and local private banks	4.6			
Banks with state ownership	3.7			
State-owned banks	3.1			
Average total banks	3.4	3.7	3.3	1.9

Source: Central Bank of Kenya, Bank of Ghana, National Bank of Ethiopia, Central Bank of Nigeria and IMF

Table 4.10 Return on equity (total capital) in %, 2012

Kenya	Ghana	Ethiopia	Nigeria
34.2	26.7	34.2	20.2

Total capital: average capital used to calculate the ROE includes retained earnings, profits, and loss

Source: Central Bank of Kenya, Bank of Ghana, National Bank of Ethiopia, Central Bank of Nigeria and IMF

Table 4.11 Return on equity (core capital) in %, 2009–2012 average

	Kenya	Ethiopia
Foreign banks	46.3	
Local private banks	44.6	
Banks with state ownership	34.1	
State-owned banks	24.6	
Average total banks		42.8

Core capital: average capital used to calculate the ROE excludes retained earnings, profits, and loss

Source: Central Bank of Kenya, Bank of Ghana, National Bank of Ethiopia and IMF

be relatively high risk—i.e., the crucial SME sector. More research is needed on the appropriate level of capital in different LICs.

The final issue identified is maturity. Bank credit in Africa is mostly short term in nature, in the form of consumer credit to households and working capital to businesses. The challenge, therefore, is how to increase provision of long-term finance, to support investment in sectors, such as infrastructure, agriculture, and manufacturing. Ghana, Kenya, and Nigeria have capital markets, but these are not sufficiently developed to provide longer-term financing to the extent required. The banking

system will remain the most important source of finance in African LICs, and should provide long-term finance to sustain rapid growth.

Among the case studies, Ethiopia can be singled out as a country with a strategy for long-term credit provision, via its public development bank, with funding coming from private banks and the government-owned commercial bank. Although the mechanism to achieve this in Ethiopia appears to work reasonably well, in that the development bank is able to serve priority sectors including manufacturing and infrastructure, it seems idiosyncratic and may only be possible due to a strong state and the very early level of development of its financial system. In any case experiences like that of the Ethiopian development bank need further research, in order to evaluate in more detail its effectiveness, in terms both of funding long-term growth and structural transformation and of commercial returns. Whilst it may not be directly replicable in other countries, it does suggest that other African countries could find their own ways to tackle the problem of long-term finance and support long-term growth.

Given the concerns about financial inclusion and lack of sufficient availability of long-term finance, and support for sectors such as SMEs. African policymakers and regulators know that more needs to be done. What they envisage are financial systems that can provide more and cheaper finance, and long-term finance for larger productive and infrastructure projects, and that finance reaches the poorest. Their view is that, to this end, their financial systems should become more diversified, as clearly supported by the literature. Within this common vision, a greater role could be played by well-run public development banks, especially in the provision of long-term credit, as is the case in many successful countries in Asia (Hosono 2013), Latin America (Ferraz 2016) and Europe (Griffith Jones et al.).

External Credit, Growth and Stability

To the extent that countries such as Ghana and Kenya are graduating towards middle-income status, they will increasingly use private foreign finance for funding. Too much dependence on foreign capital is risky, especially if it is of a short-term nature, and/or that currency mismatches become significant. In all, foreign debt, especially short-term debt, creates

the risk of excessive external debt and vulnerabilities in their financial systems, whilst having an unclear effect on growth.

As capital flows are an important conduit of risks and source of financial vulnerability, the country studies examined carefully the issue of capital account management. In the Ethiopian case this sort of risk is very limited, because the country has a fairly restricted capital account, which essentially allows only for foreign direct investment and some borrowing by the government on the international bond market. Portfolio flows are not permitted, and banks are not allowed to borrow from abroad.

In Ghana, Nigeria, and Kenya, capital accounts are fairly liberalized, letting in all forms of capital, including short-term bank lending and portfolio flows. The country studies show that this policy stance has created important vulnerabilities in all three countries. The Nigeria case is interesting, as the drying up of capital flows to the country in late 2008 and early 2009 was a major contributory factor to the banking crisis the country suffered in 2009. The country studies also show that both Kenya and Ghana have large current account deficits and are therefore vulnerable to sudden reversal of capital flows.

In Kenya, more than half of its current account deficit is financed with short-term capital flows. Given the close links between such flows and domestic financial systems, the latter are also vulnerable. So, although the volatility of capital flows is a balance of payments issue in the first instance, what is particularly worrying is that it constitutes a critical source of instability for their financial systems. This can be true, for example, not just in terms of direct impacts resulting from the currency mismatches of the banks themselves, but also in terms of the currency mismatches of companies. Where companies borrow from banks in foreign currency, but sell mainly in local currency, they are exposed to foreign exchange risk, which can indirectly also cause problems for the banks' stability.

If standard indicators, such as the capital adequacy ratios given above, show that financial systems are in good shape, then there may well be a problem with the indicators being used for financial stability assessment. These indicators should be broadened and measures should be undertaken to gradually reduce vulnerabilities.

As a contrasting example, Ethiopia may also have balance of payments' financing problems, but it is not resorting to easy foreign capital, due to

the risks it creates. This at least keeps its financial system, still underdeveloped, insulated from external shocks.

Returning to the issue of a more diversified banking structure, there are important questions about the best composition of such a structure, as well as how this is to be achieved. African regulators envisage a diversified financial system, as mentioned above, but does this imply less (rather than more) consolidation? And if foreign banks are admitted, thus contributing to a more diversified system, does it matter whether these banks are Pan-African or from developed countries? More broadly, do foreign banks contribute to financial stability or do they make countries more vulnerable to financial instability? Beck et al. (2014) summarizes the recent empirical evidence well, stating that cross-border banking can help mitigate the impact of local financial shocks, but exacerbate global financial shocks.

In addition to the role that external capital had on Nigeria's banking crisis of 2009, the Nigeria experience further suggests that in a LIC context a more consolidated banking system, which the country had attained prior to the crisis, does not necessarily make the system any safer. Despite consolidation, Nigeria did not close down its development and specialized banking institutions. However, the past track record of these banks has been perceived as not good. Nevertheless, Nigeria has recently created new development financial institutions and mechanisms, which hopefully will be more efficient. As with the point made about development banks above, it may not be the precise form that a financial institution takes that is most important, but whether it operates effectively and efficiently with appropriate safeguards against excessive bureaucracy and/or capture by corrupt practices. The ideal may be a diversified system, but only if the components of this system operate effectively.

A lesson from Nigeria's recent experience is that what a natural resource-rich country like Nigeria needs to achieve may not just be more or less consolidation, or more or less development banking. No approach is likely to succeed without institutional mechanisms that are more accountable and better governed so that natural resources wealth can be effectively channeled to support pro-poor and pro-growth projects.

Though development banks and sovereign wealth funds may play an important positive role, especially in channeling resources into long-term

and strategic private and public investment for structural transformation, it is important they are well designed and well run. It is also important they complement, as well as work with, private banks and capital markets, where these function well, and that they do not attempt to substitute them. On this point, the Ethiopian experience reflects some concerns about public banks excessively drawing on resources from private banks, even though it seems the public development bank does seem to channel its resources efficiently towards long-term structural transformation.

There are divergent views on whether foreign banks from developed countries or Pan-African banks are preferable. Although foreign banks are currently not permitted to operate, Ethiopian regulators would give preference to those from developed countries if this were to change. These are seen as stronger, better managed, and subject to better regulation and supervision. They are often large and have more capital. If they came to Ethiopia, they would need to comply with the high national capital requirements shown above.

Regulators from other case study countries express a different opinion. For them, banks from developed countries would just be more of the same: acting conservatively and following a banking model already practiced by the established foreign banks in their countries. In contrast, they believe that Pan-African banks would lend more, and cheaper, as has been reportedly already the case in Kenya, Tanzania, Uganda, Rwanda and other African countries where these banks have a presence. The lower spreads charged in the East African Community countries by Pan-African banks (both in their home and their host countries) than either foreign banks from outside the region or domestic private banks is confirmed empirically by evidence provided by the World Bank (2013) in the Financial Sector Assessment Program led by World Bank (see also Beck et al. op. cit.). It should be noted, however, that even the relatively lower spreads reported charged by the EAC cross-border banks are still high, at an average of almost 12 percent for 2012.

The Ghana experience, in contrast, suggests that the presence of Pan-African banks may generate important cross-border risks at the regional level, which their regulatory framework is not equipped to deal with. It also makes the point that regional colleges of supervisors, discussed further below, are good for information sharing, but not very useful for

addressing crisis resolution problems, which would arise in case of failure of a Pan-African bank. The Nigerian experience, moreover, alerts us to the fact that the supervision of the operations of Nigerian banks with branches and subsidiaries abroad has been largely deficient so far, which poses risks both for Nigeria as a home country of several Pan-African banks and also for countries hosting such banks.

4.6 Regulatory Challenges Facing African Countries

African regulators are investing time and resources to be fully compliant with the Basel Core Principles, and are submitting their banks to strict capital adequacy requirements. Some countries are still firmly under Basel I, while others are moving on to Basel II and III.

However, despite their efforts and recent achievements in terms of having a good regulatory framework in place, and being up to date with recent international regulatory developments, all regulators see it as a challenge to adopt financial standards designed internationally. The first reason has to do with their complexity. Indeed, even in developed economies, there are influential voices, such as that of Andy Haldane, the Chief Economist at the Bank of England, who have persuasively argued that excessive complexity of regulation seems undesirable. Second, they lack sufficient capacity (both human and technical) to do so. In the face of this challenge, their response has been, first, to adopt a gradual approach and, second, be selective, going for parts of regulation that are appropriate to their needs and the features of their financial systems. Second, they are investing heavily in capacity building on a continuous basis, and for that purpose they are allocating the resources needed to support this investment.

All countries are striving fully to comply with Basel Core Principles, as just mentioned. However, a recent expansion in the number of principles, and the adoption of tighter and more demanding criteria and methodology for compliance assessment, are making the task of compliance more challenging.

The Ethiopian case, however, tells a different story. Although the country faces capacity issues on the regulatory front, their financial system is

simple, based on traditional banking. It does not have complex products, derivatives, complex capital markets or shadow banking. In a sense, therefore, their regulatory capacity might be considered as adequate.

In relation to Basel rules, which arguably are the part of banking regulation that is particularly complex and whose complexity has only increased, all countries are adopting a gradual approach. Kenya, for instance, fully complies with Basel I and with Pillar 1 on credit risk of Basel II. It is considering what aspects of Basel III they want to adopt, coordinating with its neighbors.

Systemic risks have been part of their regulatory concerns. Some countries are considering adopting some aspects of Basel III, in order to address systemic risks relating to bank size and pro-cyclicality of credit. Risks of loans to a single borrower are an older issue facing African regulators, for which they have in place quantity limits. Finally, African regulators have quantity limits to address currency mismatches, which can create important risks for countries with open capital accounts. This is positive, but as pointed out above, indirect effects of such currency mismatches (on the companies to whom banks lend), need to be also considered by regulators.

Despite all their efforts, African regulators may need to do more to address adequately systemic risks. Their focus has traditionally been on microprudential rather than macroprudential regulation. Although these measures are important, they might give regulators a false sense of safety. It is encouraging that regulators acknowledge in interviews that it is important to develop increased regulation of systemic risks.

What might be needed is a more robust analysis and understanding of the links between the macro-economy and the financial sector. Countercyclical (or macroprudential) regulation is one concrete way in which these links can be established. It is an important innovation of Basel III, that should be adopted in low-income countries, though its features would need to be adjusted to the needs and features of their financial systems.

One step forward in this area might not be just in the form of more investment on regulatory capacity in a narrow sense. Instead, what seems needed is to approach these risks differently. The safety of a country's

financial system should not be just the responsibility of regulators, but of other government officials as well, so that issues arising from macro-financial links and capital account management can be quickly spotted, understood, and adequately addressed. In their efforts to build capacity, African countries know that they need new and different skills to be able to keep up with the regulatory developments and to have effective regulation and supervision in place.

4.7 Main Policy Conclusions and Research Challenges

Clearly, there is not sufficient finance to support inclusive growth in LICs. It is not just the quantity of finance that matters, but also its maturity and cost. The quantity *and* the quality of finance in LICs are both problematic. There is insufficient finance, and that which is available tends to be short term, expensive, and not well suited to the needs of borrowers. This is especially true for small and medium-sized enterprises, 'the missing middle'.

An area of focus of this paper has been the cost of loans, which remains high in many LICs. This restrains growth and fosters financial instability. Solutions have proved elusive. Numerous reforms to increase competitive pressure and efficiency in the banking sector have had little impact upon spreads. Identifying and addressing the determinants of reducing the cost of finance, for individuals and firms in LICs, including through greater transparency and possible regulation, such as capping interest rates is a crucial area of future research.

The structure of the banking sector is important. A first feature should be that the financial sector should be simpler, in the sense that, for example, the type of instruments used should not be complex or opaque, and thus the risks could be more easily assessed by the institutions themselves, and by the regulators. This facilitates that regulation itself should be simpler. Furthermore, simple arrangements and institutions that increase and share information, like credit bureau, can play a very positive role to both increase access to credit and to enhance financial stability.

Evidence suggests that a diverse set of banking institutions would improve both the quantity and quality of finance for different borrowers, and would therefore have positive impacts on inclusive growth and stability. As regards the latter, the benefits of diversification for reducing risk is well known, within institutions, but should also be applied across institutions. Further research and policy discussion seems necessary for the desirable composition of the financial system in LICs, for example the balance between public and private banks, large and small institutions, domestic and foreign, and between more universal banks and those focused on particular sectors such as SMEs.

While the potential for development banks to foster inclusive growth in LICs is significant, there are some risks. Our understanding of how to design and run 'good' development banks that can fulfill this potential while avoiding risks is growing, but remains at an early stage. The need for development banks is not new, but new challenges and what we have learned about successful development banks make this a new area of research in development finance. Focusing on LICs, where the need for development banks seems large, but the risks they create may also be large, seems a particularly important area of research.

Regulation is fundamental. If we know more about the types of financial institutions that are best suited to balancing inclusive growth and stability in LICs, it is necessary to design regulatory frameworks and other measures to encourage/support the emergence of these institutions. A second issue is how different types of institutions should be regulated and supervised in LICs. The benefit of a diverse set of finance institutions is that they can offer different services to different groups of customers. It is important that regulation is designed to support—rather than stifle—the services different financial institutions can provide. Furthermore, though regulation may be diverse, it should be equivalent, to avoid regulatory arbitrage. It should also be comprehensive, so all financial institutions providing credit are regulated, but such regulation should be proportional to the level of systemic risk different financial institutions are likely to generate.

A diverse mix of heterogeneous institutions is very unlikely to evolve naturally, or to survive if it does so. Understanding how regulation and other government policies can help support and maintain this process in LICs is another new area of research. Macroprudential regulation is

an important area for regulation that has been mainstreamed since the global financial crisis. It requires better understanding on how domestic regulation interacts with the macroeconomic and external environment in a LIC setting, including which tools are most appropriate (whether, for example, focusing on domestic financial regulation or managing the capital account) to deal with this interaction such that stable, inclusive growth is supported.

Simply importing frameworks from developed and emerging countries, such as Basel II and III, is not the solution. If LICs are to use financial regulation to help strike the right balance between growth and stability, this will need to be designed explicitly for the circumstances of low-income countries. Again, more research is required.

We have focused more on the banking sector; however, capital market development, especially local currency bond market development, is also an important area, both for policy and research. Financial sector development is crucial for inclusive growth in LICs. However, financial instability can have devastating consequences, especially for poor people. How finance can help achieve the optimal balance between growth and stability in LICs, and the role that regulation should play in this, is among the most pressing development questions policymakers and researchers face. We hope to have contributed to an understanding of these issues with this book, by providing some answers, but many more questions.

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5

Capital Controls in a Time of Crisis

Ilene Grabel

Abstract The paper highlights five factors that have contributed to the evolving rebranding of capital controls during the global crisis. These include: (1) the rise of increasingly autonomous developing states; (2) the increasing assertiveness of their policymakers; (3) a pragmatic adjustment by the IMF to its constrained geography of influence; (4) the need for controls not just by countries facing fragility or implosion, but also by those that fared 'too well' during the crisis; and (5) the evolution in the ideas of academic economists and IMF staff. The paper also explores tensions around rebranding as exemplified by efforts to develop a hierarchy in which controls on inflows that are a last resort and are targeted, temporary, and non-discriminatory are more acceptable than those that are blunt, enduring, discriminatory, and that target outflows. In addition, tensions have increasingly emerged over whether controls should be used by capital-source rather than just capital-recipient countries.

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5.1 Introduction[1]

The implosion of the US' highly liberalized, liquid, and internationally integrated financial system severely damaged the case that neoclassical economists had made for several decades that the country's financial system was the ideal to which all other countries should aspire. The global crisis has posed a particularly strong challenge to true believers in the universal desirability of unrestrained international private capital flows, a central component of the financial liberalization prescription.

During the long neoliberal era, capital controls were largely discredited as a vestigial organ of wrong-headed, dirigiste economic meddling. And so it was that until the global crisis one had to look to the work of the Keynesian minority within the academic wing of the economics profession and to the world's heretical governments, central banks, and finance ministries for forceful, consistent support of the management of international capital flows. Enter the global financial crisis. Many extraordinary things happened during the crisis, one of which is that Keynesian-inflected ideas about the legitimacy and necessity of managing international capital flows began to infuse the work of a broader set of economists in academia and in the policy community. Notably, views on capital controls at the IMF evolved significantly during the crisis, though in some respects (and as I will argue below) this was a grudging evolution revealing of continuing discomfort (see Chwieroth 2014; Gallagher 2014; Grabel 2011, 2015b; Moschella 2014). The new view recognizes that capital controls are a 'legitimate part of the policy toolkit' (to bor-

[1] I thank George DeMartino, Philip Arestis, Malcolm Sawyer, and participants at the conference in Cambridge for invaluable comments on this paper. I also thank Jeff Chase, Denise Marton Menendez, Meredith Moon, and Alison Lowe for excellent research assistance.

row a now oft-cited phrase from IMF research on the subject during the crisis) (e.g. Ostry et al. 2010). Greater tolerance for controls is also reflected in the pronouncements of officials associated with other multilateral institutions, important figures in the world of central banking, analysts at credit rating agencies, in reports in the financial press, and in the recent research of economists that one would not have associated with Keynesian thought.

A large group of developing and emerging economies and several countries on the European periphery implemented far-reaching, heterogeneous controls on capital inflows and outflows in response to diverse economic challenges. From a pre-crisis vantage point, the boldness, range, and creativity of the policy interventions across a significant swath of economies were unexpected. But a longer-run perspective on what appears to be the 'new normal' (Grabel 2011) situates the new openness and policy practice in the context of a longer-run process of legitimation that began slowly and unevenly after the East Asian crisis (Abdelal 2007; Chwieroth 2010; Moschella 2009). Hence, the global crisis has intensified a process of legitimation that predated it. The complex processes of change can most accurately be understood as 'messy', uneven, contested, and evolving. That said, the degree of ideational and practical change around capital controls is far greater and more consistent than in the years following the East Asian crisis. In the language of marketing, capital controls have been 'rebranded' during the global crisis.

The rebranding of capital controls has occurred against a broader backdrop of uncertainty and economic, political and ideational change. This state of affairs—which I have elsewhere termed 'productive incoherence'—constitutes the broader environment in which thinking and practice on capital controls are evolving (Grabel 2011). By productive incoherence I refer to the proliferation of responses to the crisis by national governments, multilateral institutions, rating agencies and the economics profession that have not yet congealed into a consistent vision or model. Instead, and in response to diverse economic challenges, we find a proliferation of strategies that defy encapsulation in a unified narrative. I argue that incoherence is productive because it has widened the policy space to a greater and more consistent degree than in the years following the East Asian crisis (cf. Chwieroth 2015; Moschella 2014; Gallagher 2014).

How are we to account for this extraordinary evolution regarding capital controls?[2] In what follows I examine five factors that, in my view, must appear in any comprehensive account. These include: (1) the rise of increasingly autonomous developing states, largely as a consequence of their successful response to the Asian crisis; (2) the increasing confidence and assertiveness of their policymakers, in part as a consequence of their relative success in responding to the global crisis at a time when many advanced economies have and are still stumbling; (3) a pragmatic adjustment by the IMF to an altered global economy in which the geography of its influence has been severely restricted, and in which it has become financially dependent on its former clients; (4) the intensification of the need for capital controls by countries facing a range of circumstances—not just those that confront financial fragility or implosion and those that have been buffeted by the spillover effects of policy choices in wealthy economies, but also those that fared 'too well' during the first many years of the crisis; and (5) the evolution in the ideas of academic economists and IMF staff. I will also explore in passing important tensions that have emerged in conjunction with rebranding. Paramount in this regard are attempts to develop a hierarchy in which controls are more acceptable if they focus on inflows and are implemented only as a last resort, are temporary, targeted, and non-discriminatory. Less acceptable are those that target outflows and are blunt, comprehensive, lasting, and discriminatory. In addition, tensions have emerged over the question whether controls should be used by capital-source rather than just capital-recipient countries.

Others have earlier sought to rebrand controls, though these efforts did not prove sticky outside the Keynesian minority. For instance, Epstein et al. (2004) use the term 'capital management techniques' to refer to two complementary (and often overlapping) types of financial policies: capital controls and those that enforce prudential management of domestic financial institutions. Ocampo (2003, 2010) has long used the term 'capital account regulations' to refer to a family of policies, which includes capital controls. The IMF now refers to capital

[2] Discussion in this paper draws heavily on though extends and updates discussion in Grabel (2011, 2015b) and parts of Grabel (2003b, 2013b, c), Grabel and Gallagher (2015).

controls matter-of-factly as 'capital flow management' techniques (IMF 2011b). IMF rebranding is particularly significant. The new, entirely innocuous term is suggestive of a neutral, technocratic approach to a policy instrument that had long been discredited as a vestigial organ of wrong-headed, dirigiste economic meddling in otherwise efficient markets.

5.2 The Origins of Change: Capital Controls and the East Asian Crisis

The Asian crisis stimulated new thinking about capital flow liberalization. Key mainstream economists, such as Bhagwati (1998) and Feldstein (1998), began to be openly critical of the way in which powerful interest groups and the IMF used the Asian (and other) crises to press for capital account liberalization, and caused others to reassess the case for capital liberalization (Obstfeld 1998; Krugman 1998). IMF research staff started to change their views on capital controls, albeit subtly, unevenly, and inconsistently. In the post-Asian crisis context, the center of gravity at the Fund and in the academic wing of the economics profession shifted away from an unequivocal, fundamentalist opposition to any interference with the free flow of capital to a tentative, conditional acceptance of temporary, 'market-friendly' inflows controls (Prasad et al. 2003). Academic literature on capital controls after the Asian crisis reflected this gradually evolving view (Chwieroth 2010, Chap. 8; Epstein et al. 2004; Magud and Reinhart 2006).

Despite the modest intellectual progress on capital controls that began after the Asian crisis, controls remained an exceptional and contested measure. But things begin to change during the global crisis, when circumstances coalesce so as to legitimate controls to a far greater and more consistent degree.

The evolution in thinking and practice on capital controls during the global crisis represents an important turn in the direction of post-World War II support for the measure. Capital controls were the norm in developing and wealthy countries in the decades that followed World War II (Helleiner 1994). In the first several decades of its existence, the

IMF supported capital controls, a position that was consistent with and reflected the views of the economics profession (and notably, the views of John Maynard Keynes) and public figures (such as the US Treasury's Harry Dexter White). Both Keynes and White not only saw capital controls as a central feature of post-war economic policy, but also understood that controls on both sending and receiving ends could be warranted, and that cooperation by capital source and recipient countries was essential (see Horsefield 1969, p. 31, 65; Steil 2013, p. 134, 150).

5.3 Rebranding Capital Controls During the Global Crisis

Several factors have facilitated the resurrection and legitimation of capital controls during the global crisis. In the interests of clarity, I discuss these factors separately in what follows, even though I see them as fully interdependent and cumulative.

Increasing State Autonomy in the Global South and East

Dismal experiences with the IMF, especially during the Asian crisis, led policymakers in the developing world to pursue strategies that would minimize the chance of future encroachments on their policy autonomy. The chief way in which this goal was operationalized was through the self-insurance provided by the over-accumulation of currency reserves. Self-insurance strategies collectively promote resilience and even what Nassim Taleb (2012) refers to as 'anti-fragility,' or the ability to thrive in periods of instability. This strategy of building anti-fragility was validated during the first many years of the global crisis.

Between 2000 and the second quarter of 2013, developing and emerging economies added about US$6.5 trillion to their reserve holdings, with China accounting for about half of this increase (Prasad 2014a). Emerging and developing economies (with reserves of US$7.7 trillion in 2014) accounted for 72 percent of the increase in global reserves between 2000 and 2014 (IMF COFER, author calculation).

The resources held by a group of developing countries help to create an environment wherein policymakers have the material means to enjoy increasing policy autonomy relative to the IMF. Not least, this has meant that policymakers have been able to deploy capital controls without worrying about negative reactions by the IMF or investors. The resilience and even the anti-fragility and the policy space created by these resources may prove essential if current turbulence intensifies.

Increasing Assertiveness in the Developing World

During the global crisis developing country policymakers took advantage of their increased autonomy in a variety of ways. The use of capital controls was one and perhaps the most dramatic 'indicator' of increased autonomy, and we consider this matter below. But we turn now to a brief consideration of three other indicators of increasing assertiveness: the use of counter-cyclical macroeconomic policies; innovation in financial architecture; and new activism at the IMF.

Counter-Cyclical Policies

The developing countries that have enjoyed the ability to protect and even expand their autonomy during the global crisis used the resulting policy space to pursue a range of counter-cyclical macroeconomic policies. Ocampo et al. (2012) conclude that when we look across the developing world we find diverse, uneven counter-cyclical policy responses. This is a radical departure from the past insofar as developing country policymakers generally had no alternative but to implement strongly pro-cyclical policies, most often as per the conditions of IMF assistance. Policymakers could implement counter-cyclical and other protective policies that were previously unavailable to them precisely because of the enabling effects of prior reserve accumulation strategies.

The sheer scale of the crisis, the bold rhetoric around the need for new strategies to combat it, and the range of unorthodox policy responses pursued across the globe may have provided broader validation for the protective national policy responses pursued in the developing world.

The G-20's brief 'Keynesian moment' in 2008–09 opened space for capital controls and counter-cyclical responses in the developing world. Similarly, the IMF's rhetorical attention to pro-poor spending during the crisis began to legitimate counter-cyclical responses (Grabel 2013a). Expansionary monetary policies in the USA and other wealthy countries likewise helped to normalize protective responses to the crisis in the developing world. What the IMF's Lagarde termed the rise of 'unconventional monetary policies' (i.e., negative interest rates) in a number of wealthy countries provided cover for other unorthodox policies, such as capital controls. Finally, the rising chorus of criticism around the cross-border spillover effects of monetary policy decisions (especially by the US) have made capital controls appear as a reasonable protective response.

Architectural Innovations

As with the Asian crisis, the global crisis has promoted interest in the expansion of existing and the creation of new institutions that deliver liquidity support and long-term project finance in ways that complement the IMF and the World Bank, respectively. The initiatives have been given life by the economic and political environment in which many developing country policymakers found themselves during the global crisis.

These initiatives range from reserve pooling arrangements such as the Chiang Mai Initiative Multilateralisation among members of the Association of Southeast Asian Nations (ASEAN)+ Japan, China, and South Korea, the Latin American Reserve Fund, the Arab Monetary Fund, and the Contingent Reserve Arrangement (CRA), which involves Brazil, Russia, India, China, and South Africa (the BRICS); to development or project/infrastructure finance banks, such as the Latin American Development Bank, the New Development Bank (NDB) of the BRICS, and the China-led Asian Infrastructure Investment Bank and the Silk Road Fund/One Belt, One Road initiative; to hybrid arrangements that have both liquidity support and project finance facilities, such as the Eurasian Fund for Stabilization and Development among members of the Eurasian Economic Community.[3]

[3] See Grabel (2013a, 2015a) for an examination of these and other initiatives.

Collectively, these innovations indicate the extent to which developing country governments have been stimulated by the crisis to pursue architectural initiatives that express an increasing self-confidence and a desire for autonomy from the Bretton Woods institutions (BWIs). Moreover, it is conceivable that recent changes in IMF views and practice on capital controls stem partly from attempts to protect the institution's franchise from actual or potential competition from these institutional innovations.

New Lenders, Renewed Pressures

The increasing assertiveness of developing countries is also given expression in the new and historically unprecedented role that they have taken on at the IMF. Developing countries were twice called upon to and did in fact commit funds to the institution (in April 2009 and June 2012). The new commitments reflect evolving power dynamics in the global economy and the IMF's evolving relationships with former clients. It is not inconsequential that most of the IMF's new lenders have been utilizing capital controls during the crisis, and more broadly have pursued various forms of dirigiste economic policy.

At the same time that developing countries took on a new role at the IMF they became more assertive in pressing the long-standing case for reform of the institution's formal governance. The 2012 contributions to the IMF by the BRICS were pointedly conditioned on governance reform, particularly implementation of the very modest governance reforms agreed to in 2010 (Giles 2012). The US Congress blocked implementation of these reforms until December 2015, and this long period of gridlock was explicitly referenced when the BRICS announced in July 2014 that they would launch the NDB and CRA.

The IMF's Constrained Geography of Influence

An important consequence of the Asian crisis and subsequent changes in the global economy was the loss of purpose, standing, and relevance of the IMF. Prior to the global crisis, demand for the institution's resources

was at an historic low. During the crisis itself, developing countries did their best to stay clear of IMF oversight.

The global crisis nonetheless re-established the IMF's central place as first responder to financial distress. The Fund was able to leverage its prior experience in responding to financial distress. Notably, the restoration of the IMF was largely due to events in and on the periphery of Europe rather than across the developing world (Lütz and Kranke 2014). The April 2009 G-20 meeting not only gave the IMF pride of place in crisis response efforts, but also yielded massive funding commitments to the institution.

The IMF's staff faces the challenges of protecting its restored franchise and image in an environment in which many of its former clients have pursued strategies that insulate them from the institution, are among its lenders, and have exercised increasing assertiveness in several domains. The IMF has been forced to negotiate to retain the influence that, until the East Asian crisis, it was able to take for granted. This negotiation is especially apparent in the domain of capital controls, where the IMF has often responded after the fact to unilateral decisions made by national authorities. Even where it retains substantial authority, its economists are responding to capital controls in ways that diverge from past practice (Grabel 2015b).

Winners, Losers, Spillovers, and Capital Controls

During 2009–14, developing and emerging countries received net capital inflows of US$2.2 trillion (Stiglitz and Rashid 2016). The vast inflows meant that many developing countries were confronted with surges of liquidity, asset bubbles, inflationary pressures, and currency appreciations. That the market capitalization of stock exchanges in Mumbai, Johannesburg, São Paulo, and Shanghai nearly tripled in the years that followed the global crisis is just one indicator of the fragility induced by these inflows (Stiglitz and Rashid 2016). Expansionary monetary policies in wealthy countries fed this flood of capital to developing country markets. In a departure from the old script, capital controls were necessitated by the side effects of the relative success with which many developing

countries navigated the global crisis and their own good fortune when it came to commodity prices and economic growth. This success, coupled with economic weakness and low returns on assets in wealthy countries, drove investors and speculators to developing country markets. The use of capital controls by what we might think of as 'winning economies' has, in my view, contributed importantly to the legitimation of this policy instrument in the eyes of policymakers, the IMF, the international investment community, and the neoclassical core of the economics profession.

Now the tide is turning. In 2015 net capital outflows from the developing world exceeded US$600 billion, which was more than 25 percent of the capital inflows that they received during the previous six years (Stiglitz and Rashid 2016). Taking previously unrecorded flows into account, the Institute for International Finance (IIF) estimates that total net capital outflows from developing and emerging economies amounted to US$735 billion in 2015. By comparison, total net outflows from developing and emerging economies as a whole were valued at US$111 billion in 2014 (IIF 2016), and East Asian economies experienced net capital outflows of only US$12 billion in 1997 (Stiglitz and Rashid 2016).

In this context, some developing countries have abandoned or loosened the inflow controls that they put in place during good times, and some have begun to implement new controls, particularly on outflows. These new controls have been implemented in response to the accelerating pace of outflows and the combined effects of slowing growth, falling commodity and asset prices, weakening currencies, and reserve dis-accumulation. The excess liquidity and asset bubbles generated during good times have inevitably given way to public and private debt overhangs, which are aggravated by the locational mismatch that is made worse by the weakening of developing country currencies. In addition, these pressures have been both induced and magnified by the unsettled state of international financial markets and the spillover effects of the monetary policy environment in wealthy countries (i.e., negative interest rates, Federal Reserve tapering and tightening). In this new environment we have reason to expect familiar, vicious macroeconomic cycles in the developing world. The experience with and the widening of policy space around capital controls may well pay dividends in the coming period.

'Too Much of a Good Thing'

Policymakers in a large set of developing countries deployed capital controls to mitigate the financial fragility and vulnerabilities induced by the large capital inflows that they received during much of the global crisis. In several country settings, controls were 'dynamic' (as per Epstein et al. 2004) such that policymakers tightened, broadened, or layered new controls over existing measures as new sources of financial fragility and channels of evasion were identified and/or when existing measures proved too tepid to discourage undesirable financial activities. Controls were also removed as circumstances changed.

Brazil is a notable exemplar of dynamic capital controls. The country is an interesting case because the government (particularly former Finance Minister Guido Mantega) staked out a strong position on policy space for controls throughout the crisis, and because the IMF's response to the country's controls exemplifies the evolution and equivocation in the views of Fund staff.

In late October 2009, Brazil began to utilize capital controls by imposing a tax on inflows of portfolio investment. They were intended to slow the appreciation of the currency in the face of significant capital inflows. Brazil imposed a 2 percent tax on money entering the country to invest in equities and fixed-income investments and later a 1.5 percent tax on certain trades involving American Depository Receipts, while leaving FDI untaxed. The IMF's initial reaction to Brazil's inflow controls was mildly disapproving. A senior official said: "These kinds of taxes provide some room for maneuver, but it is not very much, so governments should not be tempted to postpone other more fundamental adjustments. Second it is very complex to implement those kinds of taxes, because they have to be applied to every possible financial instrument," adding that such taxes have proven to be 'porous' over time in a number of countries (cited in Subramanian and Williamson 2009). In response, Subramanian and Williamson (2009) indicted the IMF for its doctrinaire and wrong-headed position on the Brazilian controls, taking the institution to task for squandering the opportunity to think reasonably about capital controls. A week later the IMF's then Managing Director Dominique

Strauss-Kahn reframed the message on Brazil's controls. The new message was, in a word, stunning: "I have no ideology on this"; capital controls are "not something that come from hell" (cited in Guha 2009).

The Brazilian government continued to strengthen and layer new controls over existing measures during October 2010 and July 2011. These included controls that specifically targeted derivative transactions and others that closed identified loopholes as they became apparent.[4] For example, in October 2010 the tax charged on foreign purchases of fixed-income bonds was tripled (from 2 to 6 percent), the tax on margin requirements for foreign exchange derivatives was increased, and some loopholes on the tax on margin requirements for foreign investors were closed. Despite an array of ever increasing controls, IMF economists called its use of controls 'appropriate' in an August 2011 review of Brazil (Ragir 2011). Brazilian policymakers began to narrow some capital controls in December 2011, though at the same time continued to extend others.

Many other developing countries implemented and adjusted controls on outflows and especially on inflows during propitious economic times. Some strengthened existing controls, while others introduced new measures. For some countries (such as Argentina, Ecuador, Venezuela, China, and Taiwan) these measures are part of broader dirigiste approaches to policy. For most other countries (e.g., Brazil, South Korea, Indonesia, Costa Rica, Uruguay, the Philippines, Peru, and Thailand), controls were part of a dynamic, multi-pronged effort to respond to the challenges of attracting too much foreign investment and carry trade.

In December 2008 Ecuador doubled the tax on currency outflows, established a monthly tax on the funds and investments that firms kept overseas, discouraged firms from transferring US dollar holdings abroad by granting tax reductions to firms that re-invest their profits domestically, and established a reserve requirement tax (Tussie 2010). In October 2010, Argentina and Venezuela implemented outflow controls. Argentina's controls were strengthened in October 2011. The country's capital and exchange controls were lifted in December 2015 following

[4] Fritz and Prates (2014) see controls on derivatives as distinct from (though complementary to) capital controls and prudential financial regulations.

the Presidential election of Mauricio Macri. Venezuelan capital and currency controls remain in force.

Peru began to impose inflow controls in early 2008. The country's central bank raised the reserve requirement tax four times between June 2010 and May 2012. The May 2012 measures included a 60 percent reserve ratio on overseas financing of all loans with a maturity of up to three years (compared to two years previously) and curbs on the use of a particular derivative (Yuk 2012). What is particularly interesting about Peru's measures is the way in which they were branded by the central bank. In numerous public statements the Central Bank President maintained that the country did not need capital controls even while it implemented and sustained its reserve requirement tax (Quigley 2013).

In August 2012, Uruguay imposed a reserve requirement tax of 40 percent on foreign investment in one type of short-term debt (Reuters 2012). Like Peru, its bilateral agreement with the USA could have made this control actionable. Currency pressures also induced Costa Rica to use capital controls for the first time in twenty years. The country began to use controls in September 2011 when it imposed a 15 percent reserve requirement tax on short-term foreign loans received by banks and other financial institutions (LatinDADD-BWP 2011). In January 2013, the Costa Rican President began to seek Congressional approval to raise the reserve requirement tax to 25 percent, while also seeking authorization to increase from 8 to 38 percent a levy on foreign investors transferring profits from capital inflows out of the country.

In another sign of changing sentiments during the crisis, the rating agency Moody's recommended that South East Asian countries use controls to temper currency appreciation (Magtulis 2013). Indeed, numerous Asian countries deployed new or strengthened existing controls during good times.

For instance, in November 2009 Taiwan imposed new inflow restrictions and at the end of 2010 controls on currency holdings were strengthened twice (Gallagher 2011). In 2010, China added to its existing and largely quantitative inflow and outflow controls (Gallagher 2011). In 2013 China's State Administration of Foreign Exchange (SAFE, which is the unit within the central bank that manages the RMB) took new steps to control 'hot money' flows (Monan 2013).

In June 2010, Indonesia announced what its officials termed a 'quasi-capital control' via a one-month holding period for central bank money market securities (raised to six months in 2011) and new limits on the sales of central bank paper by investors and on the interest rate on funds deposited at the central bank. During 2011 it reintroduced a 30 percent cap on short-term foreign exchange borrowing by domestic banks, and raised a reserve requirement on foreign currency deposits (Batunanggar 2013). The awkward labeling of controls in Indonesia suggested its government was still afraid of the stigma that long attached to capital controls.

Thailand introduced a 15 percent withholding tax on capital gains and interest payments on foreign holdings of government and state-owned company bonds in October 2010. In December 2012, the Philippines announced limits on foreign currency forward positions by banks and restrictions on foreign deposits (Aquino and Batino 2012).

As in Brazil, Korean authorities took a dynamic, layered approach to capital controls, while also targeting the particular risks of derivatives. But unlike Brazil, authorities reframed these measures as macroprudential and not as capital controls (see Chwieroth 2015). In 2010 Korean regulators began to audit lenders working with foreign currency derivatives, placed a ceiling on the use of this instrument, and imposed a levy on what it termed 'noncore' foreign currency liabilities held by banks. In 2011 Korea also levied a tax on holdings of short-term foreign debt by domestic banks, banned 'naked' short selling, and reintroduced a 14 percent withholding tax on foreign investment in government bonds sold abroad and a 20 percent capital gains tax on foreign purchases of government bonds (Lee 2011; ADB 2011).

"Stopping the Bleeding"

Some countries have and are using capital controls during the global crisis for the more customary reason of stemming a financial or economic collapse. In these cases, the IMF has tolerated controls on capital outflows. This is notable insofar as the Fund and the neoclassical heart of the economics profession have long seen outflow controls as far worse than inflow controls.

Iceland's policymakers put outflow controls in place to slow the implosion of the economy before signing an agreement with the IMF in October 2008. The agreement made a very strong case for the extension of these controls as means to restore stability and to protect the krona (IMF 2012a; Sigurgeirsdóttir and Wade 2015). In public statements on the matter, the IMF's staff repeatedly said that the country's outflow controls were crucial to prevent a collapse of the currency, that they were temporary, and that it was a priority to end all restrictions as soon as possible. The IMF's Mission Chief in the country commented that "capital controls as part of an overall strategy worked very, very well" (Forelle 2012), and the institution's Deputy Managing Director stated that "unconventional measures (as in Iceland) must not be shied away from when needed" (IMF 2011a). The rating agency, Fitch, praised the country's 'unorthodox crisis policies' when announcing that it had raised its credit rating to investment grade in February 2012 (Valdimarsson 2012). It should be said that neoliberals in the country did not share this enthusiasm for the unorthodox response or the IMF's advice (Danielsson and Arnason 2011).[5]

The IMF's characterization of and role in strengthening Iceland's outflow controls marked a dramatic precedent and revealed a fundamental change in thinking about capital controls. The December 2008 agreement with Latvia allowed for the maintenance of pre-existing restrictions arising from a partial deposit freeze at the largest domestic bank (IMF 2009b). Soon thereafter, a Fund report acknowledged that Iceland, Indonesia, the Russian Federation, Argentina and Ukraine all put outflow controls in place to 'stop the bleeding' related to the crisis (IMF 2009a). The report neither offers details on the nature of these controls nor commentary on their ultimate efficacy, something that suggests that controls—even and most notably on outflows—are being destigmatized by the context in which they are being used, and by the Fund's and, in the cases of Cyprus and Greece, the EU and the ECB's measured reaction to them.[6] Indeed, a recent report by the IMF's IEO (2015) takes note of the institution's greater tolerance for outflow controls during the

[5] Temporary outflow controls have turned out to be rather long lived—indeed the central bank and the Finance Ministry are planning to phase out the controls during 2016.

[6] See Chwieroth (2015) on the process of destigmatizing capital controls.

global financial crisis as exemplified by its support for outflow controls in Iceland, Cyprus, and Latvia.[7]

Cyprus was the first country in the Eurozone to implement capital controls during the global crisis. The IMF and the EU did not flinch when stringent outflow controls were implemented as the country's economy imploded in March 2013. Cyprus' capital controls evolved in the months that followed the March collapse and after it began to receive support in May 2013 under an IMF Extended Fund Facility. Capital controls began to be removed in March 2014, and the remaining controls were lifted in April 2015. Standard and Poors upgraded Cyprus' sovereign debt rating in September 2015, and in doing so cited the removal of capital controls (Zikakou 2015). Greece became the second Eurozone country to implement capital controls. Stringent outflow controls were put in place at the end of June 2015 once Eurozone leaders announced that they would not extend Greece's then current assistance package, and that the ECB would cap emergency liquidity assistance to the country's banks.

'Taper Tantrums' and the New Outflow Rout

Beginning in 2013, developing countries again began to adjust, experiment, and/or create space for diverse types of capital controls against the backdrop of growing financial fragility, weakening economies, depreciating currencies, and turmoil induced by international policy spillovers. New or tightened capital controls were implemented by policymakers in the context of the growing fragility in 2015 and early 2016. Some controls that were put in place in good times were loosened or abandoned.

For example, in June 2013 Brazil eliminated some remaining capital controls that were left over from the country's heady days. It reduced the tax on overseas investments in domestic bonds from 6 percent to zero, and removed a 1 percent tax on bets against the dollar in the futures market (Leahy and Pearson 2013; Biller and Rabello 2013). In March 2014, Costa Rica put in place a framework for new capital controls with the aim of giving the cen-

[7] The IEO (2015, p. 13) noted that staff did not approve of outflow and exchange controls in 2008 in Ukraine (see also Saborowski et al. 2014).

tral bank the ability to curb speculative money flows from abroad (Reuters 2014). And, in an indication of changing sentiments in challenging times, the governor of the Bank of Mexico, Agustín Carstens, said in January 2016 that it might soon be time for central bankers in the developing world "to become unconventional" to stem the vast tide of capital outflows (Wheatley and Donnan 2016). (This is particularly notable since as recently as 2015 he had spoken strongly against capital controls; see below.)

China's strategy of 'managed convertibility' has become increasingly difficult for officials to navigate in the wake of growing national and global economic turbulence and missteps by national policymakers, particularly involving decisions to devalue the currency. This strategy involves a complex mix of liberalizing capital controls so as to increase the convertibility of the RMB and increase its flow and use across borders, while also tightening existing and implementing new controls to protect the economy and the currency from volatile capital flows (Subacchi 2015, 2016). Liberalizing capital controls was also necessitated by policymakers' long-held goal of having the IMF agree to include the RMB in the SDR alongside other currencies that it had long designated as having 'global reserve currency' status. In November 2015, China achieved this (largely symbolic) goal. Against this backdrop and in a series of announcements in 2014, the country's policymakers eased some capital controls, such as those that restricted domestic investors from investing in foreign stocks and properties, firms from selling RMB denominated shares abroad, and doubling the daily range in which the RMB could trade (Barboza 2014; Bloomberg 2014). After the surprise decision to allow the RMB to devalue in August 2015, SAFE expended up to US$200 billion in reserves defending the currency during the next month, increased monitoring and controls on foreign exchange transactions, and imposed a 20 percent reserve on currency forward positions (Anderlini 2015). And following another round of large capital outflows in January 2016, SAFE implemented several new, ad hoc, and stringent capital controls.

In August 2013 India implemented capital controls on some types of outward flows. These restricted the amount that Indian-domiciled companies and residents could invest abroad (Financial Times 2013). Interestingly, then governor of the Reserve Bank of India, Duvvuri Subbarao, took pains to explain that these measures should not be labeled

as capital controls (despite the obvious point). In his last speech as central bank governor he said of these measures: "I must reiterate here that it is not the policy of the Reserve Bank to resort to capital controls or reverse the direction of capital account liberalization," and he emphasized that the measures did not restrict inflows or outflows by non-residents (Reuters 2013b). Market observers nevertheless dubbed them as "partial capital controls" (Ray 2013). When the new central bank governor, Raghuram Rajan took his place in September 2013, he promptly rolled back the new outflow controls (ibid.).

Tajikistan deployed several types of outflow controls during 2015 and 2016 in the context of the turmoil induced by falling oil prices. These involve administrative measures that attempt to stabilize the currency, closure of private currency exchange offices, the requirement that rouble-denominated remittances be converted to the national currency, restrictions on foreign currency transactions, and termination of the direct sale of foreign currency to the population (IntelliNews 2016; UNCTAD 2015; National Bank of Tajikistan 2015). Here, too, authorities attempted to brand these measures as something other than capital controls. Indeed, First Deputy Chairman of the country's central bank, Nuraliev Kamolovich, denied that these moves amounted to capital control in an interview with the *Financial Times* (Farchy 2016).

In December 2014, the Russian government put outflow controls in place, though these are being referred to in the country's press as 'informal' capital controls. The government set limits on net foreign exchange assets for state-owned exporters, required that large state exporting companies report to the central bank weekly and reduce net foreign exchange assets to the lower level that prevailed earlier in the year, and the central bank installed supervisors at currency trading desks of top state banks (Kelly et al. 2014).

Ukraine deployed several outflow controls in February 2014. These measures include a ceiling on foreign currency purchases by individuals; a ban on buying foreign exchange to invest overseas or repay foreign debt early; a five day waiting period before companies can receive the foreign exchange that they have purchased; and a limit on foreign currency withdrawals from bank deposits (to around US$1500 per day (Strauss 2014)).

The case of Azerbaijan is illustrative of the continued tensions over capital controls within some countries and also of the rating agencies' new measured responses to them. In January 2016 the country's Parliament passed a bill that would impose a 20 percent tax on foreign currency outflows and allow repayment of dollar loans up to US$5000 at the exchange rate that prevailed prior to the currency's devaluation. The country's President, Ilham Aliyev, rejected the bill the next month. In doing so, the President said that "[it] was a mistake to tax foreign-currency outflows as it would scare away foreign investors" (Agayev 2016). In the period between the Parliament's passage and the President's rejection, the rating agencies had a measured reaction to the prospect of outflow controls. Standard and Poors lowered the countries rating, but cited low oil prices in doing so, and Fitch did not change their rating saying that "the introduction of the capital controls does not 'automatically' have consequences for the country's sovereign rating" (Eglitis 2016; Financial Times 2016).

Beginning in late 2014, Nigeria began to implement outflow controls as falling oil prices and a concomitant drop in foreign reserves destabilized its economy. In December 2014 limits on currency trading were imposed. And starting in April 2015, and continuing through the year, new outflow controls were put in place. These included restrictions on access to hard currency and cross-border payments, daily limits on foreign ATM withdrawals, and restrictions on access to dollars (Ferro 2014; Reuters 2015).[8] In February 2016, the IMF's Christine Lagarde began to call publicly on the government to remove capital and exchange controls, abandon the currency peg, and borrowing from an old script—to pursue fiscal discipline and structural reform to bolster growth (Reuters 2016).

Similar Pressures, Dissimilar Responses, and Legal Constraints

Not all policymakers have responded to the pressures induced by large inflows, outflows, and policy spillovers with capital controls. Policymakers

[8] Thanks to Michael Akume for research on Nigeria.

in some countries that enjoyed high inflows during much of the global crisis, such as Turkey, Chile, Mexico, and Colombia, publicly rejected inflow controls. Instead they increased their purchases of dollars and used expansionary monetary policy. These divergent responses to similar pressures reflect many factors, not least of which are differing internal political economies and the resilience of the view that central banks must signal their commitment to neoliberalism.

There is far more to the matter of resisting capital controls than the long half-life of neoliberalism, however. Some countries simply cannot introduce capital controls—either on inflows or outflows—because of bi- or multilateral trade and investment treaties with the USA (such as the North American Free Trade Agreement, NAFTA, and the Dominican Republic–Central American Free Trade Agreement), the EU, and the OECD (Gallagher 2014, Chap. 8; 2012; Shadlen 2005; Wade 2003). The scope of these constraints could be expanded if the pending multilateral trade agreement, the Trans-Pacific Partnership (TPP), goes into effect.[9]

Governments face other restrictions on controls from the obligations to liberalize financial services under the WTO (Gallagher 2012). Article 63 of the Lisbon Treaty of the EU enforces open capital accounts across the union and requires that members not restrict capital transactions with other countries. However, Cyprus and Greece are members of the EU, and they did deploy stringent outflow controls in 2013 and 2015, respectively. Indeed, the EC and the ECB gave their blessing to capital controls on the grounds that they were temporary and essential to preventing large scale investor exit and the collapse of the banking system. Other restrictions appear in the OECD's Code of Liberalisation of Capital Movements, though since it is not a treaty the obligations are not actionable (Abdelal 2007; Gallagher 2012).

At the time when many of these agreements were negotiated, their restrictions on capital controls no doubt seemed redundant since controls were effectively blocked by the effective constraints imposed by the IMF, rating agencies and investors. Today, however, in the face of

[9] A separate annex to the TPP allows Chile alone to maintain or enact capital controls that are consistent with its own domestic laws to ensure financial stability.

reversals by the previous enforcers of neoliberalism, the provisions are consequential. Chile's refusal to use controls during the global crisis may have as much to do with its 2004 trade agreement with the US as with neoliberal ideology. The US–Chile Free Trade Agreement exposes the country to lawsuits by investors who are able to demonstrate that they are harmed by controls. Mexico's situation is similar. Here neoliberal views are backed up by the strictures in NAFTA that threaten to punish any change in its policy stance.[10] By contrast, Brazil was free to utilize controls during the global crisis because it has not signed bilateral treaties with the US.

Reframing controls as something other than controls seems to be one viable avenue in cases where policymakers do not have the appetite to push the limits of trade/investment agreements (as with Peru and Uruguay), or where they otherwise fear the anti-free market stigma. Hence, Korea's macroprudential measures;[11] Indonesia's quasi-controls; Tajikistan's denial that it is using controls; India's use of partial controls, and the Central Bank governor's message to foreign investors; and Azerbajan's President blocking capital controls because of the perceived reaction by foreign investors.[12]

Revising the Rule Book

Since 2008 many developing countries have implemented controls without seeking permission from the IMF. For many (but not all) countries,

[10] NAFTA includes a balance of payments exception that allows controls when the host states "experience serious balance of payments difficulties, or the threat thereof," but controls must be temporary and non-discriminatory (Gallagher 2014, p. 181).

[11] Korea's 2007 free trade agreement with the US allows temporary controls under certain circumstances.

[12] In some cases, this reframing may be less instrumental than I suggest. Chwieroth (2015) argues that Korean authorities see the measures they put in place during the global crisis as prudential and consistent with their acceptance of the norm of liberalization. I should add here that the re-normalization of capital controls may involve rebranding, the focus of this paper, and/or re-framing of capital controls as something other than capital controls. The former represents a more direct assault on the pre-existing neoliberal ideology, and is expected where states have achieved substantial policy autonomy. The latter amounts to 'cheating'—attempting to use a strategy that is not permitted under the neoliberal rules of the game without admitting it. We should expect this strategy in cases where states have not achieved substantial policy autonomy.

controls were a response to the costs of their relative economic success during much of the global crisis. It is hard to imagine that capital controls could have been rebranded as legitimate policy tools as quickly and deeply as has been the case had it not been for the divergent effects of the crisis across the globe, and the initiatives of many of the winners from the crisis to assert control over financial flows. Just as history is written by the victors, so may it be the case that the rebranding and re-legitimizing of a forbidden policy tool depends primarily on the practices and strategies of those countries whose success grants them the latitude and confidence, and the influence over other countries, not just to 'cheat' in a policy domain but to revise the rule book completely. Thus, whether the IMF and the economics profession have changed fundamentally on capital controls matters less than the context in which they are being utilized.

Outflow controls have also been legitimized by widespread acknowledgement of their success in Iceland and elsewhere. Outflow controls are nevertheless still seen in a different light than inflow controls, but the crisis has catalyzed a degree of rethinking on this controversial instrument as well. It may be that outflow controls become necessary in more national contexts if present turbulence accelerates, as seems likely. This may test the limits of the policy space around this tool.

The rebranding of controls has also been facilitated by the fact that carry trade pressures caused central bankers in wealthy countries to reconsider their long-held opposition to capital controls. For example, the head of the Swiss National Bank announced that it was considering controls on foreign deposits when the currency was under pressure, though these have not been used (Ross and Simonian 2012). A top Bundesbank official signaled a softening in its traditional position in stating that "limited use of controls could sometimes be appropriate" to counter currency pressures (Reuters 2013a). Moreover, the emergence of unconventional monetary policies and the growing discussion of their spillover effects may have triggered recognition that desperate times require desperate measures. This may reflect what Benlialper and Cömert (2016) term a broadening of central bank practice and policy targets during the crisis.

The Economics Profession, the IMF, and the New Pragmatism on Capital Controls

Today IMF staff economists and leading academic economists have taken steps toward elaborating a theoretical and empirical case for capital controls.

Neoclassical Economics and Capital Controls

Two views on capital controls have predominated among academic economists who advocate neoliberalism. The first, and minority view, is associated with libertarian thought. From the libertarian perspective, controls are a violation of investor rights. The case against them is therefore impervious to new empirical evidence or a change in economic conditions. In contrast, neoclassical welfarist critics have long held that capital controls are counterproductive.

The neoliberal case against capital controls seems to have lost some of its luster during the global crisis, though some ardent defenders have been left standing. For instance, in a discussion of inflow controls, Mexico's Central Bank Governor Carstens said: "[C]apital controls … don't work, I wouldn't use them, I wouldn't recommend them" (Carstens 2015). In the same speech he indicted outflow controls: "when investors come in [to a new country] they first look to see where the exit is and if it doesn't exist, they won't come in."[13] Some neoliberals (as we have seen earlier) have rebuked the IMF for its support of capital controls in Brazil and Iceland, and others, such as Cline (2010), have rebuked the IMF for its new acceptance of controls. The conservative US think tank, the Heritage Foundation, has been sharply critical of the IMF's recent acceptance of capital controls, and in an issue brief highlights with horror a 2012 speech made by the IMF's Lagarde in praise of Malaysia's 1998 controls (Olson and Kim 2013).

[13] Recall that (as earlier noted) Carstens (2015) spoke more catholically about controls in January 2016.

Despite this notable camp of holdouts, we find evidence within neoclassical thought of a new pragmatism as concerns capital controls. Prior to the global crisis, neoclassical economists almost universally held that controls were costly interventions in the market because they raise the cost of capital, especially for small and medium-sized firms, and generate costly evasion strategies (Forbes 2005; Edwards 1999). Capital controls were therefore imprudent since developing countries could hardly afford new sources of inefficiency and distributional disparities.

Recent research in neoclassical economics challenges the critique by emphasizing the negative externalities associated with highly liberalized international financial flows, particularly in the absence of international coordination of monetary policies. The research has helped to legitimize capital controls, particularly targeted, temporary controls, and some of this research also offers support for international policy coordination and/or regulations on capital flows in both source and recipient countries.

There are three dimensions to the new academic research. The first strand is associated with the work of Korinek (2011), and is termed the "new welfare economics of capital controls." It assumes that in an environment of uncertainty, imperfect information and volatility, unstable capital flows have negative externalities on recipient economies (see also, Aizenman 2009). In this approach liberalized short-term capital flows are recognized to induce ambient risk that can destabilize economies. Inflow controls induce borrowers to internalize the externalities of risky capital flows, and thereby promote macroeconomic stability and enhance welfare (Korinek 2011).

A second strand of research, associated with Korinek (2011, 2014) and Rey (2014, 2015), emphasizes the way in which capital controls protect developing countries from the international spillover effects of monetary policy in wealthy countries, and it explicitly takes up the absence of multilateral mechanisms to coordinate monetary, capital control, and other prudential policies. Research by Korinek and Rey provides rigorous academic support for the claims of Brazil's Mantega and India's Rajan (among others) regarding currency wars and spillover effects. An article in the *Economist* put the connection between these spillover effects and

capital controls quite clearly: "QE has helped to make capital controls intellectually respectable again" (Economist 2013).

Korinek (2013) argues that the negative international spillover effects of expansionary monetary policy during the global crisis highlights the need for multilateral coordination. An IMF Staff Discussion Note (in which Korinek is one of the authors) extends these themes (Ostry et al. 2012). The report argues that the coordination of capital controls between source and recipient is welfare improving since the costs of controls increase at an increasing rate with the intensity of controls. Thus, a more efficient outcome is to spread the costs of controls across countries so that no one country shoulders all of the costs. In a similar vein, using data from 1995 to 2012, Ghosh et al. (2014) find that imposing capital controls on both source and recipient countries can achieve a larger decrease in the volume of flows, or the same decrease with less intrusive measures on either end. Thus, international coordination achieves globally more efficient outcomes, and what they term costly 'capital control wars' can be avoided.

Rey's (2014, 2015) work is also motivated by the unwelcome international spillover effects of wealthy country monetary policy. These spillover effects necessitate use of targeted capital controls on inflows and outflows, particularly since she sees international coordination on monetary policy spillovers as being "out of reach." Capital controls are necessary to protect developing countries from what she terms the 'global financial cycle,' i.e., the instability triggered by large, sudden inflows associated with carry trade activity and their equally sudden exit (ibid). In a lecture at the IMF, former Federal Reserve Chair Bernanke criticized Rey and Mantega by name for being too willing to portray policymakers in developing countries as "passive objects of the effects of Fed policy decisions" (Bernanke 2015, especially pp. 24, 30, 33, 36, 44), and argued that international cooperation on monetary policy was neither necessary nor appropriate. Bernanke (ibid.) endorsed the use of targeted capital controls to tackle the unwelcome international spillover effects of monetary policy, though he also noted the importance of regulatory and other macroprudential measures.

Other neoclassical economists have wrestled with the international spillover effects of monetary policy and capital controls during the crisis.

Nobel Laureate Michael Spence wrote of the troubling 'financial protectionism' that was occasioned by expansionary monetary policy in rich countries. He (and his co-author) worried that such financial protectionism would accelerate as the era of cheap capital came to a close (Dobbs and Spence 2011). But despite characterizing controls as financial protectionism, Spence spoke favorably about their utility in developing countries during a 2010 speech at the Reserve Bank of India. There he called capital controls on such flows "essential as part of the process of maintaining control" in developing countries, and also noted that most of the high growth developing countries have had capital controls (Spence 2010).

A third strand of new neoclassical research is empirical and substantiates the theoretical claims of the welfarist approach. Ghosh and Qureshi (2016) review a large body of empirical evidence that shows that inflow controls change the composition of capital inflows and do not discourage investors. Even Forbes, a long-standing critic of controls, finds that Brazilian taxes on foreign purchases of fixed-income assets between 2006 and 2011 achieved one of its key goals of reducing the purchase of Brazilian bonds (Forbes et al. 2011). Another type of empirical work involves 'meta analysis' of a large volume of existing studies. Magud and Reinhart (2006) find that inflow controls enhanced monetary policy independence, altered the composition of inflows, reduced real exchange rate pressures, and did not reduce the aggregate volume of net inflows. (See also the survey in Magud et al. 2011, which includes studies conducted in the early years of the global crisis.[14])

Empirical research by economists outside the profession's mainstream reaches beyond the tepid, conditional endorsement of capital controls that we find in the recent work of neoclassical economists (e.g., Epstein 2012; Erten and Ocampo 2013; Gallagher 2014; Grabel 2015b). Erten and Ocampo (2013) provide what is perhaps the most expansive support for the achievements of a range of capital controls, including those on

[14] Adair Turner, former chair of the UK's Financial Services Authority, takes note of the enduring resilience of the liberalization ideal despite empirical evidence (Turner 2014). Ghosh and Qureshi (2016) root the demonization of inflow controls in a 'guilt by association' with outflow controls. They endorse the former, whereas they distance themselves from the latter, which they see as broad based and difficult to reverse.

outflows. Using data from 51 emerging and developing economies from 1995 to 2011, they find that capital controls that target inflows, outflows, and foreign exchange-related measures were associated with lower foreign exchange pressures, and reduced exchange rate appreciation. They also find that these three types of measures enhanced monetary policy autonomy, that increasing their restrictiveness in the run-up to the global crisis reduced the growth decline during the crisis (and thereby enhanced crisis resilience), and that countries that used these measures experienced less overheating during post-crisis recovery when a new surge in capital inflows occurred.

The IMF and Capital Controls

The evolution in thinking on capital controls by academic economists is reflected in, and reinforced by, developments at three over-lapping levels of practice at the IMF: research, official statements by key officials, and policy recommendations by its staff. We find continued evidence of discomfort or tension around capital controls that is reflected in efforts to develop a hierarchy among types of capital controls and the circumstances under which they are most acceptable.

In February 2010 a team of IMF economists published a thorough survey of econometric evidence that commended inflow controls for preventing crises and ultimately reducing the risk and severity of crisis-induced recessions, and for reducing fragility by lengthening the maturity structure of countries' external liabilities and improving the composition of inflows (Ostry et al. 2010). These findings pertain to controls prior to and after the Asian crisis, as well as during the global crisis. After Ostry et al. (2010) was released, prominent IMF watchers praised the Fund for finally embracing a sensible view of controls. For example, Ronald McKinnon stated "I am delighted that the IMF has recanted" (cited in Rappeport 2010); former IMF official, Eswar Prasad, states that the paper represented a 'marked change' in the IMF's advice (cited in Wroughton 2010), while Dani Rodrik stated that the "the stigma on capital controls (is) gone," and that the report "is a stunning reversal—as close as an institution can come to recanting without saying, 'Sorry, we messed up'"

(Rodrik 2010). Rodrik also noted that "(j)ust as John Maynard Keynes said in 1945—capital controls are now orthodox" (cited in Thomas 2010, p. B1). No less telling is the sharp rebuke to Ostry et al. (2010) by Cline (2010), which is illustrative of the discomfort that 'true believers' in capital liberalization have with what they see as the Fund's troubling, wrong-headed new embrace of controls.

Research on controls spilled out from various quarters of the IMF through 2011 to 2015. The IMF's crisis-induced research on controls culminated in a December 2012 report of the Executive Board, which the IMF terms the 'Institutional View' (IMF 2012b, c). The institutional view report makes clear that inflow and outflow surges induce instability; that countries should not consider capital liberalization prematurely; that temporary, targeted, and transparent inflow and even outflow controls may be warranted during turbulence, though they should not discriminate against foreign investors; that countries retain the right under Article VI to put controls in place; and that the IMF's new, more permissive stance on controls may conflict with and be subsumed by trade and other agreements. Particularly notable is the fact that the report refrains from denigrating capital controls as a last resort measure—a theme that had recurred throughout IMF research in 2010 and 2011—and that it sanctions the deployment of outflow controls during crises.

There is clear evidence in the institutional view of the IMF's continued effort to 'domesticate' the use of controls in the language around targeted, transparent, temporary, and non-discriminatory measures. Moreover, arguments in the report continue to be guided by the view that capital liberalization is ultimately desirable, though claims to this effect are more nuanced than in the past.[15] Not least, the report rejects the presumption that this is the right policy for all countries at all times. Tensions over these and other matters among members of the IMF's Executive Board were given an oblique airing in a Public Information Notice released by the Fund, and more directly in press accounts, many of which focused on criticisms of the report by Paulo Nogueira Batista, then IMF Executive Director for Brazil and ten other countries (IMF 2012b). Criticism by Nogueira Batista also focused on the failure of the institutional view to

[15] See Fritz and Prates (2014) for a critique of the institutional view on these and other grounds.

consider the role of push factors from wealthy countries and the IMF's lack of evenhandedness (Prasad 2014b, p. 195). That said, the fact that the IMF has shifted the discussion of capital controls away from straight economics and toward the legal and institutional conditions required for their success is further evidence that the most stubborn form of resistance to controls on economic grounds has been overcome.[16]

The IMF continues to wrestle with the interpretation and practical implications of its own institutional view. An April 2013 "Staff Guidance Note" aimed at providing guidance as to how IMF staff should interpret the institutional view (IMF 2013). The guidance note reiterates that "staff advice should not presume that full liberalization is an appropriate goal for all countries at all times," made allowance for "a temporary re-imposition" of [capital flow measures] under certain circumstances, but reiterates that they should be "transparent, targeted, temporary, and preferably non-discriminatory" (pp. 9–10, 16). Despite the growing acknowledgement of spillover effects, the guidance note rejects the view that capital source countries should be expected to take spillover effects into account (p. 17). A December 2015 report prepared for IMF staff (IMF 2015) probes what the institutional view and the 2013 guidance note mean specifically for outflow controls. In doing so, the 2015 report says that outflow controls (like inflow controls) should be transparent, temporary, lifted once the crisis conditions abate, and should seek to be non-discriminatory, though it does acknowledge that sometimes residency-based measures may be hard to avoid (IMF 2015, fn. 1). The report also observes that unlike capital controls on inflows, temporary controls on outflows generally need to be comprehensive and adjusted to avoid circumvention (p. 3), and that "re-imposition of [capital controls] on outflows can be appropriate and consistent with an overall strategy of capital flow liberalization … even in non-crisis-type circumstances if premature or improperly sequenced liberalization … outpaced the capacity … to safely handle the resulting flows" (p. 4).

[16] Chwieroth (2014) argues that the greater equivocation on controls in the institutional view reflects the fact that official documents require member state approval, whereas reports such as Staff Position Notes do not.

The Talmudic process of interpreting the institutional view that has followed its release reflect not just hedging and discomfort, but also deep internal conflicts within and outside the IMF around its development (see the IMF's IEO 2015, p. 9, fn15; and Gallagher 2014, Chap. 6). The IEO (2015) notes that it is uncertain whether implementation of this view will result in consistent IMF advice on capital controls, owing to the fragile nature of the consensus that sustains it, the resilience of internal conflict around the matter, and the constraints on controls in trade and investment agreements. Preliminary evidence suggests a basis for cautious optimism: the 2015 IEO report reviews the IMF's Article IV reports from January 2006 to August 2014, and finds that staff advice on capital controls was more discouraging in the early part of this period, and more supportive and even encouraging of such measures from 2010 on (p. 12).

Beyond the research, public statements by current and former officials at the BWIs beginning in 2009 further illustrate the normalization, lingering ambivalence, and attempt to domesticate the use of controls. For instance, former IMF First Deputy Managing Director, John Lipsky, acknowledged in a December 2009 speech that temporary "(c)apital controls also represent an option for dealing with sudden surges in capital flows" and that "(a)bove all, we should be open-minded" (Lipsky 2009). Public statements by the IMF's Strauss-Kahn illustrate well the grudging evolution in the IMF's views. In public statements in 2009 Strauss-Kahn emphasized the costs of capital controls, and that they tend to lose effectiveness over time (IEO 2015, Box 3). But in a July 2010 speech he reframed his message: "it is … fair that these countries would try to manage the inflows" as a last resort against inflow-induced asset bubbles (Oliver 2010); and later in the year he reiterated what was by then the new mantra that capital controls are a legitimate part of the toolkit (Strauss-Kahn 2010; IEO 2015, p. 16). In 2010 the director of the Fund's Western Hemispheric department made a case (unsuccessfully) for the utility of controls in Colombia owing to the appreciation of its currency (Crowe 2010). The IMF's Lagarde spoke in 2012 and 2014 of the utility of temporary, targeted capital controls (IEO 2015, box3); and in March 2015 she observed that there is scope for greater cooperation in connection with monetary policy spillovers (Lagarde 2015).

Given the unevenness of the IMF's position on capital controls after the Asian crisis, the research, policy advice and statements coming from key officials during the global crisis mark by its standards a minor revolution. Change at the Fund has been uneven, to be sure, with one step back for every two steps forward. None of this should be surprising. We should expect that deeply established ideas hang on despite their apparent disutililty (Grabel 2003a). We should expect to find continuing evidence of tension and equivocation in research by academic economists and in future IMF reports and practice. But for now, at least, welfarist arguments for controls have been embraced at the top of the profession, and this is apt to continue to cast a long shadow over the IMF and beyond. More importantly, and as I have argued throughout, change at the IMF and in the economics profession is only one of a larger set of factors that have legitimated capital controls.

5.4 Summary and Conclusions

In the end, whether the IMF's new openness on capital controls fades with the crisis may not matter insofar as the institution has been rendered less relevant as it faces increasingly autonomous and assertive developing country members (some of which emerged as its lenders earlier in the crisis). The fact that economies that performed relatively well during the crisis successfully utilized controls has eliminated the long-standing stigma around the instrument. That the Fund has also acknowledged the utility of outflow controls in countries in crisis also makes it harder to envision a return to pre-2008 views, something that may turn out to be quite important if the current instability continues to deepen.[17]

As with most rebranding exercises there is uncertainty about whether the new framing will prove sufficiently sticky, especially in the context of tensions and countervailing impulses at the IMF and elsewhere, a resilient bias within economics against state management of economic flows, and new attempts to assert outflow controls in times of distress that

[17] Another possibility is that conflict over controls has decisively shifted from the economic to the legal arena of investment and trade agreements, as I suggested earlier.

would run counter to the interests of powerful financial actors. For now, though, there seems to be substantial momentum propelling increasing use of and experimentation with the flexible deployment of capital controls, in some cases with IMF support and most other cases without IMF resistance. The widening of policy space and the practical experience with capital controls gained during the global crisis may prove consequential in the coming period. Even if the problems of 'doing too well' fade across the developing world (as seems likely), the experiments with controls on capital inflows during better times may pay important dividends in the challenging times ahead. A critical test of recent and ongoing experiences with capital controls will occur in future crises, as states rely on and adjust fledgling practices and policies in hopes of dampening instability and otherwise managing turbulence better than they had over the course of previous crises. The coming period may test—sooner rather than later—the resilience of the new openness to controls.

In my view it is critical that efforts be made to maintain and expand the opportunity that has emerged in the crisis environment for national policymakers to experiment with capital controls and to adjust them as circumstances warrant. Hence, the pressing policy challenge today is to construct regimes that expand national policy autonomy to use capital controls while managing cross-border spillover effects. This certainly suggests abandoning (or, at the very least, renegotiating) the strictures on capital controls in existing and pending bilateral, and multilateral trade and investment agreements. It also suggests the need (ideally) to develop frameworks for burden sharing and international cooperation in the case of spillover effects. Moreover, historical and recent experience show that capital controls on inflows and outflows should be thought of not as a last resort, but rather as a permanent and dynamic part of a broader prudential, counter-cyclical toolkit to be deployed as internal and external conditions warrant; and that there are circumstances wherein controls may need to be blunt, comprehensive, significant, lasting, and discriminatory rather than modest, narrowly targeted and temporary (Epstein et al. 2004; Erten and Ocampo 2013; Fritz and Prates 2014; Grabel 2003b, 2004; Rodrik 2015).[18]

[18] Stiglitz and Rashid (2016) take what I see as a more modest view, such that current and coming turbulence in developing economies may necessitate quick action that includes targeted and time bound capital controls, especially on outflows.

Any regime that seeks to develop a framework for capital controls should err on the side of generality, flexibility, and permissiveness; should involve and promote cooperation by both capital source and recipient countries; and should embody an even-handed acknowledgement that monetary policies, like capital controls, have positive and negative global spillover effects that necessitate some type of burden sharing. It is therefore heartening that the crisis appears to have occasioned the rediscovery of the views of Keynes and White,[19] and that these views have been given new life by the widespread use and rebranding of capital controls in many national contexts and by the related attention to currency wars and policy spillovers. Reconsideration of these matters by leading policymakers, neoclassical economists, and IMF researchers has also shifted neoclassical economists and the IMF quite far from their blanket embrace of capital liberalization prior to the Asian crisis.

The spread of capital controls and the conflict over spillovers also highlight the problems associated with the absence of global policy coordination. Brazil's former Finance Minister raised this matter on many occasions. More recently, India's Central Bank Governor Rajan in October 2015 began to be openly critical of IMF support of the easy money policies in wealthy countries, the tide of competitive and nationalist monetary easing, and the IMF's failure to flag the negative spillover effects of such measures (Times of India 2015). In this context, Rajan has proposed that the IMF (and possibly the G-20 and BIS) study this matter seriously, and develop a system for passing judgment on unconventional monetary policies and the severity of their spillovers in relation to their possible effects on growth. This might involve a panel of 'eminent academics' appointed by the IMF, G-20 and/or BIS who would rate polices using a color coded (red/green/orange light system) (Krishnan 2016), or might involve the IMF passing such judgments itself (Rajan 2016).

In this environment of disruption, economic and institutional change, intellectual aperture and uncertainty we find a productive expansion of policy space for capital controls and a movement away from the reification of capital flows and other aspects of financial liberalization within neoclassical economics, something that may ultimately be seen as an

[19] On these views, see Horsefield (1969, pp. 31, 65) and Steil (2013, pp. 134, 150).

important legacy of the global crisis. This change, messiness, and uncertainty exemplify what I see as the productive incoherence of the present environment.

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6

Capital Controls and the Icelandic Banking Collapse: An Assessment

J.S.L. McCombie and M.R.M. Spreafico

Abstract This chapter assesses the causes and consequences of the Icelandic banking collapse of 2008. It examines the reasons behind the rapid growth of the banks over the subsequent few years following their privatization, the lack of prudential regulation and the high-risk loan strategy of the banks. These, together with the failure of the Central Bank of Iceland to act as a lender of last resort of foreign currency, made the collapse of the financial system almost inevitable. The IMF was called in and a notable aspect of its rescue package was the imposition of capital controls. This can be seen as the culmination of a secular change of the IMF's attitude to the regulation of cross-border financial flows. The chapter presents an assessment of how effective this strategy has been. It concludes with a more general discussion of the political economy of capital controls.

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6.1 Introduction

For a small country, with a population of only about one-third of a million (about the size of the city of Cardiff), Iceland has, since the global financial crisis, attracted a great deal of attention from economists. In some ways, it presents a microcosm of much that went wrong with the financial system prior to the subprime crisis. The privatization of the Icelandic banking system in 2002 led to its explosive growth. A risky banking strategy was followed in the face of ineffective regulation, either directly by the regulatory body (the Financial Supervisory Body or FME) or indirectly by the financial markets, per se. Consequently, Iceland's complete collapse of its banking system in 2008 and the causes behind it present an informative case study of a financial disaster (Wade and Sigurgeirsdóttir 2012). Not least, this is because there is available perhaps the most complete explanation of reasons behind any banking collapse. This is contained in the nine-volume report of the Special Investigatory Commission (SIC)[1] to the Althingi (the Icelandic Parliament) published in 2010, which was the antithesis of a whitewash.

What is remarkable is both the rapidity of the growth of a banking system where, in seven years, the banks grew twentyfold and also the speed with which they collapsed. This led to their nationalization. The collapse of "the Icelandic banks, taken together, would be the third largest corporate failure in history behind only Lehman Brothers and Washington Mutual" (Danielsson and Kristjánsdóttir 2015).

The collapse led to the intervention of the IMF and what is surprising is the institution's reaction to the capital controls that the government had rushed into place. The IMF's hostility over the last quarter of a century, or so, to any form of control on cross-border financial flows

[1] Only short, but informative, excerpts are available in English. Johnsen (2014) has provided a detailed account of the crisis.

had, after the Asian Financial Crisis, mellowed to some degree. However, this was the first time the IMF had actually consented to their introduction. Some economists (Grabel 2015) saw this as a volte face when compared with other recent IMF rescue programmes. And, in many ways, the Icelandic crisis did mark a turning point to the IMF's attitude towards capital controls.

This paper proceeds as follows. In the next section, we discuss the spectacular growth of the Icelandic banking system. Then we analyse the reasons for its collapse and also the aftermath. The next section, 'The Crisis in Retrospect', looks at some competing explanations for the collapse. We next consider the effectiveness of the introduction of capital controls; although it is perhaps still too early to come to a definitive conclusion (see also Carmona 2014; and Sigurgeirsdóttir and Wade 2015). This is especially true as at the time of writing (April 2016) the capital controls are still in place after eight years. A short report by the research department of the Danske Bank in 2006 was a major factor in raising international awareness of the precarious position of the Icelandic banks. In the course of doing so, the report compared Iceland to Thailand on the eve of the Asian Financial Crisis in 1997. We look briefly at the evidence for this and find that there are indeed striking similarities. Finally, we conclude with a more general discussion of the political economy of capital controls.

6.2 The Rise and Fall of the Icelandic Banking System

For many years, the small economy of Iceland was dominated by its fishing industry and the production of aluminium. However, for a few years, relative to its size, Iceland had become an important international financial centre. The effectiveness of the deliberate policy of rapidly expanding the banking sector meant that it came to overshadow the Icelandic economy. For a few years, the banking sector made Iceland one of the wealthiest countries in the world in terms of per capita income and consumption, both of which exceeded those of the USA. At its financial zenith, shortly before the banking collapse, the consolidated financial assets of the three big banks (Glitnir, Kaupthing and Landsbanki) were

over nine times the size of Iceland's GDP (Dwyer 2011). By way of contrast, in 2003, the ratio was less than two. Comparisons were drawn with other small prosperous countries dominated by finance, namely Ireland, Luxembourg, and Switzerland.

It is interesting to note from the beginning that the rapid growth of the banks was such that they were almost certain eventually to fail, even if there had been no world financial crisis in 2008 (Flannery 2009). The report of the SIC emphasized the excessive growth of the banking system and lack of effective regulation by the financial regulatory authority (FME). The remarkably small FME simply had neither the resources nor the expertise to cope with the rapid growth of the banks. Furthermore, the Central Bank of Iceland (CBI) pursued lax monetary policy and the three banks themselves engaged in widespread lending practices that were imprudent, and indeed possibly illegal, especially with respect to loans to their owners and their associates. Jännäri (2009) presents a detailed assessment of the performance and failings of the regulatory system.

Wade and Sigurgeirsdóttir (2010) have traced the close ties of the political parties to commerce and finance in the early post-war period where "market transactions became political and personal, as credit and jobs were allocated by calculation of mutual advantage" (p. 11). The financial deregulation and the privatization of the banks were no exception. Financial deregulation began in 1993 when Iceland, as part of the European Free Trade Area, joined with the countries of the European Economic Community to form the European Economic Area (EEA), a European free trade area. This required the free movement of capital as well as goods and services. It was at this time the FME was established and the CBI became nominally independent; 'nominally', that is, because it still had close links with the political parties. In the 1990s, the financial sector played only a small role in the Icelandic economy. It was small and consisted mainly of publically owned banks, but this was to radically change in the early 2000s.

The banks were privatized in 2002 with one of the big three, the Landsbanki, allocated to the leaders of the Independence Party and another, the Kaupthing, allocated to those with influence in the Center Party, the Independence Party's coalition partner. The investor group Samson, which was owned by these politicians, and associated groups,

obtained a 45 percent interest in the Landsbanki, then the country's largest bank. There was no foreign competition in the privatization process as foreign banks were effectively barred from tendering for political reasons, even though at least one expressed an interest (OECD 2009, p. 19). This was the opposite of the stated intention, which was to encourage foreign banks to take a share in the privatized banks and hence bring with them their considerable banking experience. The third bank was formed by the coalescing of a number of smaller ones with a single dominant shareholder. The new owners set up private equity companies that, in turn, bought large numbers of shares in the banks. Thus, the Icelandic banking system became highly concentrated with a few large shareholders and with close ties to the political elite. Boyes (2009) estimates that at this time the size of the Icelandic financial elite was as small as 30 people. As Wade and Sigurgeirsdóttir (2012) note, it was a curious mix of free market deregulation and crony capitalism, the former enhancing the latter. By 2003, the Icelandic banking system began to grow at an extraordinarily fast rate, aided by low world interest rates and free capital mobility.

The Icelandic banks initially attracted high ratings from the international rating agencies, primarily because of the banks' close political links and their implicit government support. There was also a hybrid merger of the investment banks with the commercial banks, with no sharp demarcation drawn between them. Given Iceland's previous reliance on fishing and aluminium, this could be seen to be an attempt to diversify the economy and to turn Iceland into a financial centre. The rapid growth of the banks was enabled by their access to the international wholesale financial markets aided by their membership of the EEA. Their explosive growth came over the period 2003 to 2007, or, in other words, some years after financial deregulation.

As the SIC (2010) report notes, in 2005 alone, the big three banks raised around EUR 14 million in foreign debt securities, a figure slightly larger than Iceland's total GDP. Iceland followed an inflation-targeting policy (Danielsson 2008) and the inflation rate during the 2000s led to higher interest rates compared to other countries, which increased the carry trade (Sigurgeirsdóttir and Wade 2015). The belief that these loans were covered by government guarantees and the fact that Iceland

was subject to European banking regulation and oversight made Iceland attractive to overseas lenders of foreign currency.

The strategy of the banks was to borrow heavily in the international short-term capital markets in order to take advantage of the interest rates there, which were relatively low when compared with the Icelandic domestic rate. However, these borrowings went on to finance loans made largely to a few Icelandic highly leveraged investment companies, such as Baugur and Samson. As we have noted, these companies were controlled by the main shareholders of the banks. The investment companies, in turn, used these loans to buy substantial equity stakes in foreign firms and assets. By the end of 2007, the three largest banks relied on short-term financing for some three-quarters of their funds, nearly all obtained from abroad. 58 per cent of their overall income was derived from branches located abroad, which had been set up in Britain, the Netherlands, Germany, Scandinavia, and Luxembourg.

The net external debt increased to 142 percent of GDP over the next four years and most of this was due to the banks' overseas borrowings. The net equity assets as a percentage of GDP grew to 99 percent of GDP, an extraordinarily large figure by international standards. The OECD (2009), not a body prone to hyperbole, likened Iceland's international investment position to the "balance sheet of a hedge fund, with large debt–finance equity positions" and observed that the banks pursued a "highly risky core strategy" (p. 22).

There were two problems inherent with this strategy. First, a collapse in the price of both foreign and domestic equities would leave the banks open to a serious loss on their loans. This was because much of the lending was to the investment companies that had bought up foreign equity. The banks also purchased shares on behalf of clients, but with forward contracts to sell the securities back to the clients. This posed serious problems if the counterparty could not buy the shares back, and, to make matters worse, many of the shares were in the banks themselves.

Secondly, rather than basing their expansion on the growth of deposits, as we have noted, the banks initially relied heavily on the international short-term financial markets. The borrowings from the latter are generally more short term in nature, having to be rolled over at regular intervals. Deposits, short of a run on the bank, are generally much more

stable, but take longer to mobilize. Hence, in the dash for growth, the Icelandic banks initially concentrated on the former. The banking system would be in trouble if, for any reason, it did not have easy access to these international financial markets which, of course, happened as a result of the subprime crisis and the Global Financial Crisis of 2007/2008.

As we have noted, there was a widespread conflict of interest in the newly privatized banking system right from the start. The owners of all the big three banks also became the major borrowers from the banks, at low rates of interest. They also received preferential treatment from the banks' subsidiaries (see Johnsen 2014, Chaps. 10 and 11 for a detailed discussion). As the SIC (2010) noted, "the largest owners of all the big banks had abnormally easy access at the banks they owned, apparently in their capacity as owners" (Chap. 2, p. 2). Thus, the owners were the principal borrowers and their debts in many cases exceeded the total equity of the banks. The investment banks also gave loans to the owners on preferential and favourable conditions, acting in their interests, rather than that of the ordinary small shareholders. "It is difficult to see how chance alone could have been the reasons behind the investment decisions" (SIC 2010, Chap. 2, p. 3). The SIC (op. cit.) also noted with characteristic understatement: "Generally speaking bank employees are not in a good position to assess objectively whether the bank's owner is a good borrower or not" (SIC, op. cit., Chap. 2, p. 3).

The activities of the bank owners may be likened to a case of Ponzi finance. The owners bought shares in each other's banks, which is known as 'cross-financing'. They also borrowed to purchase shares in their own banks. Both these activities increased the value of the banks' shares, but not their ability to withstand financial shocks (SIC 2010, Chap. 2, p. 8). As the crisis unfurled, so the owners resorted to even larger purchases of their banks' shares in order to try to stem their collapse in value.

The SIC (2010) came to the conclusion that this and the excessive leverage threatened the stability of the banking system long before the collapse. But there was also a related effect. The apparently larger equity base provided the foundations for rapid growth, but one that led to an increase in operational risk. The fall in the banks' share price was not the fundamental cause of the crisis; it was a consequence of the risks already inherent in the Icelandic banking system.

This was also aided and abetted by expansionary policies of the government, which cut both direct and indirect taxes and its relaxation of the guidelines for housing loans in 2004 was one of the biggest mistakes in macroeconomic policy. These led to major macroeconomic imbalances in the economy, which, by itself, would have led to a hard landing. The rapid inflow of capital led to both a stock market and a housing bubble. The collapse of property and construction bubble was a major factor in the subsequent collapse of the banks. The Board of Governors of the CBI followed a reckless expansionary monetary policy, even taking decisions against the advice of the Bank's chief economist. The SIC (2010) comes to the damning conclusion that the CBI knew of the weaknesses of the banks, yet did nothing to prevent them and continued to make huge loans to the banks against the weak equity that was barely compatible with the legal provision of valid collateral. The SIC (op. cit.) report considers that 2006 was probably the last chance the government had to take decisive action to prevent the crash, principally by curtailing the size of the banking system.

It was then that there was an economic mini-crisis in Iceland, the so-called 'Geyser crisis'. In spite of its explosive growth, the size of the financial system was still relatively small in absolute terms. Thus, it fell under the radar of the international financial media and international markets until about 2006. It was then that concerns of the rating agencies, based on macroeconomic indicators that suggested severe imbalances, triggered the mini-crisis. As the SIC (2010) noted, this was successfully weathered for a short time, not because of the introduction of corrective policies (in spite of concerns from the CBI, which were not communicated to the government), but because the international *perception* of a weakness in the Icelandic banks passed, at least momentarily. However, "it appears that the banks did not adequately address the questions outside analysts had raised in early 2006 about the quality of their loans" (Flannery 2009, p. 103). The Icelandic response was mainly window dressing; it was an attempt to convince the international financial markets that the fundamentals were sound. This was aided by the exceptionally favourable reports by Mishkin and Herbertsson (2006) and Portes et al. (2007) on the state of the Icelandic banking system, paid for by the Icelandic Chamber of Commerce. These, and especially the former, had a notable effect of bolstering confidence in the banks, given the publicity surround-

ing them. Nevertheless, it is difficult to justify the complacent conclusions of both of these reports, even on the basis of what was known at the time and without the benefit of hindsight (McCombie and Spreafico 2014).

Of course, even if the underlying structure of the banking system had been prudently developed and solvent, critical and speculative comments could have still caused a damaging financial run. This could have serious economic consequences, especially given that the size of the banking system meant that the CBI did not have the financial resources to act as an effective lender of last resort in terms of foreign currency reserves. Buiter and Sibert (2008) highlighted this problem and suggested that the only long-term solution was for Iceland to become a member of the Eurozone.[2] The problem of the lack of a lender of last resort itself should have been a substantial cause for concern for the government, as was increasingly the case with regard to the international financial markets.

Consequently, by 2006, it should have been clear, *pace* Mishkin and Herbertsson (2006) and Portes et al. (2007), that Iceland was in financial difficulties, even if it was not apparent that there would be a complete banking collapse (McCombie and Spreafico 2016). The government set up an ad hoc coordination committee, although this proved largely ineffective. A possible solution was for the banks to switch away from borrowing on the wholesale money market and to increase retail deposits. In this regard, in October 2006 the Landsbanki set up the internet bank Icesave in the UK. This paid the best market interest rates available to UK savers and the deposits flooded in. The strategy was a remarkable success and represented a fundamental difference in the way the bank was financing itself. However, it brought attendant, but different, risks to the whole of the Iceland banking system. Icesave was a branch of the Landsbanki, which meant not only was it regulated by the Iceland authorities (the FME), but that its deposits were also guaranteed by the Iceland government, through the Depositors' and Investors' Guarantee Fund (DIGF). If its legal entity had been a UK subsidiary, then it would have been regulated by the UK and, more importantly, would have been

[2] This has proved to be a politically contentious issue in Iceland. In 2009, Iceland made an application to join the European Union, but at the time of writing (April 2016) had already withdrawn it.

covered by the UK deposit insurance scheme. The reason this was set up as a subsidiary was that under the UK regulatory authority, it would have been far more difficult to transfer the funds to other parts of the Icelandic banking group. The fact that they were branches led to a long and acrimonious legal dispute with the UK and the Netherlands, as the Icelandic government initially did not feel obliged to honour the guaranteed to non-residents. However, eventually all the deposits were repaid. The problem with Icesave and related accounts was that if there was a run on the deposits, these would have to be paid for in pounds sterling whereas the DIGB could only pay in króna, with severe implications for the exchange rate and the CBI's foreign exchange reserves.

The Kaupthing bank followed with a similar scheme not only in the UK, but also in a large number of European countries where it made use of subsidiaries. In spite of the success of these internet accounts, however, the inflow of funds from the retail depositors could not offset the outflow from the wholesale deposits.

Nevertheless, the Icelandic banks continued their rapid growth in providing loans, increasingly to those institutions that could no longer obtain them from their normal sources because of the impact of the subprime crisis. With the collapse of Northern Rock in February 2008, the British media turned its attention to other possible banking risks and Iceland, with its rising CDS spreads on the banks, came under increasingly intense scrutiny. By March 2008, the CEO of Landsbanki was quoted in the CBI draft minutes as saying "the likelihood of the Icelandic banks getting through this is very, very little" (SIC 2010, Chap. 18, p. 42). But there were no contingency plans put into place by the Icelandic government, even though it had been told that the CBI could only withstand a run for six days. The various Iceland regulatory authorities had very little understanding of the seriousness of what was transpiring.

6.3 The Banking Collapse and Its Aftermath

By 2007, the króna, always volatile, was considerably overvalued (Tchaidze 2007), and this was due to the carry trade. Speculators, such as foreign hedge funds, were borrowing in offshore currencies, such as

the yen, where interest rates were low and they were using this to purchase financial assets in króna in Iceland, where the interest rate (and returns) were much higher. During the two years before the crisis, the difference in interest rates between the króna and currencies such as the Swiss franc and Japanese yen was over 10 percent, reaching 15 percent just before the crash. An assumption of this is the exchange rate will not subsequently depreciate to the extent that it more than wipes out the difference in the interest rates. As Williamson (1983), however, points out "A ten percent devaluation one week hence would require an interest rate at an annual rate of about 14,000 percent to compensate a holder for not selling!" (p. 181, omitting a footnote). This shows just how volatile these short-term capital inflows are, a fact that was neglected by both the FME and the CBI in the run-up to the collapse. By 2007, this was a highly risky investment strategy as the króna was, according to some estimates, overvalued by as much as 15–25 percent. Hence, the carry traders were taking a huge speculative gamble. As we have seen, many foreign depositors also put their savings in the high interest Icelandic online accounts and many Icelanders took out low interest rate loans denominated in a foreign currency.

The proximate cause of the crisis occurred when the Icelandic banks could not refinance their debts using foreign currency, with the freezing of the international money markets in 2008. The banks held foreign debt to the tune of EUR 50 billion compared with a GDP of EUR 8.5 billion. By 2008, annual inflation was 14 percent compared with the target of the CBI of 2.5 percent and the interest rate was 15.5 percent. The carry trade went into reverse in 2008 and the króna depreciated by over 35 percent during the first nine months of that year. The Icelandic banks found it impossible to roll over their loans on the international financial markets or to find other sources of foreign exchange. Because of the mismatch in the length of the loans, the banks could not simply call in the loans that they had made in foreign currency. As Buiter and Sibert (2008) noted: "With most of the banking system's assets and liabilities denominated in foreign currency, and with a large amount of short-maturity foreign-currency liabilities, Iceland needs a foreign currency lender of last resort and market maker of last resort to prevent funding illiquidity or market illiquidity from bringing down the banking system" (p. 1). As they predicted and

noted above, the CBI was unable to act as the lender of last resort in foreign currency (as it just did not have nearly enough foreign currency reserves) and so the collapse of the banking system was inevitable.

The immediate consequence was that Iceland went into a severe recession, the worst of any of the other OECD countries. Between 2007 and 2010, the fall in income was 12 percent compared with the next worst experiences of New Zealand and Greece, where income fell by about 8 percent. Falls of one percent, or less, were experienced by the other Nordic countries.

The immediate response by the CBI was both to raise interest rates, in the hope that this would stem the outflow of foreign currencies, and to introduce capital controls.[3] The Icelandic government was initially reluctant to call in the IMF, presumably because of the possibility of unpalatable conditions that would be associated with any loan agreement. The króna began its collapse with disastrous effects for households and firms that had debt denominated in foreign currencies. As we have seen, there was a further problem that much of Icelandic mortgages were index-linked and a rapid depreciation of the króna was driving up the inflation rate (it reached 20 percent in early 2009).

Russia temporarily flirted with providing support for Iceland, but lost interest when the IMF was called in. This was the first time the IMF had been called in to rescue an advanced country since the UK sterling crisis of 1976. Thomsen (2011) who led the IMF rescue mission commented that in 2009 "the sense of fear and shock were palpable—few, if any, countries, had ever experienced such a catastrophic economic crash". He termed it a "near-death experience" in his 2011 IMF blog. The IMF considered that there was no option but to support the use of capital controls introduced by the CBI to prevent a complete collapse of the króna, and to ensure an orderly depreciation.[4] Before the controls were imposed on the capital account, there was the danger that there would be no foreign currency to purchase necessary imports on the current account, especially as the overseas importers were beginning to refuse trade credit. Current

[3] Carmona (2014) and Sigurgeirsdóttir et al. (2015) also discuss the impact of Icelandic capital controls.

[4] Because the capital controls were introduced as a result of a severe balance-of-payments crisis, they were not in breach of either EEA or IMF regulations.

account transactions were not subject to controls with the exception that domestic residents were required to deposit with the banks any foreign exchange earnings (Sigurgeirsdóttir and Wade 2015).

While the use of capital controls was unequivocally supported by the IMF team in Iceland, there was less enthusiasm by some of the IMF Executive Directors; nevertheless, however, the controls were persevered with. Over time, there were subsequent changes in, and tightening of, the regulations relating to capital controls in order to prevent the inevitable attempts to circumvent them. In this respect, the legislation was remarkably successful. However, the expectation that the capital controls would be of a temporary nature was overoptimistic, as it was only in 2016 that measures were initiated to dismantle them.

Consequently, the IMF recommended a dual policy to defend the exchange rate by raising interest rates (to 18 percent), while keeping capital controls in place, but not on the current account. Current account convertibility meant that interest payments in króna could be converted into foreign currency. The policy of raising interest rates in an attempt to defend the exchange rate, under these circumstances, is seen by Gudmundsson and Zoega (2016) as a 'double-edged sword', as reflected in the title of their article. The reason for the use of high interest rates to keep the exchange rate up, given the presence of capital controls, is that it reduces the incentives of foreign holders of domestic assets from attempting to bypass the capital controls and sell the króna in the offshore markets. At the same time, however, high interest rates could have the opposite effect. If these interest payments are converted into foreign currency via the current account, they could drive down the exchange rate. Gudmundsson and Zoega (2016) review the empirical evidence covering a large number of countries and find "that the effect of high interest rates on exchange rates does not lend strong support to the argument that high interest rates defend the value of the currency" (p. 2). They use a Vector Error Correction Model (VECM) between interest rates and the exchange rate to test the effect of the higher interest rates. Their findings show, perhaps unsurprisingly, that prior to the crisis, when there was full capital mobility, the high interest rates had a significant impact in maintaining a high exchange rate. But the effect is barely statistically significant in the crisis years. They conclude that "cutting interest rates from a very high

level is not likely to make a currency depreciate in an effective capital control regime, highlighting the importance of the effective enforcement of controls" (Gudmundsson and Zoega 2016, p. 20). The corollary is that rising interest rates on their own are unlikely to stabilize the currency.

An 'event study' by Arnórsson and Zoega (2015) comes to a slightly different conclusion. They find over the period 2009 to 2015 for Iceland that interest rates may have had a role in maintaining the exchange rate when capital controls were not effective, but played a much more limited role when they were effective. Thus, cutting the interest rate from about 18 percent in 2009 to 4 percent in 2011 was unlikely to depreciate the króna, given the presence of the capital controls. These findings are reinforced by Sigurgeirsdóttir and Wade's (2015, p. 114) similar observation that the interest rate fell once the capital controls were tightened and they began to bite and increased export revenues bolstered the CBI's foreign exchange reserves.

The major policy weapon, if only *faute de mieux,* was the introduction of capital controls. The intention was that the capital controls would be a short-term measure, expiring after about, say, six months. This was because of the perceived adverse effects that capital controls can have in the long term. These include deterring foreign investment in the country and preventing domestic investors, especially the Icelandic pension funds, from diversifying their portfolios internationally. However, it took seven years before a capital liberalization strategy, drafted with the help of the IMF, was presented by the CBI in 2015. This compares, for example, with the mere two years during which Cyprus imposed capital controls. By the beginning of 2011, the position of those who thought that controls should be kept for longer won the argument (Sigurgeirsdóttir and Wade 2015). The reason was straightforward. There was great uncertainty how the financial system would cope with the outflow of capital once the controls had been lifted. "It has been estimated that Iceland's 'balance-of-payments overhang'—that is, the net outflow of króna that would eventually be needed to bring domestic and foreign asset holdings to the desired levels—amounted to 70 % of GDP in late 2014" (OECD 2015, p. 51).

One of the problems with the imposition of capital controls in Iceland's case is that by themselves they cannot solve the financial crisis. They merely prevented a complete financial meltdown and provided a breath-

ing space for other measures to be implemented. This is in contrast with the use of capital controls on inflows for which the justification has been made that they may prevent a crisis from occurring in the first place. The difficulty of relaxing the controls is to ensure that they have not merely postponed the damage to the financial system. The problem is that it is extremely difficult to predict the outcome of the liberalization of capital controls. This is highlighted by the attempt of the IMF (2015) to determine the likely effects. They used the CBI's Quarterly Macroeconomic Model (QMM) but, like many central banks' models immediately prior to the crisis, it has severe shortcomings. It does not model household and firm behaviour; neither does it have a financial sector nor does it model the capital account. The only way the effect of relaxing the capital controls in the forecasting model can be simulated is to simply assume that they lead to an exchange rate depreciation and to trace the effects of that. It is difficult to agree with the IMF (2015, p.10 emphasis in the original) that the QMM is an "ideal model to run an *illustrative* rapid capital account liberalization scenario" rather than to precisely quantify the effects. The IMF models the effect of the liberalization by assuming that there is a 25 percent real depreciation of the króna relative to the euro in 2015. The resulting impacts are not surprising. Household balance sheets are adversely affected and consumption falls by 6 percentage points, but the effect is not so great as in 2008 as foreign-denominated debt has been reduced. Inflation increases. The fall in demand reduces investment and corporate profits, but the removal of the capital controls could eventually induce new investment. Again, as in 2008, the depreciation and the fall in demand improve the trade balance, but the extra growth in exports is not enough to offset the fall in demand. The great problem with this exercise is that the crucial possible impact on the banks' balance sheets and depositor behaviour are excluded, as are most of the financial ramifications. As the IMF admits, a more comprehensive model would allow for, e.g. a tax on outward capital flows, or a substantial haircut on offshore residents' holdings of Icelandic financial assets and changes in the risk premium.

In June 2015, the Icelandic parliament voted to end capital controls, although with some immediate tightening of restrictions immediately prior to this liberalization. Given the problems of securing an orderly transition, there are, at the time of writing, negotiations with the boards

overseeing the estates of the failed banks with the intention that a large group of creditors (largely hedge funds who have bought up the distressed debt) will have to take a haircut, which looks like the likely outcome. This will allow the creditors to take approximately the equivalent of 20 percent of Iceland's GDP out of the country in foreign currency. Alternatively, if negotiations fail the creditors will face an exit tax of 39 percent.

The IMF also considered the heterodox nature of the policy measures that were used in a positive light. The Icelandic government let the banks fail rather than having the public sector absorb their losses and fiscal austerity was not imposed. The banks were divided into 'new' banks that handled domestic loans and deposits and 'old' banks that were eventually to be liquidated. The 'new' banks were to enable the domestic banking system to continue to function, which it did. The 'old' banks were to reimburse the creditors of the former banks for any net assets that were transferred. A budget deficit was run initially to help offset the fall in per capita incomes, but following the recovery this turned into a small surplus. Iceland recovered more quickly than other small economies that had been hit by the subprime crisis, such as Ireland, which did not use capital controls. Krugman (2015) attributes much of this to the depreciation of the exchange rate.

6.4 The Crisis in Retrospect

Wade et al. (2012) have argued convincingly that one cannot understand the lead up to and the reasons for the collapse of the Icelandic banking system without taking what may be best termed a political economy approach. The rapid growth of the banking system, the inadequate regulation, and the reckless loans to the owners of the banks were all the result of a flawed privatization process that was designed to benefit the extremely small elite who had links with the political parties. See Johnsen (2014, Chap. 5) for a discussion of just how flawed the privatization process was.

However, Gissurarson (2013), who, it should be noted, had served on the supervisory board of the CBI from 2001–2009, attempts to place the blame for the collapse of the Icelandic banking system on the general

collapse of the international banking system in the wake of the subprime crisis. This overlooks the evidence that the Icelandic banks would probably have collapsed, irrespective of the unfolding of the crisis. While it is not possible to be definitive, Flannery (2009) concludes that "one is left with the strong suspicion that some or all of the banks were insolvent [by October 2008]—and hence the market's unwillingness to lend was rational" (p. 106). The Icelandic mini-crisis of 2006, for example, occurred even before the subprime crisis. While Gissurarson (2013) points out that a large banking system is not unsustainable in a small country, for example, Ireland, Luxembourg and Switzerland, he overlooks the fact that the lost two countries have a long experience of international banking. Moreover, the situation of Iceland differs in one significant respect from the other three countries. In Luxembourg, the banks' assets largely belong to the branches of foreign banks and, as such, the banks' deposits are guaranteed by their respective foreign countries. In Ireland, for example, this applies to about 40 percent of the banks' assets. The Swiss banking system is much larger, but it is so interconnected with the international financial system that there would almost certainly be a worldwide response if any of its banks were in any danger of failing (the reason why this did not happen to the Icelandic banks is discussed below). These banking systems did not have an explosive growth over three or four years for which the regulatory institutions were unprepared and which they did nothing to address. The Iceland financial system was indeed "overbanked and undersized" in the words of Sibert (2011), an assertion which Gissurarson disputes.

It is also unconvincing to lay the blame for the crisis on "the systematic error in the legal and regulatory framework for the European financial common market" (Gissurarson 2013, p. 7). The problem here lay with the failure of the Icelandic institutions such as the FME, the CBI and the government effectively to implement these regulations. It is also disingenuous to blame the customers. "If the Icelandic banks were reckless, were their foreign customers not reckless as well?", Gissurarson (2013, p. 7) rhetorically asks. However, the whole point of the banking regulatary framework is to overcome the problem of asymmetric information. The banks are able to apply due diligence to the issue of loans and the credit worthiness of borrowers (whether or not they actually do so is another matter). Individual investors do not have the resources or information to undertake a detailed assessment

of a financial institution's financial stability. That is the whole reason for the regulatory framework. This is, namely, to ensure that banks act prudentially on behalf of the investors and the government, who ultimately provides the depositors' guarantees. It was here that the FME and the CBI proved totally inadequate to the task, and the credit rating agencies for a short period got it (nearly) right. Moreover, Gissurarson (op. cit.) attributes much of the blame for the collapse to the fact that "the Icelandic banking sector was only unsustainable because in its hour of need nobody was willing to help" (p. 7), whereas other countries received help from the US Federal Reserve Bank, inter alia. It is sufficient to quote the SIC (2010) on this:

> After the G10 Summit of the central bank governors in Basel on 4 May 2008, it became clear that neither a currency swap with the agreement with the Bank of England nor the other central banks, with the exception of the Danish, Norwegian and Swedish ones was on offer to the CBI. In a letter to the Investigation Committee, Stefan Ingves, Governor of the Central Bank of Sweden, makes it clear that unclear ownership, along with the banks' rapid balance sheet growth had led to a dangerous situation and that the Icelandic government did neither seem fully to grasp nor understand how to deal with it. (p. 15)

The Bank of England was likewise so concerned with the fragility of the Icelandic banks that it also refrained from even discussing a swap, but merely gave advice that the size of the banking system should be reduced. So Gissurarson's (2013) argument that the whole crisis primarily was due to the lack of diligence of the largely foreign investors in the banks and the inexcusable failure of the other central banks to rescue the Icelandic banks is not a compelling one.

Nor can the banks' actions as the crisis unfurled be considered to be 'gambling for resurrection', as Baldursson and Portes (2013) assert. Gambling for resurrection is where a bank or financial institution gets into serious financial difficulties and makes risky loans which will, if successful, bring a high return and rescue the bank, but the probability of this occurring is extremely low. Black (2014a and b) argues that the banks engaged in reckless behaviour from the time of their privatization, acting solely in the interests of the few large shareholders, as evidenced

by the SIC (2010). The banks' behaviour was not 'gambling for resurrection', but rather 'looting' in Akerlof and Romer's (1993) sense of the term or engaging in 'accounting control fraud' (Black 2014a).

6.5 How Effective Were Capital Controls in Iceland?

It is difficult to establish with any certainty the impact of the capital controls on Iceland's recovery, given the difficulty of determining the counterfactual—what would have happened without the controls? Krugman (2015), for example, attributes the rapid recovery in employment in Iceland, compared with, for example, Ireland, to the fact that the króna did depreciate, whereas Ireland is a member of the Eurozone and could not, therefore, benefit from a depreciation of its currency. However, if we were to consider time-series data for Iceland, we would find that the imposition of capital controls was associated with a depreciation, rather than an appreciation, of the króna, as might have been expected. The problem is the counterfactual that without capital controls, the rate of depreciation would have been catastrophic and the controls prevented this.

Nevertheless, Iceland made a remarkable recovery from its 'near-death experience'. By 2015, inflation had been tamed, full employment had been restored and public debt had been greatly reduced, with the budget deficit eliminated. The only cloud on the horizon was the large nominal wage increases that were in the pipeline, due to Iceland's largely collective bargaining system. The current account had moved back into surplus, initially as the result of the collapse of demand, but, consequently, tourism emerged as a significant foreign exchange earner with the depreciation of the króna. Nevertheless, in spite of this rapid recovery, the level of per capita income was below that of the other Nordic countries (Yglesias 2015).

It is interesting to note that the OECD (2015), like the IMF, now also advocates the selective use of capital controls "to address large swings in capital flows unrelated to fundamentals, while respecting international commitments" (p. 11).

We may distinguish two ways of viewing the use of capital controls. The CBI and IMF view is that the controls should be relaxed gradually, after preventing a total collapse of the currency: They would provide a cheap way of financing the budget and the cost would be shared between residents and non-residents, with the larger burden falling on the latter. The financial repression effect of capital controls enabled Iceland to experience a sharp fall in public debt yields from 2008 onwards (Carmona 2014, p. 490). This is similar to the 'policy space' argument of Grabel (2013, 2015). Capital controls enabled some macroeconomic policies to be carried out that might not otherwise have been possible, with the need for, say, very high interest rates, to try to prevent the uncontrollable depreciation of the currency. It is also similar to the 'buying time' approach identified by Carmona (2014, p. 496), with the exception that in this case capital controls lasted longer, to a certain extent ossifying ineffective policies that they were meant to be replaced.

The second view was that the controls should have been lifted as soon as possible even at the risk of some dislocation in the financial market. This is because Icelandic companies need access to foreign markets and its influential fishing industry wished no imposition of controls on where it could spend its foreign exchange earnings. Investment may be reduced, not least by the possibility that capital controls may be introduced in the future, thereby generating uncertainty. This view sees Iceland's future as lying in the European Union and the euro area and its proponents were dismayed when the government abandoned its application for membership. It is shared by most neoclassical economists because of the supposed serious price distortions and the misallocation of resources that exchange controls bring with them. There is also concern that the failure to lift capital controls will increase the disparities in wealth. The CBI holds auctions where owners of foreign currency can buy króna at a good discount, compared with the separate auctions for domestic residents, and then the foreigners can use the króna to buy up Icelandic real estate and other assets.

Much discussion of capital controls focuses on curtailing destabilizing capital inflows, especially if there is speculative or herd behaviour (Ostry et al. 2010). Clearly, with the benefit of hindsight, there should have been some restriction on these flows into Iceland prior to the crisis. However,

as they were part of, and indeed the cause of, the rapid growth of the banking sector, no concern was expressed, not least by the understaffed and ill-equipped FME or the CBI.[5] When the crash came, the IMF saw no alternative to capital controls, particularly with regard to outflows. Sigurgeirsdóttir and Wade (2015) express concern that the government did not use the breathing space given by capital controls to "strengthen the financial system's prudential controls and carry through other institutional reforms" (p. 126) with a view to entering the EU. However, the OECD (2015) is more optimistic considering that "the Icelandic authorities are already at—or close to—the international frontier in prudential regulation" (p. 25). Worryingly, Sigurgeirsdóttir and Wade (2015) note that there may be a tendency to backsliding with recent greater political interference in the governance of the banking system and a return to rent seeking. Prior to 2009, monetary policy was set by three politically appointed governors who were then replaced by a board of experts. The OECD (2015) bluntly states that "To protect macroeconomic stability the central bank should remain independent from political interference. The monetary policy committee introduced in 2009 should be retained" (p. 23).

But we agree with Sigurgeirsdóttir and Wade (2015) when they argue that the Icelandic case has undermined the view that a rapid growth of capital inflows is a sign of a strong economy (typified by the question, why else would investors move their money there?) and any restriction is likely to only produce both microeconomic and macroeconomic distortions. Indeed, now the opposite is the case. Large inflows of short-term foreign capital (as opposed to FDI) can well be the harbinger of a damaging currency crisis.

Nevertheless, there was not unanimity about the appropriateness of introducing capital controls in Iceland. An alternative view is presented by Danielsson and Kristjánsdóttir (2015) who subscribe to the orthodox objections to capital controls. Capital controls should not have been used. They assert that it leads to a deadweight loss of one percent of GDP per year in Iceland. The imposition of capital controls destroys

[5] At the time of writing, April 2016, there is concern about the sudden increase in capital inflows and discussions about whether or not to limit these.

trust in the Icelandic financial system (although one may legitimately ask whether there was any trust left in 2008) and may lead to a significant risk premium in future years. "Thus capital controls do not only undermine the long-term health of the Icelandic economy, in the long run they also undermine their own objective of maintaining the exchange rate." They further express the opinion that capital controls give more powers to the government, through exemptions, and so on, that allow rent seeking, a not unreasonable concern given Iceland's post-war history when there was a great deal of rent seeking prior to the crisis.

Let us consider the static misallocation of resources argument. The one percent of GDP, even if it is correct and it is not clear how they arrive at this figure, has to be set against the possible disastrous consequences of a free-falling currency, as occurred to the Indonesian economy as a result of the collapse of the rupiah in the 1997 Asian crisis. But is there any evidence that capital controls in a world of path dependency, financial crisis and increasing returns to scale actually led to a major misallocation of resources in Iceland? Certainly, there is little evidence that financial liberalization leads to a significant increase in growth.

A number of studies of the effect of financial deregulation and capital liberalization show that generally this improves stock market efficiency in the allocation of capital resources to the most productive sectors of the economy (see the references in Graham et al. 2015). However, it does not necessarily follow that in periods of economic crisis, such as Iceland went through, the imposition of capital controls necessarily *reduces* stock market efficiency. The counterfactual is that the failure to impose capital controls with the likelihood of economic meltdown may actually considerably worsen the efficiency of the stock market.

Graham et al. (2015) test the weak form of the efficient market hypothesis for the Icelandic stock market over this period. The weak form is that over time the returns to shares will follow a random walk. The conventional wisdom is that, given the usual assumptions, the imposition of cross-border capital controls would make the Icelandic stock exchange less efficient. Hence, the paper looks at the effect of this policy on the efficiency of the Icelandic stock market. As an attempt to test for the counterfactual, they also test the weak-form stock market efficiency hypothesis for Denmark, Finland, Norway and Sweden, using data for

the period 1993–2013. They concentrate on the periods January 1993 to December 1994 and October 2008 to December 2013 for Iceland, when there were capital controls in Iceland, and from January 1995 to October 2008, when there was not. Interestingly, the authors find no evidence in Iceland of weak-form efficiency in the period of deregulation, but that, perhaps paradoxically, the period of capital controls actually improved the efficiency of the stock market (the other four Nordic countries showed greater weak-form efficiency over this period).

What are the implications to be drawn? One possibility is the widespread manipulation of the stock prices in the period of deregulation did *not* improve the efficiency of the stock market, but worsened it. The crash brought an end to the stock market manipulation, especially in the shares of the banks, and consequently, under capital controls, the efficiency of the stock market increased. It may not necessarily be the case that the imposition of capital controls improved stock market efficiency, per se, but their effects were not adverse enough to worsen the situation.

As for the investment–savings nexus, a work by Raza et al. (2015) studies the Feldstein and Horioka (1980) hypothesis for Iceland. This is that with restricted capital mobility, there should be a close correlation between savings and gross domestic investment. The converse is that with free capital mobility and investors seeking to invest in those countries, which have the highest returns, the correlations should be nonexistent, or at least very weak. They found that the correlation between saving and investment is higher during the first period of capital restrictions (1960–1994) and becomes lower when the free capital mobility regime is included in the sample, as is to be expected.[6] However, the introduction of controls in response to the global financial crisis did not increase the correlation between savings and investment. The cause is that the deep recession curtailed both the rate of investment and the savings ratio, but the latter recovered much more quickly. Raza et al. (2015) conclude: "The implications of the results we obtain for policy makers are clear: real interest rates matter for small open economies, and closely monitoring the rate of growth of both saving and investment is vital. Institutional and structural changes can have far-reach effects on the development of

[6] Iceland entered the European Single Market in 1994.

all economies, but for small open economies, capital controls in particular can alter their potential growth rates, both positively and negatively, in both the medium and long run" (p. 14).

To summarize: Iceland constitutes a case of unorthodox policies, the most interesting of which has been the imposition of capital controls that not only was greeted with approval by such economists as Krugman and Stiglitz, but also defined "a dramatic precedent" (Grabel 2013, p. 19). It is seen as a remarkable change of view from IMF's orthodox long-standing defense of unfettered international financial markets. Iceland is the first developed country where the IMF recommended the introduction of capital controls. What happened in Iceland matters as it induced a rethink of the economic orthodoxy that disapproves the limits on cross-border capital flows (Sigurgeirsdóttir and Wade 2015). Krugman (2011) expressed the view at a conference that "Iceland's heterodoxy gives us a test of economic doctrine". In fact, the conventional wisdom before the global financial crisis was that free movement of capital allows financial markets to allocate the resources efficiently and they are capable of correctly valuing financial risks. Huge increases in capital inflows are also seen as evidence of strong fundamentals and that the less state intervention, the better. The case of Iceland shows that all these are not necessarily true. It constitutes a good example of how financial markets cannot always accurately assess the risks and how huge speculative capital inflows may well ruin an entire economic system (Sigurgeirsdóttir and Wade 2015; Carmona 2014).

The Icelandic case is the culmination of a move to the acceptance of capital controls, at least in the short term, in response to a severe financial crisis and as part of a package of other policy measures. This compares with the earlier neoliberal period when capital controls had no role to play. As we have seen, the recovery in Iceland in terms of employment and the reduction of unemployment has been faster than in, for example, Ireland that went down the more traditional austerity route.

However, the imposition of capital controls in Iceland should not be seen as a panacea. Given the length of time that they have been in place, the OECD (2015, p. 53) sees evidence that they are now leading to distortions. The króna has been trading at a discount in the offshore markets compared with the CBI official domestic rate. Capital controls

exempt new foreign investment, but FDI is modest compared with the pre-2008 period. This is partly due, according to the OECD (op. cit.), to uncertainties and the possible costs of gaining permission for the investment. Icelandic businesses see the controls as the single most important factor impeding their economic performance, particularly with respect to start-up firms that had previously benefitted from foreign capital and expertise. The OECD (op. cit.) also points to the fact that Icelandic pension funds are unable to diversify their portfolios (and risk) using foreign assets to a prudent extent. At the moment foreign assets holdings comprise 22 per cent of the portfolio, compared with a target of between 40 and 50 percent set by the domestic pension funds (the maximum share in 2006 was about 30 percent).

Nevertheless, there is no denying that there has not been a change in the IMF's 'institutional view' about the efficacy of capital controls. However, this does not mean that there has been a return to the Keynes–Dexter position on capital controls.

6.6 A Comparison of the Thai (1997) and Icelandic (2008) Financial Crisis

As we have noted, one of the turning points in the perception of the fragility of Icelandic banking crisis was a short report by the research department of the Danske bank in 2006, which coined the term 'Geyser Crisis' for Iceland. The report looked at the financial indicators in Iceland and came to the alarming conclusion that the imbalances were even larger than those of Thailand in 1997 (and Turkey in 2001). The only indicator that was not worse in Iceland was public finances. Of course, there are significant differences between the structure of the two economies and the króna was freely floating, whereas the Thai baht was a pegged currency that closely followed the US dollar. Nevertheless, allowing for all the differences, the report comes to the conclusion that "a possible Icelandic crisis could follow much the same lines as in Thailand" (p. 7). In this section, we pursue this comparison further and look at the implications for the use of capital controls.

On the eve of the Asian Financial Crisis, Thailand was seen as one of the region's great success stories. Growth was rapid and the country was running a budget surplus, although there was a substantial current account deficit. However, many institutional failings were hidden by this fast growth. The fundamental cause of the crisis stemmed from the substantial amount of foreign capital that poured into Thailand, partly from the carry trade and partly because Thailand was seen as an exceptional investment opportunity. A major factor was the financial liberalization that began in the 1990s. This was part of an attempt to turn Bangkok into a regional financial hub with the opening up of the capital account in 1993 and the creation of the Bangkok International Banking Facility (BIBF). Like Iceland, Thailand's financial system was dominated by the banks.

The Asian Financial Crisis commenced with the collapse of the previously pegged Thai baht in July 1997. In the previous months, there was growing concern about the financial viability of some of Thailand's property companies and the crisis was precipitated by the collapse of Finance One, Thailand's largest financial institution. The financial strategy of Finance One, which was followed by many other financial institutions, was to borrow short-term US dollars by issuing Eurobonds and using the funds to lend long-term notably to Thailand's property developers, leading to a boom in real estate finance. "Thus, greed fed speculation and then into Ponzi-type financing. Projects were launched in the expectation that they could be listed in the stock market so that the promoters could take an instant profit in the bull market. In a rising market, financial institutions agreed to provide short-term bridge loans repayable on successful listing. When the bull stopped, the projects stopped, and the banks were left with bad loans on their books" (Sheng 2009, p. 140). Moreover, as in Iceland, banks such as the Bangkok Bank of Commerce (BBC) gave huge loans, without undertaking due diligence, or insisting on collateral, to senior BBC executives and other individuals. It became clear that the Thai banking system did not have the experience to deal with this rapid explosion in financial intermediation and also did not have the capacity to effectively regulate the rapidly growing banking system.

As in Iceland, risk management in the Thai banks became weak and the financial institutions took advantage of the differential in interest rates; in this case between the USA and Thailand. However, in the case of

Thailand, the proximate cause of the crisis was the collapse of the property market and the fact that the property developers could not pay back the loans they had received from Finance One and other financial intermediaries. The causes of the Asian crisis did not fit into the traditional explanation of currency crisis. These include the attempt of governments to peg the exchange rate with only limited foreign exchange reserves. If the market believes such a defense of the exchange rate is futile then there could be a run on the currency, even leading to a self-fulfilling prophecy. But, as Krugman (1998) emphasized, this was not the case of the Asian crisis. He states that "The Asian victims did not have substantial unemployment when the crisis began. There did not, in other words, seem to be the incentive to abandon the fixed exchange rate to pursue a more expansionary monetary policy that is generally held to be the cause of the 1992 ERM crisis in Europe." The causes bear a marked similarity to those of Iceland in spite of the vast difference in the level of economic development and the fact that Iceland had not pegged its exchange rate. Thailand, the first of the Asian countries to collapse, had liberalized in the 1990s. Foreign exchange controls had been relaxed so that it was possible to borrow from foreign markets and these borrowings could be passed on to Thai customers. The cause of the Asian Financial Crisis was the search by speculative investors for high returns in these markets. Non-bank financial intermediaries borrowed short in foreign currency (largely dollars) and lent to the speculators who invested in assets (largely real estate), causing an asset bubble. The financial intermediaries were encouraged in this by the implicit guarantees from what were seen as the close political connections with the Thai institutions, who were supplied with these funds. Hence, it was a classic case of moral hazard as these led to excessively risky investments. The rapid rise in asset and real estate prices made the financial situation of the intermediaries seem more solid than they actually were. It does not take much to cause an asset bubble to collapse. The collapse of Finance One sent a strong signal to the financial markets that the Thai government could not always be relied on to bail out failing banks. Once this became clear, and with a continuation of the fall in asset prices, there was a run on the baht by the currency traders who came to the conclusion that the rate at which the baht was pegged was unsustainable and who therefore sold the currency short. The exchange

rate became unsustainable in the face of this speculative attack, because most of the Thailand's foreign exchange reserves ($33 billion) had been tied up in forward contracts, with only $1.14 billion available. However, it is doubtful even if the remainder of the reserves had been readily available, the peg could have been saved.

The IMF was called in on 28 July 1997. Tight monetary and fiscal policies were imposed, resulting in a downturn in output of over 10 percent in 1998. In 2003, in its evaluation report, the IMF conceded that the first-phase policy recommendations had exacerbated the economic situation. Capital controls were not used.

As in the case of Iceland, it was clear that part of the problem of the Thai, and, more generally, the Asian financial crisis was that the financial intermediaries were not always able to use commercial criteria when deciding whether or not to issue a loan when dealing with politically powerful or well-connected potential borrowers. As Krugman (1998) puts it, the financial intermediaries were often owned by 'Minister's nephews'. A further similarity was that the rapid growth disguised the extent of the risky lending, but once doubts were raised these economies would become extremely vulnerable to a financial crisis.

What is clear in the case of both the Asian and the Icelandic financial crisis is that the primary cause was the excessive growth in foreign borrowings and lack of effective oversight by the regulatory authorities. In such circumstances, there is a case for capital controls on inflows. We have seen that the liberalization of the Thai capital account occurred too rapidly and there was not the mechanism to limit the excessive borrowing of foreign exchange by the financial intermediaries.

One of the causes of the IMF's change in view towards capital controls is the development of theoretical models within the prevailing neoclassical paradigm, which provide a theoretical rationale for them. This has led to the so-called 'new economics of capital controls', of which Korinek (2011) provides a useful overview. He starts with the observation that there is a close correlation between the degree of market liberalization and financial instability. One of the reasons is the widely accepted view that rapid inflows into the emerging economies are excessive and can lead to financial instability, as evidenced by the Asian financial crisis. The question is: how to prevent this?

The case for capital controls for prudential reasons is based on the typical sequence that there is a shock to a financial variable. This leads to a fall in aggregate demand and a depreciation in the exchange rate and a collapse in asset prices. This has adverse balance sheet effects due to the declining value of collateral and net worth with the increase in the value of the foreign debt in terms of the domestic currency. With imperfect capital markets, this leads to reduced access of agents to finance and/or greater credit spreads leading to a further cut back in spending. Hence, there is an amplification effect on the initial shock and a vicious circle develops. A key assumption is that agents, when taking a decision to borrow on the foreign exchange markets, take the exchange rate and asset price, or the level of financial fragility, as given. They ignore any effect that their decision may have on increasing the fragility. But their actions have a 'pecuniary externality' effect when there is a borrowing constraint.

This means that the agents take on too much risk when borrowing, which leads to an excessive degree of fragility. Consequently, in this model, Pigouvian taxes on the stock of financial liabilities to reduce the overall level of risk will make all agents better off. In particular, this would reduce the amount of short-term dollar-denominated debt. Korinek (2011) illustrates this argument with a two-period representative agent model. Clearly, this presents a theoretical argument for capital controls in the case of Thailand; but in the case of Iceland it is a second best argument. This is because effective prudential banking regulation and risk assessment of loans and stress testing by the CBI should have been in place to prevent the excessive growth in loans.

6.7 The Political Economy of Capital Controls

The hostility of the IMF, and indeed other international organizations such as the OECD, to the use of capital controls from about 1980 until the Global Financial Crisis of 2007/2008 has been well documented. Yet during the first three decades of the post-war period, capital controls had been seen as integral part of the financial system, a position based largely on the experience of the interwar period. When the IMF's Articles were

drawn up at Bretton Woods in July 1944, they emphasized the need for current account convertibility. But, at the same time, they recognized that countries may have to impose capital controls. Both Keynes and White drew a distinction between *speculative* and *productive* capital flows, and agreed that the speculative flows (or hot money) need to be carefully monitored and if necessary restricted (Abdelal 2007; Gallagher 2011).

A major problem was the so-called trilemma or 'impossible trinity', namely the impossibility of having an independent monetary policy, a fixed exchange rate and unfettered capital mobility. This was at a time when it was taken as axiomatic that, for example, the UK government may have, from time to time, to take policy measures to ensure full employment (e.g., the 1944 White Paper on Employment Policy).[7] In the words of Helleiner (1994), this was a time of 'embedded liberalism', where markets were seen to be important, but they needed to be embedded in proper institutions to be effective. Many economists at the time thought that an open trading system and an open financial system were fundamentally incompatible in a regime of fixed exchange rates (Eichengreen 2007).

Nevertheless, even at this time, the influence of the financial sector in the US, and its desire for minimal regulation, was to be seen. The use of capital controls turned out only to be temporary, rather than, in certain cases, permanent as Keynes and White had proposed. The UK maintained capital controls until 1979 and full capital account liberalization occurred in the other advanced countries at this time. A number of reasons have been put forward to explain this change in policy. Undoubtedly, the gradual breakdown of the Bretton Woods system over the period 1968 to 1971 and the move towards floating exchange rates played its part. Ghosh and Qureshi (2016) also point to the rise of the multinational corporations that made it difficult to impose capital controls because of, *inter alia*, transfer pricing. Moreover, the IMF considered that it was relatively easy to bypass the capital controls, which is why it considered that they would be effective for only, say, six months. In addition, the USA

[7] The US 1946 Full Employment Act was much weaker and did not commit the US government to such an extent as in the UK.

and the UK financial sectors saw that their dominance of world financial markets would be enhanced under capital liberalization. These became a powerful pressure group and Wade and Veneroso (1998) and Bhagwati (1998) coined the term 'Wall Street–Treasury complex' to describe the origins from which these pressures to pursue freedom of capital movements at all costs emanated, and from which the IMF was not immune. The rational for the liberalization of cross-border flows was undoubtedly enhanced by the demise of Keynesian economics and policies and the rise of neoclassical, and later New Classical, economics. The 'embedded liberalism' was replaced by 'neoliberalism', an ideology, or paradigm, which sees the unfettered working of the market (including the financial market) as generally leading to the optimal allocation of resources.

Thus, during the 1960s and 1970s there was a gradual movement to the liberalization of capital flows, although the converse was the case with developing countries, where there was greater use of capital controls. But why was there such hostility during the 1980s and 1990s to capital controls, per se? As Ghosh and Qureshi (2016) imply, capital controls are just like any other macroeconomic policies, the costs and benefits of which should be assessed depending upon the exact circumstances. One answer, they suggest, is that most capital controls are likely to be most useful in curtailing speculative capital *inflows*. However, in practice many developing countries used them to control capital *outflows*. Curtailing financial outflows was closely associated with autocratic governments (see Ghosh and Qureshi 2016, p. 33, for the evidence) and concomitant rent seeking. According to Ghosh et al. (op. cit.), the distinction between the effectiveness of controlling capital inflows and the ineffectiveness of controls on capital outflows became lost in policy discussions, and, as a consequence, the former suffered from 'guilt by association'.

The change in the IMF's attitude towards capital controls first occurred during the Asian Financial Crisis of 1997, as we have seen. The latter was largely caused by the excessive short-term capital inflows into the region and then their rapid reversal. The Asian Financial Crisis led to a reassessment of capital controls and the IMF changed its attitude towards them, but not to such a degree as might be imagined. As Ghosh and Qureshi (2016) note, after the Asian Financial Crisis, restrictions on, especially, capital inflows were seen as having a role to play. Rather incon-

sistently, however, capital controls were "not encouraged or viewed favorably" (p. 27), but merely tolerated. Nevertheless, this did not prevent several developing countries imposing them in the 2000s. In this they were opposed by the financial markets, which actually caused a change in policy as in the case of Thailand. But if the IMF could largely dismiss capital controls in the 1990s, the subprime crisis and the resulting Global Financial Crisis was another matter. The Global Financial Crisis led to a massive outflow of funds from the developing countries in 2008, followed by a sharp reversal by mid-2009 when, as a consequence, several developing countries introduced capital controls.

Grabel (2015) identifies five crucial reasons why capital controls are now seen in a more favourable light than they once were. The first concerns the increased autonomy of several developing countries, which now can rely on official reserves and sovereign wealth funds. The second stems from the ability of the policymakers of the developing countries to have dealt with, and responded better to (than several advanced countries), the challenges offered by the Global Financial Crisis. This has made them more confident and assertive when dealing with the IMF, etc., which is indicated by the counter-cyclical policies pursued, the expansion and the creation of financial institutions, and by the funds committed to the IMF. Countries such as China that are not hostile to capital controls also play a larger political role in the international organizations. The third concerns the restriction of the IMF's geographical influence and its financial dependence on its former clients. The fourth is that the need of capital controls for 'countries at the extremes' (that is, not only those that were facing an economic collapse, such as Iceland, but also those that were performing well under the crisis, such as Brazil) became stronger. Finally, there was a change of ideas within the IMF, not least based on research by the IMF economists.

The changes in the range and kind of policies that have been adopted since the Global Financial Crisis have been subsumed by Grabel (2011) into the concept of 'productive incoherence', which has replaced the 'neoliberal coherence', typical of the neoliberal era (Grabel 2013): "By productive incoherence I refer to the many responses to the crisis by national governments, multilateral institutions (particularly the IMF), and the economic profession that to date have not congealed into any

sort of consistent strategy or regime. The term is intended to signal the absence of a unified, consistent, universally applicable response to the crisis—either in the domain or rhetoric of policy making" (p. 564). In particular, she argues, "the responses to the current crisis range from those that reflect substantial continuity with neoliberalism to those that represent pronounced discontinuity. In this sense, the present incoherence is productive, signaling as it does not the death of neoliberalism, certainly, but the erosion of stifling consensus that has secured and deepened neoliberalism across the developing world over the past several decades" (p. 564).

There may be a temptation to consider the change in the IMF's position, as a result of the Global Financial Crisis, a complete reversal of its previous position. But this would be a mistake. The broad policy changes with respect to capital controls have been most clearly set out in the IMF's (2012a, b) 'institutional' view. It starts by reaffirming the overall importance of capital flows, although there is a 'threshold' level of financial and institutional development before the liberalization of capital flows becomes beneficial. However, it is clear that capital controls are seen as very much an adjunct to the use of traditional macroeconomic policies as may be seen by the discussion and flow chart in Ostry et al. (2010, Figure, p. 7; see also Habermeier et al. 2011; IMF 2010, 2011, 2012a, b; Ostry et al. 2011, 2012). Moreover, the emphasis is on restricting capital *inflows*. The limited use of capital controls and the conditions under which they are effective is typified by the following passage:

> A key conclusion is that, if the economy is operating near potential, if the level of reserves is adequate, if the exchange rate is not undervalued, and if the flows are likely to be transitory, then use of capital controls—in addition to both prudential and macroeconomic policy—is justified as part of the policy toolkit to manage inflows. Such controls, moreover, can retain potency even if investors devise strategies to bypass them, provided such strategies are more costly than the expected return from the transaction: the cost of circumvention strategies acts as 'sand in the wheels'. (Ostry et al. 2010, p. 5)

The IMF itself has contributed a number of recent econometric studies on the efficacy of capital flows. It has found, for example, that those countries that used capital controls in the run-up to the current crisis fared better than those that did not (Ostry et al. 2010). However, the IMF evidence is not as overwhelmingly in favour of the efficacy of capital controls as some, such as Gallagher (2011), suggests. "A key issue of course is whether capital controls have worked in practice. Our sense is that the jury is still out on this, and it is difficult to get the data to speak loudly on the issue" (Ostry et al. 2010, p. 5). They find that controls are effective if there already exists a comprehensive system of restrictions, but it is not so clear cut if the current account is open. Moreover, they concentrate on controls for capital *inflows* and find that they do not reduce the volume, but do have an effect on influencing composition of capital inflows towards instruments that are less fragile. For example, greater debt liabilities (fixed obligations for the borrower but limited risk for the creditor) and financial FDI are associated with countries with the worse growth slowdown.

The fact that the jury is still out is typified by a recent paper of Klein (2012), who finds that capital controls are generally ineffective in restricting capital flows. Klein (op. cit.) examines the effects of capital controls on a number of financial variables (such as the change in the ratio of credit to GDP) drawing a distinction between 'episodic' or short- term capital controls (the 'gates') and long-term controls (the 'walls'). He uses panel data estimation for 44 countries over the period 1995–2010, 16 of which are persistently open (largely the advanced countries), 10 are persistently closed (all are emerging market nations) and 18 are episodic. He finds that, once one allows for differences in the logarithm of per capita income, neither type of capital controls is statistically significant in explaining differences in financial vulnerabilities (as proxied by, for example, the change in the credit to GDP ratio). The closed economies grow faster than the open economies over this period (the dummy variable for 'persistently closed to capital inflows' is statistically significant). However, again this becomes statistically insignificant when the log of GDP per capita is introduced as an explanatory variable. This is not surprising as the dummy variable is also capturing whether or not the country is a developing country, which is also closely correlated to the logarithm of

GDP per capita. Indeed, the reason why the advanced countries as a group grow more slowly than the emerging markets is that the latter have the benefit of technological catch up and other favourably supply-side factors missing from the estimating equation. In a shorter time frame, the advanced countries were also hit harder by the subprime crisis. Moreover, there are the usual limitations to this econometric approach. The panel imposes the same coefficients on each of the countries in the sample, ignoring their heterogeneity. The use of dummy variables for capital controls ignores the effectiveness of their implementation, which is likely to vary quiet considerably between countries. Consequently, it may be that detailed case-studies are likely to be more informative as to the effectiveness of capital controls than such cross-country regressions.

Jeanne et al. (2012) undertake a meta-regression approach and confirm what a large number of other studies have found. Free capital mobility has a little impact on economic development, although FDI and stock market liberalization may have some short-run effect. But they caution against interpreting this as having no need to be concerned about capital controls. They point out that some countries have used capital controls to keep the exchange rate devalued and to generate export-led growth. The classic example of this is China which imposes controls on capital inflows (with the exception of FDI) as well as outflows. They further argue that capital controls should be subject to international rules and agreements.

Ostry et al. (2010) also stress the potential serious multilateral consequences. The adoption of controls may slow down other much-needed reforms and may lead other counties to adopt them. "Widespread adoption of controls could have a chilling longer-term impact on financial integration and globalization, with significant output and welfare losses" (p. 5). Capital controls may lead to the crowding out of other less distortionary policies. This is a view held in more emphatic form by Olson and Kim (2013) who question even what we see as the limited IMF's concessions towards capital controls. "The IMF's new position on capital controls encourages countries to use direct controls as a politically convenient excuse to put off necessary economic reforms that are critical to enhancing efficiency and productivity. More notably, the IMF's recent promotion of capital controls in sovereign bailouts threatens to leave a permanent trail of capital restrictions."

These statements seem to suggest that, above all, the goal of liberalization is still seen as the norm (Vernengo and Ford 2014) and that any kind of restrictions or deviations from that goal should be seen as provisional and exceptional. It may be explained by the Grabel's (2013) concept of 'productive incoherence', i.e., as a sign that the policy space is really developing. But it may also actually mean that things seem to have changed so that everything can stay the same (Vernengo and Ford 2014). Only time will give the answer. But the case of Iceland shows that when all other measures have been exhausted, the IMF bows to the inevitable.

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7

Stemming the Tide: Capital Account Regulations in Developing and Emerging Countries

Annina Kaltenbrunner

Abstract This chapter examines the evolution of capital controls in developing and emerging countries (DECs). It provides a summary of the definition of capital controls, their rationale in different economic paradigms, and historical evolution. It then analyses the most recent controls implemented in the wake and aftermath of the global financial crisis in 2008. It argues that rather than fundamentally questioning the benefits of open capital accounts, these measures were imposed as a last resort given the inherent contradictions of the conventional macroeconomic configuration. Controls have remained market-based, temporary and frequently disguised as macroprudential regulations to deal with the worst implications of free capital account convertibility. As such, they have sought to safeguard the general openness to cross-border capital. The chapter also argues that given the inherent instability of international financial markets and the structural subordination DECs assume in them, capital controls need to be permanent, comprehensive and institutionalised development instruments.

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7.1 Introduction

Capital controls are on the agenda again. Large swings of cross-border capital flows and consequent exchange rate pressures, credit market overheating and new forms of external vulnerability have put the benefits of free capital accounts once again into doubt. Over recent years, several developing and emerging countries (DECs) have taken a bolder stance towards re-regulating the free movement of international capital flows. Moreover, these measures have changed, becoming more sophisticated, variegated and macroprudential. At the same time, the international community, not least the International Monetary Fund (IMF), seems to have changed its attitude towards capital controls. From a rejection at all terms, international financial institutions (IFIs) have moved to a cautious acceptance given specific circumstances and conditions.

This chapter relates to this 'new normal' (Grabel 2017) of capital controls in two ways. First, it provides a comprehensive overview and summary of the issues regarding capital controls in DECs. It does so on the basis of conceptual, theoretical, and historical grounds. Second, it places particular emphasis on the most recent waves of capital controls and analyses whether they represent a structural shift in the attitude towards free capital accounts. It asks the questions of how do recent controls differ, what has changed, and do they indeed represent a new era of financial globalization? In contrast to the existing literature, rather than analysing the attitude of the international community (in particular, the IMF) towards these controls, it focuses specifically on the measures implemented by DECs.

It argues that although it is a huge step forward that capital controls have been, at least to a certain extent, accepted and introduced in DECs, they are still a long way from what would be envisaged by critical scholars. It argues that rather than an active step towards lowering capital account

mobility, recent measures were imposed as a last resort given the inherent contradictions and failure of the conventional macroeconomic configuration. Controls have remained market-based, temporary and frequently disguised as macroprudential regulations. As such, these controls were largely aimed at dealing with the worst impacts of international capital flows in order to maintain a general willingness to capital account openness, rather than fundamentally questioning the benefits of free capital account convertibility. For critical scholars, however, this does not go far enough. Given the inherent instability of international financial markets and the structural subordination DECs assume in them, capital controls need to be permanent, comprehensive, and institutionalized. Rather than temporarily correcting market failures or mitigating the worst impacts of capital flows, they should be used as enduring development policy instruments to grant economic policy autonomy, develop the economy and stimulate domestic savings.

Following this introduction, Sect. 7.2 briefly defines capital controls and differentiates them from macroprudential regulations. Section 7.3 summarizes their economic rationale in different economic paradigms and Sect. 7.4 presents a short historical account of the use of capital controls in DECs. Section 7.5 describes the macroeconomic configuration in the 2000s and discusses the implementation of recent capital controls measures. Section 7.6 presents a very short review of the effectiveness of capital controls and Sect. 7.7 assesses most recent controls. Section 7.8 summarises and concludes.

7.2 Definition and Differentiation

Over time different terms have been used to denominate restrictions on cross-border capital flows: capital controls, capital account regulations, capital account management (e.g. Fritz and Prates 2013; Gallagher et al. 2012; Palma and Ocampo 2008; Subbarao 2014). In its recent publications, the IMF has replaced capital controls with the more neutral and technical capital flow management techniques (IMF 2011b; Ostry

2012).[1] In this chapter, we use the term capital controls given its historical and political tradition. Generally speaking, all these terms refer to restrictions which discriminate against non-residents. Moreover, they are targeted at cross-border operations. This means that, in theory, they do not target either foreign nationals operating onshore (e.g. local subsidiaries of foreign banks) or the operations of nationals operating offshore.

In that respect it is crucial to differentiate capital controls from macroprudential regulations. Whereas the importance of capital controls has declined continuously across the globe, macroprudential regulations have gained acceptance and prevalence in particular after the global financial crisis of 2008 (Baker 2013).[2] The main objective of macroprudential regulations is to maintain financial stability and secure the 'efficient' functioning of financial markets. They are aimed at reining in the excesses rather than fundamentally altering the course of privately-driven market behaviour. Although macroprudential regulations can have some dampening or even a halting effect on international capital movements, they do not discriminate against agents according to their residence. For example, macroprudential policy tools can mitigate the systemic vulnerabilities produced by unsustainable capital flows or excessive exchange rate exposures. However, they would not be aimed at affecting directly the level or direction of these flows or indeed aim to alter the exchange rate level (IMF AREAER 2013). This shows that inevitably there will be some overlap between the two categories and macro prudential regulations can, and indeed are as discussed in more detail in Sect. 7.7, increasingly used as substitute for capital controls.

Table 7.1 gives an overview of some of the most common capital controls and macro prudential regulations. Macroprudential measures,

[1] Indeed, this changing terminology is more than just semantics. Given their tumultuous past, the shift from capital controls to capital account regulations and capital account management also shows the increasing incorporation of these measures into the accepted macroeconomic toolkit and the attempt to convert measures which "… had long been discredited as a vestigial organ of wrong-headed, dirigistic economic meddling in otherwise efficient markets" (Grabel 2015, p. 23) into neutral and technical instruments.

[2] Despite, or probably because of its increasingly widespread use, the term macroprudential is not always clearly defined (Baker 2013; Borio 2011). According to the Bank for International Settlements (BIS), macroprudential policy includes policies, which adopt an explicitly systemic perspective that is policies that target "a risk of disruption to financial services that is caused by an impairment of all our parts of the financial system and has the potential to have serious negative consequences for the real economy" (BIS CGFS 2010, p. 2).

Table 7.1 Capital controls and Macroprudential measures

	Capital Controls	MacroPrudential
Price-based	– Unremunerated Reserve Requirements (IF) – Taxes on new debt inflows, or on foreign exchange derivatives (IF) – Taxes on net liability position in foreign currency of financial intermediaries (IF) – Taxes on capital outflows (OF)	– Liquidity/reserve and capital requirements with a buffer character (LEV; LIQ) – Limits on leverage in a particular type of lending contract (LEV) – Profit distribution restrictions (LEV) – Caps on Loan to Value (LTV) ratios (in particular for sectors prone to strong credit growth) (LEV)
Quantity-based	– Limits on net liability position in foreign currency of financial intermediaries (IF) – Restrictions on currency mismatches (IF) – Limits on domestic agents that can borrow abroad (IF) – Mandatory approvals for all or some capital transactions (IF) – Minimum stay requirements (IF) – Mandatory approval for domestic agents to invest abroad or hold bank accounts in foreign currency (OF) – Mandatory requirement for domestic agents to report on foreign investments and transactions done with their foreign account (OF) – Restrictions on amounts of principal or capital income that foreign investors can send abroad (OF) – Limits on how much non-residents can borrow in the domestic market (OF)	– **Reserve Requirements (LIQ)** – **Currency mismatch limit (LIQ)** – **FX lending restrictions (LIQ)** – **Open FX position limit (LIQ)** – **Core funding ratios (LIQ)** – Concentration limits (INT) – **Systemic capital surcharge (INT)**

Sources: adjusted from Gallagher (2012) and BIS-CGFS (2010)
Notes: IF stands for Inflows; OF stands for outflows; LEV, LIQ, and INT stand for leverage, liquidity and interconnectedness risk respectively (BIS CGFS2010)

which have effects akin to those of capital controls, are highlighted in bold.

Capital controls themselves cover a wide range of measures and can be classified across different dimensions. First, the literature distinguishes between administrative and market-based measures. Administrative controls include outright prohibitions on foreign borrowing or lending, quantitative limits on these transactions, and the requirement that international capital transactions first receive government approval. Market-based measures, on the other hand, comprise taxes on cross-border capital transactions, differential bank reserve requirements for resident, as well as non-resident accounts, and the requirement that some proportion of capital inflows be deposited in a non-interest-bearing account at a central bank (unremunerated reserve requirement) (Klein 2012). The second distinction made is that between long-standing permanent capital controls and those that are implemented as temporary counter-cyclical tools. Related to this, it is important to differentiate between those countries, which have maintained a certain degree of capital account regulation over recent decades (e.g., China and India), and those, which have liberalized early on and have temporarily attempted to mitigate the worst effects of free capital mobility (N Magud and Reinhart 2006). The focus of this chapter is on the latter category. Third, authors have distinguished between controls on capital outflows and those on inflows. Finally, critical political economy scholars have differentiated controls that are static, i.e. techniques, which authorities do not modify in response to changes in circumstances, and dynamic regulations, which can be activated or changed as circumstances warranted (Epstein et al. 2003; Fritz and Prates 2013; Grabel 2012).

7.3 The Economic Rationale

The economic rationale for and against capital controls is closely related to the literature on the costs and benefits of capital account liberalization. In traditional neoclassical economics the free movement of capital brings unequivocal benefits for (developing and emerging) countries, which means that any restrictions on cross-border movements can only

be distortionary and welfare-reducing. In a nutshell, in this view private financial flows are essential to compensate for a lack of domestic savings and allow consumption smoothing at the moment of temporary liquidity shortfalls (Obstfeld and Rogoff 1996). Even if these immediate benefits do not materialize, the collateral benefits make it still worthwhile to pursue capital account liberalization. The exposure to international financial investors is thought to increase the efficiency and depth of private domestic financial markets and ensure prudent macroeconomic policy by recipient countries due to the 'disciplinary forces' of the market (Prasad et al. 2004). In a similar vein, open capital accounts are thought able to stimulate the overall efficiency of investments, and enhance private investment through facilitating risk management and exerting corporate control (e.g., King and Levine 1993; Levine 1997). From the investor perspective, the free flow of capital is thought to allow for an efficient global allocation of resources and complete international risk diversification.

Recurrent financial crises, the high volatility of capital flows, and the fact that rather than being net recipients of capital flows, DECs have financed current account deficits in the developed world (particularly the USA), have not remained unacknowledged in neoclassical economic literature. For example, a by now extensive theoretical and empirical literature shows that rather than driven by domestic (pull) factors, international capital flows are largely determined by push factors, that is conditions in developed financial markets (Bluedorn et al. 2013; Cerutti et al. 2015; IMF 2011a). In a similar vein, several authors in the neoclassical tradition acknowledge that rather than being motivated by rational risk–return considerations, international capital flows are subject to herding, self-fulfilling prophecies, and contagion (e.g. Jeon and Moffett 2010; Kaminsky and Schmukler 1999; Radelet et al. 1998). Not least the asymmetric information paradigm has shown that investment behaviour by private financial agents and consequently capital account liberalization can be, and frequently is, suboptimal and increases output volatility (Stiglitz 2002, 2004). Finally, authors, including from the IMF, have shown that there is no empirical evidence that capital account openness is positively related to economic growth (Aizenman et al. 2011; Prasad et al. 2004).

In most of this literature, however, the general desirability of capital account liberalization has remained untouched. Rather than restrict-

ing the free movement of capital, sound macroeconomic fundamentals, institutional strengthening, the further removal of the state from private financial markets (including the central bank from the foreign exchange market), and domestic financial deepening should reduce the destabilizing implications of capital movements. According to the asymmetric information paradigm, increased transparency, predictability and credibility of policymaking should reduce the costs of free capital accounts. Some critical authors within neoclassical economics, such as Jagdish Bhagwati, Paul Krugman, Joseph Stiglitz and Dani Rodrik, have argued for some degree of capital controls in the wake of the Asian financial crisis. However, even within those circles, these were frequently seen as 'second-best' and a 'temporary evil', useful only until all of the institutional prerequisites for full financial and capital account liberalization are in place (Epstein et al. 2003).

A more critical stance towards capital account liberalization in the neoclassical tradition seems to have further strengthened in the wake of the global financial crisis. Most recently selected neoclassical authors have published models which justify the use of capital controls from a welfare perspective. According to this 'new welfare economics' of capital controls, temporary, counter-cyclical capital controls can be welfare-enhancing to correct for various market failures (Gallagher 2012). In what is probably the most prominent set of these new models, capital controls are modelled as a Pigouvian tax which forces economic agents to internalize the externalities and systemic risk of large capital inflows and thereby restore an efficient market equilibrium (Aizenman 2011; Costinot et al. 2011; Jeanne and Korinek 2010; Jeanne et al. 2012; Korinek 2011; Stiglitz 2010).[3] For example, Korinek (2011) builds an open economy model where the representative, utility-maximizing agent undervalues the utility of liquidity. This inefficient solution creates economic distortions in the form of overborrowing, excessive risk taking and short-term debt. Capital controls remove these distortions by aligning the individual and social value of risk. In a similar vein, Aizenman (2011) models a tax on capital inflows (in contrast to the costly and potentially ineffective strat-

[3] For a comprehensive overview of these new models of capital controls, see Gallagher (2012).

egy of reserve accumulation) to limit excessive short-term borrowing and consequent fire sales and sudden stops.

Thus, these models endorse a certain degree of capital controls. However, they still remain limited in their scope and remit. First, as in previous years, controls are only imposed on inflows. Outflow controls remain distortive and welfare-reducing. Second, measures are limited to market, price-based measures to restore efficient market equilibria. Akin to the neoclassical argument for trade protection, temporary capital controls are thought to reduce market failures and restore efficient markets, rather than to interfere in the market process per se.[4] In effect, what these models consider are macroprudential regulations rather than capital controls. Finally, this also means that the benefit of financial integration per se remains untouched. As long as market failures can be corrected, DECs should be able to benefit from the effects of cross-broader capital flows. Indeed, Stiglitz (2010) shows in his model that a system of capital controls, called circuit breakers, can increase welfare and can even allow for a higher degree of integration than if controls are not used.

Heterodox economists, in turn, have long questioned the desirability of free capital accounts. Drawing on the work of John Maynard Keynes, Hyman Minsky, and Raúl Prebisch, among others, these authors stress the inherent risks and fragilities related to capital flows. For example, scholars drawing on Keynes' Chap. 12 of the *General Theory* have pointed to the high volatility and large swings of capital flows and exchange rates and speculative attacks unrelated to economic conditions (Alves et al. 2000; Arestis and Sawyer 1997; Davidson 1999; Harvey 2009). In these models, the lack of objective underlying 'fundamentals' means that financial expectations are primarily anchored by short-term expectations and social conventions, which are unstable and can change entirely unrelated to objective economic conditions. In this view, intersubjective processes of price formation, such as Keynes' famous beauty context, and psychological phenomena, are an important part of international capital flow movements (Dow 2011). As Davidson (2010) notes, drawing on Keynes: "If there is a sudden shift in the private-sector's bull-bear disposition, what can be

[4] Indeed, as Gallagher (2012) pointedly shows, rather than the 'new protectionism' capital controls are seen as the 'new correctionism'.

called the bandwagon effect, then price stability requires regulations constraining capital flows into and/or out of the market to prevent the bears from liquidating their position too quickly (or the bulls from rushing in) and overcoming any single agent (private or public) who has taken on the responsible task of market maker to promote 'orderliness'" (p. 100).

Authors influenced by Minsky's writings have pointed to the inherent instability and fragility of international capital flow movements, focusing in particular on the liability side of international balance sheets (e.g., Agosin and Huaita 2011; Arestis 2001; Arestis and Glickman 2002; Dymski 1999; Kaltenbrunner and Painceira 2015; Kregel 1998, 2009). For example, Arestis and Glickman (2002) show in the case of the Asian financial crisis, that the deterioration of domestic balance sheets and rise in currency mismatches were the result of the normal working of emerging capitalist economies, as euphoric expectations spurred by strong capital inflows and exchange rate expectations induced agents to increase their liabilities relative to income streams. A similar analysis is conducted by Kaltenbrunner and Painceira (2015) for the 2008 global financial crisis. The authors show that, rather than domestic economic conditions, the large exchange rate depreciations experienced by many DECs in the course of the global crisis were related to the currency mismatches in international financial investors' balance sheets, which had to adjust their positions as international market conditions changed.

Finally, a strand of Post-Keynesian authors stresses the hierarchic structure of the international monetary and financial system, which means that DECs' financial integration always takes place on subordinated terms (De Conti et al. 2014; Herr and Hübner 2005; Kaltenbrunner 2015b; Prates and Andrade 2013; Riese 2001). Based on the application of Keynes' liquidity preference theory to the open economy, these authors show that DECs are primarily recipients of short-term volatile capital flows (as international investors ask for higher liquidity to compensate for these currencies' lower liquidity premia), have to offer higher interest rates (to compensate for their lower international liquidity premia), and are subject to external vulnerability and monetary subordination (as any change in conditions in the currency with the highest international liquidity premium, today the US dollar in Keynes' times the Pound sterling, can lead to a portfolio adjustment unrelated to domestic economic

conditions). These conditions fundamentally constrain capital accumulation in DECs and hinder advancement to higher levels of the international monetary hierarchy.

In this critical literature, then, permanent and comprehensive capital controls are essential to influence destabilising expectations formation processes, avoid balance sheet fragilities, reduce DECs' vulnerability to international market conditions, and allow them to lower interest rates in order to support the domestic accumulation process.[5] This rationale for capital controls echoes Keynes' (1980) own concerns when he writes: "In my view the whole management of the domestic economy depends on being free to have the appropriate rate of interest without reference to the rates prevailing elsewhere in the world. Capital controls is a corollary to this" (Keynes 1980, p. 149). Thus, in contrast to neoclassical economies, where capital controls are at best aimed at correcting temporary market failures, in this literature capital controls are a permanent feature of the macroeconomic toolkit to be used as development tools. Rather than getting prices right, capital controls are an essential feature to allow DECs to keep prices 'wrong' and conduct autonomous development policy which at times might be at odds with policies considered appropriate by financial markets.[6]

The evidence of why countries are seen to impose capital controls echo the concerns by heterodox scholars. For example, in their extensive review of the empirical evidence of the effectiveness of capital controls, Magud et al. (2011) point to four 'fears' which motivate the imposition of capital controls: first, the fear of sustained periods of appreciation caused by strong capital inflows; second the fear of 'hot money', that is the fear of short-term speculative capital flows, which can reverse suddenly and with little relation to domestic market conditions; third, the fear of the problems caused by large capital flows (e.g., credit market booms and

[5] A different approach to capital controls is taken in the Marxist literature. Rather than highlighting the increased macroeconomic freedom capital controls can grant DECs, these authors focus on the role of capital controls in sustaining existing modes of capital accumulation and social relations (Alami 2016; Soederberg 2002, 2004).

[6] For example, Epstein and Schor (1992) build a macroeconomic model where permanent controls on capital outflows allow the government to lower interest rates (which in turn stimulate growth and employment) without affecting the exchange rate or foreign exchange reserves.

asset market price bubbles); and finally, the fear of losing monetary policy autonomy.[7]

7.4 The 1980s and 1990s: Capital Account Liberalization and the Demise of Capital Controls

Capital controls have been part and parcel of the macroeconomic toolkit of developed countries throughout their history. For example, Gosh and Qureshi (2016) show that restrictions on the import and export of currency into and out of England had existed as early as the Middle Ages. Even during the late nineteenth century, often considered the golden era of financial globalization, the leading capital exporters of the day (Britain, France, and Germany) at times restricted issuances on their markets (albeit mainly for political rather than for economic reasons). Probably the most prominent episode of capital controls in the modern history of developed countries, however, has been the Bretton Woods system. After a period of instability and financial crises in the interwar period, often accompanied by ad hoc unilateral exchange controls (mostly on outflows), trade restrictions and competitive devaluations, the new post-World War II system of fixed exchange rates was supported by extensive and institutionalized regulations on the movement of international capital. For the key architects of the Bretton Woods System, John Maynard Keynes and Harry Dexter White, it was clear from the interwar experience that a system of free trade and free capital account convertibility could not be combined. Moreover, they saw that open capital accounts were incompatible with autonomous economic policies directed towards domestic demand in combination with fixed exchange rates (Gosh and Qureshi 2016; Helleiner 1994). Interestingly, at that time most restrictions were imposed on outflows rather than inflows (Dierckx 2011).

[7] Most frequently, this argument refers to the impossible trinity, that is the inability to conduct independent monetary policy and a managed exchange rate regime in the presence of free capital flows. However, as Rey (2015) has recently argued, echoing long-standing arguments of heterodox economists, even if monetary policy authorities do not defend a certain exchange rate regime, free capital flows might still constrain interest rate setting, effectively posing an impossible duality.

Capital controls in the developed world started to be dismantled as early in the 1950s and 1960s, a process which gathered pace in the 1970s. By the 1980s, most capital controls in the developed world had disappeared. It was arguably the tolerance and rise of the Eurodollar market which started to undermine the use of capital controls through providing a completely unregulated repository for the dollar at a time when rates in New York were still limited by New Deal regulations (Panitch and Gindin 2009). During the 1960s managers, investors, and speculators creatively began to find their way around the myriad regulations designed to constrain their practices. Moreover, the 1970s, and to an even greater extent the 1980s, saw an ideological shift towards reduced government intervention in the economy more generally, which included the use of measures on the free movement of capital. Abdelal (2007) argues that it was in particular the European countries, led by the French, who supported a further removal of the restrictions on international capital movements. French socialists, catering to their middle-class electorate, felt that "capital controls did not work to prevent the rich and well connected from spiriting their funds out of the country, but that they worked all too well to lock up the bank accounts of their working and middle-class constituents and voters" (p. 4).

As Gosh and Qureshi (2006) point out, the experience of DECs runs slightly counter to those in developed countries, at least until the 1980s. Whereas there were hardly any restrictions on international capital movements during the Gold Standard and Bretton Woods era, in the late 1960s and early 1970s large parts of the developing world introduced restrictions on international capital movement in order to support domestic industrialization strategies. Capital flows to DECs during the Gold Standard era were largely dominated by long-term capital inflows, mostly foreign direct investment (and some lending to domestic sovereigns). Although some boom-and-bust dynamics could be observed, the main conflict and implications were over the conditions on labour and existing socioeconomic structures. As a result, capital accounts in these countries remained relatively open all the way during the Bretton Woods era (Gosh and Qureshi 2016).

In Latin America this changed with the military coup in Brazil in 1965 and the subsequent adoption of an import-substituting industri-

alization strategy. The model was emulated broadly by other countries in the region and beyond as their own political climate changed. For example, in South Asia countries also experimented with inward-looking policy frameworks in the late 1950s and 1960s and became significantly financially closed. East Asia, which had traditionally been less financially open, further tightened their capital account restrictions in the 1960s and 1970s as they pursued development through active government intervention (Gosh and Qureshi 2016). As Gosh and Qureshi (op. cit.) show, these restrictions in DECs were also mostly outflow controls. It was only in the early 1970s that some form of prudential measures on capital inflows emerged.[8]

As early as the 1970s, these national development models slowly came to an end. In the mid-1970s three Southern cone countries, Argentina, Chile and Uruguay, rapidly liberalized their capital account (French-Davis and Griffith-Jones 2011). Concurrently, DECs experienced their first wave of private international capital flows as petrodollars were recycled though the international banking system. These flows were mostly in the form of syndicated dollar-denominated bank loans and were directed towards national sovereigns. This first wave of more short-term capital flows ended in the external debt crisis of the 1980s. Rising interest rates in developed countries meant that many DEC governments found themselves unable to service their debt service payments. The external debt crisis started with the Mexican default in 1982 and soon engulfed a wide range of countries, including Brazil, Argentina, Venezuela and the Philippines. The experiment of Southern countries collapsed in the early 1980s after speculative bubbles, appreciated exchange rates, current account deficits, credit booms, low domestic savings and huge external debts (Diaz-Alejandro 1985; Ffrench-Davis and Griffith-Jones 2011).

The aftermath and the resolution of the international debt crisis also laid the foundation for further capital account liberalization, which gathered pace in the early 1990s with the rise of the Washington Consensus.[9]

[8] For example, Brazil introduced safeguards against the excessive use of foreign credits by commercial and investment banks by limiting the foreign obligations that each bank could assume (Gosh and Qureshi 2016).

[9] Painceira (2011) and Kaltenbrunner and Karacimen (2016) show that the (failed) debt restructuring of the Brady Plan was an important catalyst for further capital account liberalization and finan-

Under the auspices of the IMF and the World Bank and guided by the Washington Consensus, the early 1990s saw a widespread move to financial deregulation, financial liberalization and the more general withdrawal of the state from the economy. The theoretical underpinnings and potential benefits of these liberalization measures were rooted in the beneficial effects of capital account liberalization set out in Sect. 7.2 and the extensive literature on 'finance and development', pioneered by the work of McKinnon (1973) and Shaw (1973).[10] As a result, DECs experienced their second boom in private, short-term capital flows. These flows were still dominated by international bank lending, but portfolio flows to alternative domestic asset markets, such as equities and domestic bonds, and short-term time deposits steadily increased. As Ffrench-Davis and Griffith-Jones (2011) point out, these changes in international capital flows were, in principle, considered as beneficial because they involved a greater diversification and reduced flows with variable interest rates, which had contributed to catastrophically to the external debt crisis. At the same time, faced with a more liberal financial environment, domestic financial agents started to participate more actively in financial markets.

In practice, though, rather than increasing resources for investment and allowing for consumption smoothing, financial liberalization led to increased volatility and instability in DECs. High and persistent interest rates attracted yield-seeking capital flows and increased financing costs for investment. Domestic economic conditions became increasingly dependent on international financial markets. Rather than acting stabilizing, the diversification into different types of capital flows concentrated on highly reversible forms (Ffrench-Davis and Griffith-Jones 2011). Moreover, international capital flows and increased financial openness created domestic vulnerabilities, which ultimately led to the severe financial crises of the late 1990s and early 2000s. First, strong capi-

cialization in DECs. That occurred through creating tradable securities, making DECs dependent on future capital flows to service their debt payments, and increasing the role of international financial institutions in the economy.

[10] According to this literature, financial repression, that is state involvement in financial markets, hinders economic development through maintaining artificially low interest rates, creating an inefficient allocation of resources, and hampering productivity growth through insufficient competition. Creating space for private financial markets, in turn, should work against these forces and support sustainable economic growth.

tal inflows and domestic demand contributed to appreciating exchange rates, resulting in rising current account deficits and even higher needs to import foreign capital. Second, financial openness increased domestic agents' articulation into (international) financial markets, rendering them vulnerable to changes in financial market conditions. As capital flows reversed following the onset of the financial crises, vulnerabilities in the balance sheets of domestic economic agents led to widespread default, severe contractions in demand, growth and employment.

However, not all countries had liberalized their capital accounts uncompromisingly during this time. Several countries maintained some, others even extensive restrictions on international capital movements during this decade. For example, in 1991 the central bank of Chile introduced a 20 percent unremunerated reserve requirement (URR) on foreign borrowing, regulatory requirements on corporate foreign borrowing, and extensive reporting requirements for banks' capital transactions. In a similar vein, beginning in September 1993, the central bank of Colombia required that non-interest-bearing reserves of 47 percent be held for one year against foreign loans with maturities of 18 months or less. Moreover, foreigners were simply precluded from purchasing debt instruments and corporate equity. At the same time, China and India maintained widespread and comprehensive restrictions on international capital movements (Epstein et al. 2003). Epstein et al. (2003) show that these controls were largely successful in reducing these countries' currency, foreign investor and fragility risk. Moreover, measures in Chile and Colombia were successful in changing the maturity structure of flows and reducing the vulnerability to the Asian crisis.

Probably the most famous example of outflow controls at that time was Malaysia. In 1998 the country had introduced a comprehensive and well-designed package to reduce exchange outflows and ringgit speculation in the wake of the Asian crisis. Measures imposed included a system of graduated exit levies, with different rules for capital already in the country and for capital brought in after that date. The controls were successful in segmenting financial markets, providing breathing space for macroeconomic policy and a speedier recovery than would have been possible via the orthodox IMF route (Epstein et al. 2003; Kaplan and Rodrik 2001).

Despite these successes, Epstein et al. (2003), however, also show that many of these capital account regulations were dismantled in the wake or aftermath of the Asian financial crisis. Indeed, despite the devastating effects of free capital account convertibility in the 1990s, the 2000s heralded another wave of short-term, private capital flows, again larger than anything seen before.

7.5 The 2000s: The Global Financial Crisis and the Rebirth of Capital Controls

Although the optimism about free capital flows was severely dented by the experience of the emerging market crises of the late 1990s and early 2000s, and dissenting voices even from the establishment started to question the benefits of unfettered capital flows,[11] the first part of the 2000s was characterized by another boom in capital flows to DECs. Partly as a result of adjustment programs in the aftermath of the crises, and partly as a result of further changes in domestic economic models, large parts of DECs experienced further financial liberalization, including those previously more careful such as India and China. To make this liberalization possible and supposedly avoid future instabilities and crises, in many countries, these liberalization programs were accompanied with fundamental changes in the macroeconomic framework. To avoid unsustainable exchange rate pegs, which were identified as the root cause of the crises of the 1990s, many of these countries switched to at least officially floating exchange rates.[12] The new nominal anchor was provided by the overriding importance of inflation and the institutionalization of inflation-targeting regimes. Finally, stability was to be provided by inde-

[11] As early as 2002, the IMF had begun to soften its preference for unfettered international capital flows. In that year, Kenneth Rogoff, then serving as Chief Economist and Director of Research of the IMF, wrote in the December issue of the IMF's publication *Finance and Development*: "These days, everyone agrees that a more eclectic approach to capital account liberalization is required" (Rogoff 2002, p. 1).

[12] In practice, many of them have been managing their exchange rates, a phenomenon known as 'fear of floating'.

pendent central banks and, as will be seen below, the massive accumulation of foreign exchange reserves.

As a result of these changes, and the return of liquidity to international financial markets after the dot-com bubble, there was an unprecedented surge in international capital flows. Private financial flows to DECs swelled from an average of US$487 billion in 2003–2005 to more than US$1.5 trillion in 2007. In terms of stocks, Akyüz (2015) shows that for the entire period of 2000–13 gross international assets and liabilities of DECs grew by about 15 and 12.5 percent per annum, respectively, and their gross balance sheets expanded by more than fivefold. In addition, the nature of these capital flows changed. Rather than bank lending or foreign currency sovereign debt flows as in previous episodes, capital flows were increasingly directed towards (short-term) domestic currency assets, such as domestic public bonds, equities and even more complex assets such as derivatives and the currency per se as in the notorious carry trade phenomenon (Akyüz 2015; Kaltenbrunner and Painceira 2015). According to the World Bank (2013), at the end of 2012 the share of non-resident holdings in $9.1 trillion local debt markets of DECs reached an unprecedented 26.6 percent, exceeding 40 percent in some economies (Akyüz 2015). On the investor side, traditional DEC investors (such as banks and dedicated funds) were complemented with a wide range of other actors, including institutional investors (pension and insurance funds) and new types of mutual fund investors such as exchange-traded funds and macro hedge funds (Aron et al. 2010; Bonizzi 2013; Ffrench-Davis and Griffith-Jones 2011; Jones 2012; Yuk 2012). Given the large size of their balance sheets, any reallocation of these investors can have large repercussions on developing country asset markets.

The results of these strong capital inflows were sustained exchange rate appreciations, domestic asset price bubbles and credit booms. To deal with these pressures, DECs initially largely followed the standard market-based macroeconomic toolkit recommended by neoclassical economists and international financial institutions (IFIs). As indicated above, this consisted of inflation-targeting regimes, central bank independence and fiscal prudence to provide credibility and macroeconomic discipline. To deal with the strong exchange rate pressures, countries were recommended to engage in sterilized foreign exchange intervention. This was

permissible as long as the exchange rate goal did not become inconsistent with the inflation target, and inflation remained the one and overriding objective of monetary policy. Whereas foreign exchange purchase were aimed at dampening the worse impact on the exchange rate (and accumulate a war chest of foreign exchange reserves in the case of future outflows), sterilization operations should mop the excess liquidity from the market to avoid any negative impact on inflation. As a result, given the combination of strong capital inflows and all-time high of commodity prices, foreign exchange reserves in DECs swelled from US$0.5 trillion in 2000 to US$8.1 trillion in 2014.

As capital flows experienced their final surge from the beginning of 2006 some countries, in particular those which received the largest amounts of capital, started to impose restrictions on international capital flows. Colombia, for instance, imposed an URR on foreign borrowing and portfolio inflows in 2007 (while also limiting the currency derivative positions of banks). Similarly, Thailand imposed a 30 percent URR (with a 10 percent penalty if the funds were withdrawn in less than one year) (Gosh and Qureshi 2016). Brazil tightened its tax on foreign purchases of bond and equities in the run-up to the crisis in January 2008 (Baumann and Gallagher 2012; Fritz and Prates 2013). However, these attempts remained timid, limited and, despite the increasingly obvious negative impact of the strong capital flows, the attitude towards capital controls remained generally negative. As Gosh and Qureshi (2016) show, in some situations the controls even backfired. For example, evoking memories of the currency crisis nearly a decade earlier, the introduction of Thailand's URR resulted in strong market reactions, which plunged by 15 percent in less than one day. Financial markets sent "a clear signal that they did not approve of the capital controls, whether on outflows or on inflows, to the point of not even bothering to distinguish between them" (Gosh and Qureshi 2016, p. 28).

This attitude arguably changed with the international financial crisis and its aftermath. Despite strong fundamentals, record foreign exchange reserves and a successful reduction in their 'original sin' (the inability to borrow in domestic currencies), DECs' currencies plunged in the wake of the failure of Lehman Brothers. For example, the Brazilian Real depreciated by more than 60 percent during August and October 2008. In a

similar vein, the Colombian Peso and Korean Won both lost 13 percent in a month largely independent of domestic economic fundamentals (Arduini et al. 2012).

Kaltenbrunner and Painceira (2015) argue that these large exchange rate movements were the result of the structural changes in DECs' financial integration in the years preceding the crisis. On the one hand, the large exposure of foreign investors to domestic currency assets had made the prices of these assets increasingly sensitive to international market conditions. On the other hand, foreign investors' holding of domestic currency assets had converted currency movements into a crucial part of returns (often surpassing those made by the interest differential). This, in turn, had two implications for the exchange rate. First, the attempt to take advantage of favourable exchange rate movements in thin financial markets created the risk of destabilizing bubble dynamics, where foreign investors' expectations created self-fulfilling exchange rate swings (Kaltenbrunner 2015a). Second, foreign investors' exposure to domestic currency assets, funded on international financial markets, shifted the currency mismatch from the domestic to the foreign actors, thereby making them very sensitive to expected exchange rate changes. In this vein, Akyüz (2015) shows that the Lehman Brothers collapse had a much stronger impact on local currency issues than dollar-denominated issues. At the same time, local currency issues recovered much faster as expectations of exchange rate appreciation returned. Finally, it is interesting to note that long-term investors, in particular pension funds, contributed strongly to this adjustment. Although later to act, once pension funds adjusted their portfolios, the size of these positions was much larger exerting substantial pressures on DEC exchange rates (IMF 2014).

Some developed countries, such as Iceland and Cyprus, had to impose controls to deal with the effects of the crisis and its aftermath. DECs, in turn, initially recovered relatively quickly. In 2010, growth in DECs reached a strong 7 percent (compared with 2.8 percent in developed ones) (World Bank 2011). In addition, the reduction of currency mismatches meant that the private sector was less affected and central banks

could, for the first time, conduct counter-cyclical policy.[13] Nevertheless, the crisis experience left important scars, which played an important role in the subsequent decision to implement capital controls.

The moment for more widespread capital controls in DECs came in the years following the global financial crisis of 2008. Low, if not negative, real interest rates in developed countries meant that these countries experienced a fourth, and even more violent, surge of capital flows. According to Akyüz (2015), it is estimated that non-residents held $1 trillion government debt of DECs at the end of 2012 (not counting official loans). About half of this debt was incurred during 2010–12. Again, this surge resulted in appreciating exchange rates, overheating asset and credit markets, and balance of payments pressures. This time round, the situation was met with a more confident approach by DECs trying to stem the tide.

For example, to name just some of the more prominent cases, in October 2010 Brazil increased its tax on portfolio inflows to 4 percent and 6 percent for the case of equity funds and fixed income investments (IOF), respectively. At the same time, it increased the IOF on margin requirements on derivatives transactions from 0.38 percent to 6 percent. Confronted with further strong capital inflows, it implemented non-interest-bearing reserve requirements for the FX short positions of banks,[14] increased the IOF on new foreign loans to 6 percent, and implemented several restrictions on the local derivatives market in the first half of 2011 (Prates and Fritz 2012). The Brazilian finance minister at that time, Guido Mantega, went so far as to speak of a currency war.

In a similar vein, South Korea implemented a series of measures to reduce the strong pressures on the won. Like Brazil, it deployed more traditional controls, such as limits on bank loans and levies, but also devised innovative regulations on derivatives in order to stem inflows (Gallagher 2015). For example, starting in July of 2010, South Korean banks had

[13] It is important to note, however, that in several countries, including Brazil, Mexico and Poland, the large exchange rate movements had a severe impact on several companies, which had assumed speculative derivatives positions. In other words, whereas the vulnerabilities related to the original sin had been mitigated, others had emerged.

[14] Banks are important counterparties to the positions of foreign investors. Reducing the open FX position banks could take, was aimed at impacting this counterparty function and hence new capital inflows.

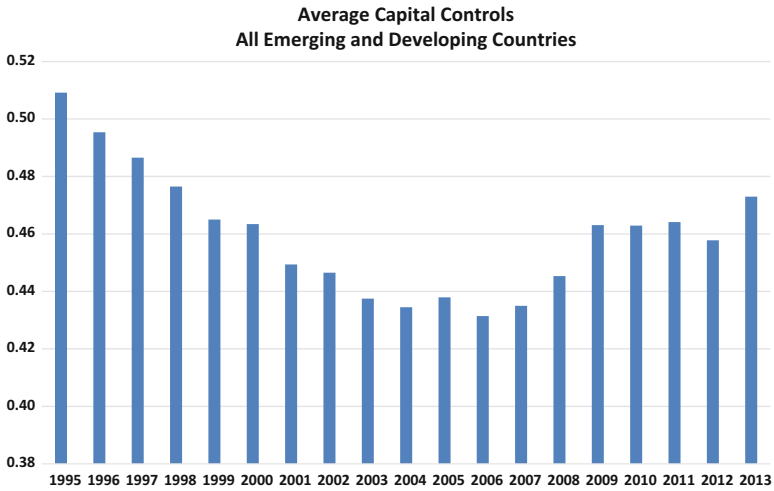

Fig. 7.1 Average capital controls (*Source*: Fernández et al. (2015b); *Notes*: The strength of capital controls is approximated with an index between 0 (no controls) and 1 (complete controls); indices are based on the IMF AREAER data)

to limit their currency forward and derivative positions at 50 percent of their equity capital. For foreign banks, the ceilings were set at 250 percent of their equity capital. Furthermore, South Korea tightened the ceilings on companies' currency derivatives trades to 100 percent of underlying transactions from the current 125 percent. Finally, Taiwan introduced controls on numerous occasions and even urged other nations to do the same. In November, 2009, it introduced bans on foreign funds from investing in time deposits and limited the percentage of currency that could be held by banks (Gallagher 2011).

Figure 7.1 shows the average inflow and outflow restrictions of a large range of DECs.

One can observe the continuous decline of capital controls measures for the decade after 1995 (including the years of the DECs' crises), the slight increase around 2006 and the further surge in 2008 in the wake of the global financial crisis. Figure 7.1 also shows that until 2013 controls

had remained relatively high and even increased further in the wake of the 2013 US tapering announcements.[15]

At the same time, the IMF seemed to make a U-turn and for the first time endorsed some restrictions on capital flows. Confronted with the challenges posed by the large swings in capital flows, it produced a series of research and policy papers, which gave legitimacy to a certain degree of capital account management (IMF 2011b; see, also, Ostry et al. 2010a, b). These culminated in the IMF's Institutional View on the Liberalization and Management of Capital Flows, which explicitly acknowledged that capital controls could form a legitimate part of the policy toolkit (IMF 2012). An in-depth engagement with this apparent change of mind is beyond the remit of this chapter, and some issues will be taken up again in Sect. 7.7, but critiques have questioned the extent of the IMF's changing position.[16] The conditions under which capital controls are legitimate remain relatively stringent. Only if the exchange rate is not undervalued, all other options are exhausted, and capital controls are not used to stray from orthodox fundamentals, these represent legitimate policy tool.[17] Thus, in practice the space for capital controls remains rather limited.

What interests us more at this point is: (a) why we have we seen this more positive stance towards capital controls from the side of the implementing countries; (b) what exactly has changed; and (c) whether we have indeed observed such a rupture in international governance. The first of these issues will be briefly addressed below, the second and third shall be discussed in more detail in Sect. 7.7.

[15] It is important to note, however, that not all countries resorted to capital controls during that time. Several countries, including Turkey, Chile, Mexico and Colombia, publicly rejected controls and continued to purchase dollars and conduct expansionary monetary policy. According to Grabel (2015) these divergent responses reflect several factors including different political economies, the continued say of neo-liberal ideas, and perhaps also the pride of struggling with a too strong currency in countries which traditionally faced the opposite problem. Moreover, it is important to note that many countries are legally barred from introducing controls on capital flows as a result of their membership of bilateral or multilateral trade and investment treaties (Gallagher 2010).

[16] For a more in-depth engagement with the IMF's changing position see, for example, Chwieroth (2014), Dierckx (2011), Fritz and Prates (2013), Gabor (2012), Gallagher (2014), Grabel (2015).

[17] For example, the IMF itself shows in a staff note that all examined countries (10 countries in Asia, Turkey, Brazil and South Africa) would have to pursue more orthodox macroeconomic policies before they could legitimately use capital controls (Pradhan et al. 2011).

Grabel (2015) has pointed to five reasons, which could explain DECs' more active use of capital controls. These are: the rise of increasingly autonomous developing states, which take advantage of the policy autonomy granted by the accumulation of foreign exchange reserves; the increased assertiveness of their policymakers due to their success in responding to the current crisis; a pragmatic adjustment by the IMF to an altered global political economy and its attempt to maintain legitimacy; the need for capital controls by countries at the extreme; and, finally, the evolution in the ideas of academic economists and IMF staff. Thus, for Grabel (2015), the crisis of 2008 marks a radical departure from the past, where the increased economic success and confidence of many DECs allowed them not only to break the rules but to "tear up the rule book altogether" (Grabel 2015, p. 18). The increased international power and influence of DECs, and the IMF's attempt to maintain legitimacy through showing a kinder face is also mentioned by Gallagher (2011). Moreover, he shows, with regard to the examples of Brazil and South Korea, how a combination of memories of the devastating impacts of the emerging market crises of the 1990s and political parties, which had the institutional structure and political backing to intervene in global capital markets and relatively autonomous finance ministry technocrats with some influence over the central bank, created space for measures of what he calls "countervailing monetary power" (Gallagher 2015).

Although I agree with Grabel (2015) and Gallagher (2015) that the global crisis of 2008 marked a turning point with regards to capital controls in many DECs, I am slightly less optimistic about the new policy space and autonomy gained by these countries. I would argue that rather than a sign of increased policy autonomy, many DECs had no other choice than to resort to capital controls in the presence of the extraordinarily strong capital flows and the exhaustion of the conventional, market-based framework, which had become victim of its 'own success'. In the new era of international financialized capitalism, capital flows to DECs have reached unprecedented dimensions, which these countries were simply unable to absorb in their domestic economies. DECs found themselves in a dilemma and unable to employ other policy measures, as strong, yield-driven capital flows caused domestic overheating, asset price bubbles and inflationary pressures. Institutionally bound by an inflation-

targeting regime, they had to raise interest rates to slow down the economy and reduce the inflationary pressures. Higher interest rates, however, further attracted yield-driven capital flows, undermining the central bank's initial attempt to cool the economy and thereby further appreciating the exchange rate. At the same time, the sterilized foreign exchange interventions also maintained high interest rates and substantially increased the public debt burden and fiscal cost. Moreover, Kaltenbrunner and Painceira (2012) show that rather than reducing the pressures on the exchange rate, the sterilized interventions plus reserve accumulation acted at times in a counterproductive manner, further attracting capital flows and appreciating the exchange rate.[18] Thus, on this account, rather than a reflection of more autonomous, independent policymaking, recent controls were the ultimate (temporary) resort of DECs to escape the contradictions of the conventional, neoclassical model.

At the same time, I would argue, the global crisis of 2008 had shown that even following this conventional, neoclassical model would not protect DECs from the vagaries of the international markets. As seen above, despite sound fundamentals, a reduction in balance sheet weaknesses, floating exchange rates, and record levels of foreign exchange reserves, these countries faced masses of capital outflows and large exchange rate adjustments when the subprime crisis struck in the USA. More than that, it was those countries which had adhered most diligently to the conventional model, and thus attracted most capital flows, which suffered most. Not even the presence of long-term, institutional investors, generally considered to be less destabilizing and more beneficial types of capital flows, reduced this impact. To the contrary, the large size of these investors' balance sheets had tremendous implications for domestic asset markets when they adjusted their positions. Thus, I would argue that it was the increased awareness among DECs that even playing according to the rules would not save them from the volatility of capital flows which emboldened these countries to resort to capital control measures. In other words, it became clear that DECs had nothing to lose by break-

[18] This result is also confirmed by Montiel and Reinhart (1999), who show that monetary sterilization is associated with an increase in capital flows, in particular short-term portfolio flows.

ing the rules and that, once again, following neoclassical policy advice would not allow for beneficial international integration.

Finally, this became particularly acute after the international financial crisis. Whereas before the crisis high commodity prices and external demand compensated for an appreciation in exchange rates, flagging external demand and falling commodity prices put pressures on external balances after the global crisis. This made any measures to dampen appreciation pressures even more important. As capital flows began to weaken and became negative in the wake of tapering (announcements), many of these controls were dismantled again in an effort to support weakening currencies and respond to a growing need for external financing in view of their widening current account deficits (Akyüz 2015).

7.6 Capital Controls and their Effectiveness: Empirical Evidence

Before presenting a more detailed assessment of the most recent round of capital controls it is important to discuss briefly whether capital controls have indeed been an effective tool to achieve the objectives set by governments. It is also interesting to consider whether certain types of capital controls have been more effective than others. Broadly, empirical studies on the effectiveness of capital controls can be divided into panel/cross-sectional studies, (comparative) case studies, and meta-analyses, which investigate the most salient results of existing empirical studies. The literature is relatively ample and below discussion only presents a snapshot of the most important results. Comparison is difficult given the different types of measures applied and the importance of other, complementing factors. Moreover, the empirical literature faces various shortcomings, including endogeneity and the difficulty to measure capital account openness and controls (Habermeier et al. 2011).

Probably the most prominent and comprehensive meta-studies are conducted by Magud and Reinhart (2006) and Magud et al. (2011). Drawing on more than thirty empirical studies of capital controls, the authors show that capital controls on inflows seem to make monetary

policy more independent (through introducing a wedge between the domestic and international interest rate), alter the composition of capital flows, and reduce real exchange rate pressures (although the evidence there is more controversial (Gosh and Qureshi 2016; Habermeier et al. 2011)). In this vein, Forbes et al. (2012), for example, show that capital controls can reduce the amount of more risky portfolio flows. Other authors have argued that by changing the composition of capital inflows, capital controls are also effective in reducing countries' vulnerability to crisis (Epstein et al. 2003; Montiel and Reinhart 1999). The IMF found that those nations that deployed controls were among the least hard hit by the Asian and global crisis of 2008 (Ostry et al. 2010).

On the other hand, the empirical literature seems to indicate that capital controls remain ineffective in impacting the general volume of flows. This is particularly due to the problem of circumvention and substitution. For example, when Brazil increased its tax on equity portfolio inflows, these flows fell, but consequently FDI flows surged as funds were channelled as inter-company loans (Habermeier et al. 2011). In contrast to these results, more recent cross-country studies Habermeier et al. (2011), for example, found that countries that are less open to financial flows experienced smaller inflow surges. In addition, the IMF argues that even in the presence of circumvention, controls can maintain their potency as the cost of this circumvention acts like "sand in the wheels" (Ostry et al. 2010).

With regards to most recent capital control measures, Baumann and Gallagher (2012) find in the case of Brazil that capital account regulations had small, but significant impacts on shifting the composition of capital inflows toward longer-term investment; also on the level and volatility of the exchange rate, on asset prices, and on the ability of Brazil to conduct more independent monetary policy. These results are, in part, echoed by Chamon and Garcia (2016) who show that the policies had some success in segmenting the Brazilian financial markets from global markets. These authors also show that whereas previous measures were ineffective in halting the exchange rate appreciation, the restrictions on derivative operations, adopted in mid-2011, led to a substantial depreciation in

the exchange rate.[19] For Colombia and Thailand, Clements and Kamil (2009) and Coelho and Gallagher (2012) show that capital controls had some effect on lowering the volume of inflows and reducing foreign borrowing, but they did not affect the exchange rate level and might have even increased the level of exchange rate volatility.

With regards to the different types of controls, while the literature shows that inflow controls did have some impact, controls on capital outflows, tended to be relatively ineffective (Magud et al. 2011). The only exception seems to have been the case of Malaysia where, as seen in Sect. 7.3, the decisive and comprehensive measures imposed by the government in the wake of the Asian crisis stemmed capital outflows and gave increased room for independent monetary policy. Also with regards to the different types of capital controls, Klein (2012) shows that countries which applied capital controls as permanent 'walls', rather than temporary and anti-cyclical 'gates', tended to have higher rates of GDP growth and lower rates of growth of financial variables. This is also echoed by Epstein et al. (2003), Ostry et al. (2010), and Habermeier et al. (2011), who show that countries with well-established permanent controls, which maintained an extensive system of restrictions on most categories of flows, were more effective than countries with temporary ad hoc controls. Finally, although quantity-based controls have become increasingly discredited over recent years, Ffrench-Davis and Griffith-Jones (2011) argue that quantity-based controls were not only effective in Malaysia, but have worked quite efficiently in reducing the sensitivity to international financial volatility, for example in China and India.

However, the empirical literature also shows the context-specific nature of the effectiveness of capital controls and the important role of accompanying structural, macroeconomic, and institutional factors to enhance their effectiveness. For example, Epstein et al. (2003) show that capital controls were most effective in the presence of strong macroeconomic fundamentals, high state and administrative capacity, and if dynamically applied and consistent with the national development mission. In a similar vein, Ariyoshi et al. (2000) point to the need for strong enforce-

[19] This result is also echoed by Fritz and Prates (2013) and Pereira da Silva and Harris (2013). It is important to note, however, that it was also at this time that international market conditions changed, which makes it difficult to isolate the effect of the derivatives measures.

ment capacity through comprehensive information and disclosure system between central bank and commercial banks. Gallagher (2015) stresses the need for existing legislation and an institutional framework, which allows financial authorities to act quickly and at their discretion without having to engage in long legislative processes and battles, especially during a boom where expectations are optimistic. On the other hand, the literature also shows that the implementation of capital controls becomes increasingly difficult in the presence of more sophisticated and developed financial markets and high domestic interest rates, which reduce their effectiveness and opportunity cost of circumvention (Ariyoshi et al. 2000).

7.7 An Assessment of the Most Recent Capital Control Measures

This section assesses more recent set of capital controls. In particular, it focuses on the questions: How do they differ? What, if anything, is new? And do they represent a significant, structural shift in the attitude towards free capital accounts?

First, it is important to note that most recent controls strongly reflect DECs' changing nature of financial integration. In addition to traditional controls, such as on the international operations of banks, they have been imposed on an increasingly varied and complex set of instruments and actors. As to the former, recent restrictions on derivative markets are particularly noteworthy. For example, both Brazil and South Korea imposed comprehensive restrictions on the derivatives position of foreign (and domestic) financial investors. As seen above, in Brazil it was only when access to the derivatives market became restrictive that the pressures on the exchange rate eased. This is so for two reasons. First, given less liquid underlying asset markets, in Brazil the derivatives market has become the main locus of trading and price determination, in particular for the exchange rate. Second, given the increased foreign exposure to domestic currency assets, the derivatives market has become essential to hedge (at least partly) the resulting exchange rate exposure. The higher cost of oper-

ating on the derivatives market also reduces the attractiveness of these domestic currency assets. This rising importance of the derivatives market, however, also shows the difficulties increasingly complex domestic financial markets pose for the regulation of international capital flows. In most countries, derivatives are traded over-the-counter (OTC) in bilateral transactions, which are more difficult to capture if not comprehensively recorded and supervised. This confirms the need for a significant degree of market monitoring and fine-tuning to make capital controls effective (Fritz and Prates 2013; Grabel 2012).

With regard to the new actors, the IMF's accompanying notes to the Annual Reports on Exchange Arrangement and Exchange Restrictions (AREAER) show that, in particular, middle-income countries have started to tighten their restrictions on foreign institutional investors (IMF 2007). As discussed above, given their large balance sheets any reallocation in the portfolios of these investors can have substantial repercussions on countries' domestic asset markets. Moreover, recent evidence has shown that although boasting a longer trading horizon the positions of these investors have not acted stabilizing in the case of increased international risk aversion.

Second, in the context of floating exchange rate regimes, capital controls have become an important instrument to manage the exchange rate. As mentioned above, in floating exchange rate regimes the exchange rate becomes a crucial element of returns, frequently dwarfing the gains derived from the interest rate differential. In thin financial markets, this can lead to destabilizing feedback dynamics as speculative capital flows create self-fulfilling feedback and bubble dynamics. This makes the management of destabilizing exchange rate expectations a crucial element in foreign exchange interventions. Indeed, in a recent report the BIS has shown that interrupting the destabilizing feedback loop between capital flows and the exchange rate has become one of the main reasons for central banks to intervene in the foreign exchange market (BIS 2013). However, the above discussion has also shown the inherent limits, if not the counterproductive nature, of sterilized foreign exchange interventions, making capital controls effectively the only available tool to reduce exchange rate volatility and/or avoid large exchange rate swings.

Finally, recent literature has pointed to the particular importance of focusing on the liability side of (international) balance sheets (Gopinath 2011; He and McCauley 2013; Shin 2013). The Asian experience had shown the risk of currency mismatches in the balance sheets of domestic (financial institutions). Ffrench-Davis and Griffith-Jones (2011) suggest specific regulations to controls these currency mismatches, ideally strict prohibitions to avoid circumvention. However, the discussion in Sect. 7.5 has shown that even if domestic agents manage to issue domestic currency debt, if this debt is held by foreign investors, funded in foreign currencies on international financial markets, the external vulnerability and the risk of large and sudden exchange rate movements remains as the currency mismatch is transferred to the foreign investor. These new forms of external vulnerability require strict regulations of the funding operations of foreign investors, both with regards to their maturity (long-term vs short-term), nature (deposits vs wholesale funding), and currency. This could include the imposition of local funding ratios, which requires foreign (and obviously domestic) actors to source funding from local asset markets when investing onshore. This might not only reduce financial fragility but could also aid with lowering domestic interest rates.

On a more general level, although capital controls seem to have been more widely accepted, very often these controls have been framed as, or have assumed the form of, macroprudential regulations rather than actual capital account regulations. For example, the IMF AREAR (2014) study shows that over the reporting period prudential measures were more than double those of capital controls. Moreover, while capital controls were overwhelmingly easing, prudential measures mostly had the effect of tightening the regulatory framework.

On the one hand, this 'rebranding' of capital controls (Grabel 2015) reflects the altered reality of financial markets in many DECs. As discussed in the previous sections, these markets have become more complex and interconnected, both internationally and domestically. This makes macroprudential regulations an important complement to reduce the emergence and spread of financial instability. Moreover, the rise of large, internationally active financial and mixed business groups has increased the linkages between prudential considerations and international capital flows. Large, global banks are a major channel for international capital

flows and transmit external or sector specific shocks to the wider financial system (exacerbated by the fact that these vulnerabilities are often unidentifiable for domestic regulators) (IMF 2007).

On the other hand, there has been a tendency both: (a) to mask measures, which were aimed at restricting international capital movements as macroprudential regulations; and (b) to resort to market-based, macroprudential measures to deal with the negative impact of capital flows. For example, Gallagher (2015) argues that both Brazil and South Korea reframed the use of capital controls as macroprudential to gain internal and external support for their policy objectives. He shows that when South Korea first introduced its first measures in 2009 they were referred to as capital controls. However, they were quickly reframed into the macroprudential terminology surrounding the G-20, Basel and other discussions ongoing at the time.

These marketing tactics aside, it is true that large parts of recent capital controls were temporary, market-based measures aimed at dealing with the worst 'systemic' market failures of free capital mobility. In line with the aim of macroprudential regulations and the new welfare economics of capital controls, they were largely aimed at 'correcting' the worst market failures to allow the continued smooth working of financial markets. They were aimed at creating the least distortions and were implemented in a temporary, predictable, and transparent manner to accommodate and work with financial markets. Although controls were imposed it was clear that these were temporary 'crisis' measures that should react countercyclically to capital flows. Moreover, regulations have continued to shift from direct administrative controls on certain transactions to either qualification requirements or risk-based limits for individuals or institutions (IMF 2007). The IMF shows that 40 percent of recent restrictions were in the form of market-based reserve requirements (IMF 2013, 2014). In a similar vein, although several countries implemented outflow controls, Dierckx (2011) and Gosh and Qureshi (2016) argue that most measures are still centred around inflow controls whereas outflow controls remain largely frowned upon and considered illegitimate.[20]

[20] Soederberg (2004) and Dierckx (2011) argue that outflow controls threaten the imperative of free capital mobility much more than inflow controls.

Thus, although capital controls were implemented, they were 'domesticated' (Grabel 2015) to create the least distortions to cross-border capital flows. They were aimed at guaranteeing the continued 'smooth' working of international financial markets, without fundamentally questioning them. Essentially, the belief in the benefits of free capital accounts remained intact. More than that, one could argue that by trying to reduce the excess risks created by cross-border capital flows, these controls were aimed at maintaining the general support for free capital account convertibility. As the IMF (2011b) notes: "… non-discriminatory application of measures to resident and non-resident investors and the absence of restrictions on mobility of flows generally provide reassurance to markets that countries remain receptive to inflows" (p. 34). Temporary, non-discriminatory, market-based restrictions were chosen to be the minor 'evil', compared with the risk of a fundamental U-turn on open capital accounts as a result of the disruptions caused by international capital flows. In this vein, one could argue in line with Dierckx (2011) and Soederberg (2004) that ultimately capital controls were "only to be used as a means to reach the larger end, namely the proper (neoliberal) management of financial liberalization" (Soederberg 2004, p. 1).

This conclusion is also consistent with evidence that the financial sector, or at least some elements of it, are, in principle, not opposed to restrictions on international capital movements. For example, Forbes et al. (2012) show, based on exploratory interviews with investors, that the majority of them viewed capital controls as a 'cost of doing business' and would adjust their assessment of returns in the country by incorporating the additional cost. Some of them even considered them positively if they addressed potential vulnerabilities, e.g. due to a rapid expansion of credit related to capital inflows. This result is also echoed in Kaltenbrunner (2011) who shows that asset managers operating for insurance and pension funds considered capital controls positively if they reduced the large swings in capital flows and corresponding selling pressures.

Thus, in a nutshell, recent controls remain short-term macromanagement tools rather than the long-term development instrument as envisaged by heterodox economists. They are aimed at dealing with the worst excess of international capital movements, rather than fundamentally allowing DECs to conduct independent development policy.

DECs are still required to maintain good fundamentals (as judged by international financial markets) rather than gaining the freedom to 'distort' markets to the benefit of domestic industrialization and structural change. [21] Development economists, however, have shown that rather than getting prices right, development needs to get prices deliberately wrong to induce domestic structural change (Amsden 1989). This, will not be possible as long as DECs are subject to the disciplining power of international financial markets.

Moreover, heterodox scholars have shown the inherent fragility and instability of cross-border capital flows and DECs' structural subordination with regards to them. In this view, financial integration will always create instabilities through currency mismatches, funding vulnerabilities, etc. Moreover, DECs will remain subject to a high degree of external vulnerability and monetary subordination as long as their currencies remain on the lower level of the international currency hierarchy. For example, in a different paper (Kaltenbrunner 2015b), I argue that DECs' role as asymmetric funding currencies, that is recipients of (short-term) foreign capital funded in developed currencies (primarily the US$), makes them inherently vulnerable to large and sudden capital outflows when international funding conditions change. These large exchange rate changes and external vulnerability, in turn, continue to undermine their ability to become stable international units of account and funding currency themselves, cementing their subordinated position in the international currency hierarchy.

In this view, then, capital controls need to be permanent, comprehensive, and institutionalised to grant space for development policy and allow DECs to progress in the international currency hierarchy. As discussed in Sect. 7.6, it is permanent and comprehensive capital controls that have been effective through avoiding circumvention, increasing enforcement capacity, and control, and allowing for institutional learning. Moreover, the empirical evidence has shown the difficulty of imposing counter-cyclical, ad hoc measures in the face of slow legal changes

[21] These more fundamental points aside, it is important to note that macroprudential regulations can only partly operate as a substitute for capital controls; mainly when flows are channelled through banks. They remain powerless in the case of the direct exposure of foreign investors to domestic asset markets.

and positive expectations during the boom (Gallagher 2015). Fernández et al. (2015a), for example, highlight that capital controls have been remarkably a-cyclical.[22] Booms and busts in aggregate activity are associated with virtually no movements in capital controls. This shows that capital controls need to be an institutionalized, permanent part of the macroeconomic toolkit to be able to react quickly and forcefully to international conditions. Finally, given the increased complexity of international financial markets, price-based measures need to be complemented with quantitative restrictions and sometimes even outright prohibitions to avoid circumvention and ensure effectiveness.

7.8 Summary and Conclusions, and Looking Ahead

This chapter has presented an overview of capital controls in DECs. After defining and differentiating them from macroprudential regulations, showing their economic rationale, and historical evolution, it presented a discussion and assessment of recent capital control measures implemented in the wake of the global financial crisis of 2008. Rather than focusing on the attitude of the international community (in particular, the IMF) towards capital controls, it concentrated on the actual nature of these controls. It discussed how these measures differed from previous episodes and whether they represented a structural shift in the role of capital account liberalization in DECs. It remained rather sceptical with regards to such a structural shift and highlighted the market-based, marginal nature of recent controls. Arguably, rather than fundamentally questioning the benefits of capital account liberalization, these controls are aimed at 'managing' financial integration with the aim of maintaining a general positive attitude towards cross-border capital flows.

In line with more critical heterodox scholars it highlighted the inherent fragility of international financial markets and the structurally sub-

[22] This result is also echoed by Eichengreen and Rose (2014), who show the permanent nature of controls and argue that any new policy initiative mandating frequent shifts in controls will be based on theory rather than data-driven experience.

ordinated position DECs assume in them. This view, however, calls for permanent, comprehensive, institutionalized, and sometimes blunt, administrative capital account regulations to allow countries to develop their domestic economies, financial systems and foster national savings. Indeed, new vulnerabilities are already emerging. For example, non-financial corporations have incurred substantial amounts of dollar-denominated debt, frequently issued on markets rather than obtained from banks. Moreover, many of these operations have been conducted offshore in international financial centres. At the same time, global banks have changed their business models, partly retreating from DECs, partly operating increasingly through local subsidiaries. More general, domestic asset markets have become more complex and sophisticated with foreign nationals, increasingly operating onshore as local residents. Future research is needed to assess the vulnerabilities related to these changing financial structures. In any case, these changes in financial behaviour will require new, innovative and far-reaching regulations and controls to reduce financial vulnerability and support DECs' sustainable development path.

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8

Financial Regulation and the Current Account

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Abstract We study the effect of financial liberalization on current account adjustment. The intertemporal model of the current account predicts that smaller liquidity constraints (our proxy for financial liberalization) increase the size and persistence of the current account response to a domestic net output shock. This prediction is tested in a sample of 79 countries with an interacted Bayesian panel VAR model, which allows for the impulse responses to vary with the degree of financial liberalization, as well as for cross-sectional dependence and dynamic heterogeneity, two important econometric issues that previous interacted panel VAR work has ignored. Our results suggest that the reaction of the current account balance to a net output shock is approximately 80 percent larger, and more persistent, in the average financially liberalized country than in the average financially repressed country. This finding is robust with allowing

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the VAR coefficients to vary with other determinants of current account adjustment, such as the degree of capital account openness, trade openness, financial development, and the exchange rate regime.

Keywords Cross-sectional dependence • Current account adjustment • Dynamic heterogeneity • Financial repression • Interacted panel VAR

JEL Classification F32 • F41 • G28

8.1 Introduction[1]

An assertion among many academic and applied economists is that flexible exchange rate regimes facilitate current account adjustment. Indeed, this view is so widespread that policy recommendations aimed at reducing global current account imbalances typically focus on reform of exchange rate regimes in emerging market economies. But recent empirical evidence casts doubt on this idea (Chinn and Wei 2013). In this chapter we explore the role of domestic financial repression/liberalization as an alternative determinant of current account adjustment. Previous work focused on the relationship between domestic financial liberalization and savings decisions in the closed economy (see Bayoumi 1993b; Bayoumi and Koujianou 1989; Japelli and Pagano 1994; Bandiera et al. 2000, among others). But the impact of financial liberalization on the relationship between domestic shocks and the current account is not well understood. This chapter aims to fill that gap. We first examine the effect of financial repression, modeled in the form of liquidity constraints, in the standard intertemporal model of the current account. This theory suggests that the size impact of log-level/difference net output shocks on, as well as the persistence response of, the current account varies with the degree of financial repression. These predictions are tested with a panel VAR model, where the coefficients are allowed to vary with the degree of financial repression, capital account openness, the exchange rate regime,

[1] The views expressed in this chapter are those of the authors and do not represent the views of Barclays, the IMF, its Executive Board, or IMF management.

trade openness, and financial development. To provide a credible test of our proposed hypothesis, we introduce a Bayesian approach to estimate this type of interacted panel VAR model, which allows for both dynamic heterogeneity (Pesaran and Smith 1995) and cross-sectional dependence (Pesaran 2006), two important econometric issues that most previous applied work in development and international economics has not addressed.

The extent to which financial repression/liberalization amplifies or dampens the impact of domestic shocks on the current account is an important issue for both academic economists and policymakers. For instance, Borio and Disyatat (2011) claim that the international monetary and financial system suffers from excessive 'elasticity' (the authors trace this idea back to as early as Jevons 1875), defined as "the degree to which extent monetary and financial regimes constrain the credit creation process, and external funding more generally". They hypothesize that an increase in the elasticity of the financial system over time, as a result of financial liberalization for instance, led to greater domestic and external imbalances. Indeed, the data suggest that the increase in the absolute size of current account imbalances (Fig. 8.1) and their persistence (Fig. 8.2) emerged against the backdrop of financial liberalization in both OECD and emerging market countries (Fig. 8.3; we define persistence as the AR(1) coefficient from an autoregressive panel data model, estimated with country fixed effects, of the current account to GDP ratio), providing informal support for the 'excess elasticity' hypothesis. To our knowledge, however, no previous work has rigorously tested if, and to what extent, the size of the current account response depends upon the degree of financial repression/liberalization. In this chapter, we take a step towards filling this gap. In particular, we provide the first empirical evidence that, for a given set of net output shocks, the current account response is larger and more persistent in a country with a low, than in one with a high, degree of financial repression.

In the first part of this chapter, we derive robust identification restrictions and theoretical predictions from the intertemporal model of the current account (Sachs 1981). Recent work has shown that this approach can explain current account movements well, as long as either external habit formation (Bussiere et al. 2006), internal habit formation (Gruber 2004)

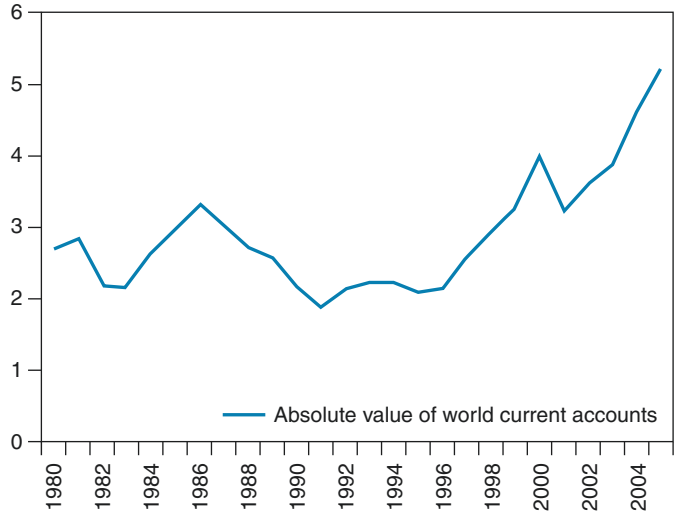

Fig. 8.1 Size of current account imbalances (in percent of world GDP). *Source*: IMF WEO

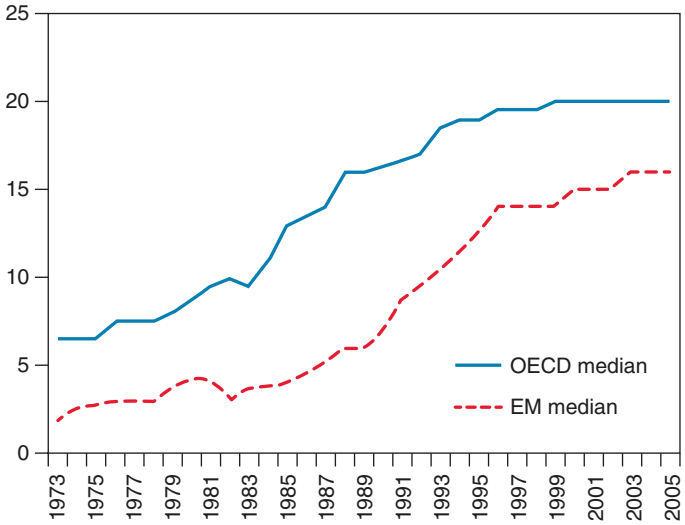

Fig. 8.2 Financial deregulation index. *Source*: Abiad et al. (2010)

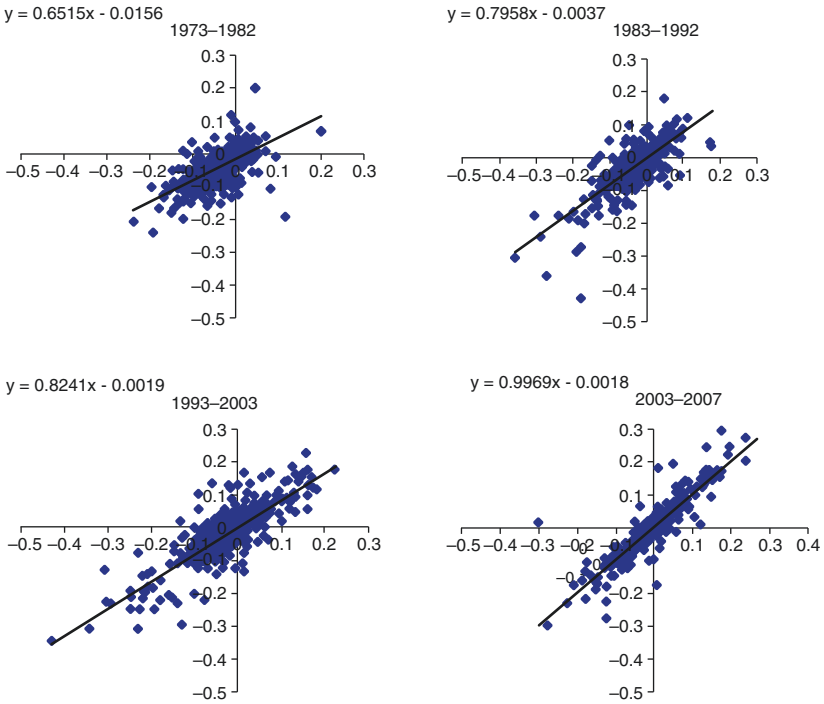

Fig. 8.3 Current account/GDP persistence over time. *Source*: IMF WEO and staff calculations

or a stochastic world real interest rate (Bergin and Sheffrin 2000) is introduced to match the persistence of the current account typically observed in the data. We show that our identification restrictions are robust to any of these assumptions. Following previous theoretical and empirical work on long-run economic growth, savings, and consumption, we also introduce a liquidity constraint into this model and interpret it as a reflection of the degree of financial repression. This simple theory predicts that a given net output shock will have a larger and more persistent effect on the current account balance if agents are less liquidity constrained (the economy is less financially repressed). The underlying intuition is simple: the current account reflects agents' savings decisions in response to net output shocks. In a repressed (liberalized) financial system, few (many) agents have access to borrowing and saving and the current account will therefore show a smaller (greater) reaction to domestic shocks.

In the second part of the chapter, we take our theory to the data. The theoretical model implies a VAR data-generating process that consists of real per capita net output growth and the current account to net output ratio. These theoretical VAR coefficients, that is the effect of a net output shock on the current account balance, depend on the degree of liquidity constraints/financial repression. We therefore allow the structural VAR coefficients of our empirical model to vary with the degree of financial repression and capital account openness, an independent determinant of liquidity constraints (Lewis 1997). To avoid omitted variable bias, we also introduce trade openness, the exchange rate regime and financial development as additional determinants of the VAR coefficients. Previous work on annual data estimates, such as interacted panel VAR models (see, for instance, Broda 2004; Raddatz 2007; or Towbin and Weber 2013) by pooling the data. If this assumption is violated, the estimated coefficients will suffer from dynamic heterogeneity bias. Given the predictions on the persistence response of the current account, our empirical model needs to address this problem to provide a credible test of the theory. A separate issue is the maintained assumption of cross-sectional independence in previous work, meaning that shocks should not spill over across countries for the inference to be valid (Pesaran 2006). Since our aim is to identify shocks of domestic origin, our empirical model needs also to account for this second potential source of econometric bias. We propose a Bayesian approach that addresses both of these issues and use this novel method to estimate our model on an unbalanced panel of annual data across 79 countries over the period 1973–2005. We use the de jure financial liberalization indices provided in Abiad et al. (2010) to proxy for financial liberalization/repression. Our underlying theory also provides robust identification restrictions which naturally translate into sign restrictions of the type first introduced in Canova and De Nicolo (2002), Faust and Rogers (2003) and Uhlig (2005). We use these restrictions to identify a log-level and log-difference net output shock and compare the associated current account to net output impulse response under regimes of low and high financial repression. Our results confirm that the impact of either a log-level or log-difference net output shock on the current account differs across low- and high-repression regimes in a statistically significant way. The response of the current account is approximately 80 percent larger, as well as more persistent, in the average financially liberalized country than

in the average financially repressed country. This implies that the degree of financial repression/liberalization is an important determinant of current account adjustment. To our knowledge, this insight is not part of the current monetary and financial reform debate, but it could have potentially important implications for the adjustment of global imbalances.

This chapter contributes to the existing literature in a number of ways. We provide the first empirical investigation of the interaction between financial repression and the current account, expanding upon existing empirical work that examines the relationship between financial liberalization and savings decisions in the closed economy (see Bayoumi 1993b; Bayoumi and Koujianou 1989; Jappelli and Pagano 1994; Bandiera et al. 2000, among others). Second, we work with a broad sample of countries for the standards of previous papers that study the effect of domestic financial liberalization on savings decisions, being the first to apply the sign restriction methodology to test the predictions of this type of model. Finally, we propose a new econometric method to estimate interacted panel VAR models that addresses two important sources of econometric bias which previous empirical work in development economics has ignored. From a policy perspective, this chapter highlights the interconnection between two hotly debated issues following the global financial crisis of 2008: global imbalances and financial regulation. These issues are generally treated separately in policy circles but this chapter shows that changes in the regulatory landscape may affect the nature of global imbalances going forwards.

The rest of this chapter proceeds as follows. Section 8.2 lays out the theoretical model and derives theoretically robust identification restrictions and predictions. Section 8.3 discusses the empirical specification and the data used. Section 8.4 presents the results and Sect. 8.5 summarises and concludes, highlighting the policy implications of the chapter.

8.2 Theoretical Framework

This section presents the theoretical model that allows us to derive the relevant hypothesis on the relationship between the current account and financial liberalization.

Our aim is to embed financial repression in a model of the current account that can explain the data well, yet is simple enough to derive intuitive theoretical predictions. Recent work by Bussiere et al. (2006), Gruber (2004), and Kano (2009) has shown that, augmented with either external/internal habits in consumption or a persistent world real interest rate, the intertemporal model of the current account (ICA), first presented in Sachs (1981), can give a good explanation of actual current account movements. Due to its simplicity and good empirical fit, we take this model as our basic building block. Conceptually, financial repression can affect macroeconomic variables in at least two ways. First, repression/liberalization can affect the efficiency of transforming savings into productive investment (Goldsmith 1969) by either promoting or hindering competition in the banking system. Second, the volume of savings flowing into investment can either increase (Mckinnon 1973; Shaw 1973) or decrease (Devereux and Smith 1994; Jappelli and Pagano 1994) following liberalization. The former is likely to affect the price, while the latter the quantity, of capital available for investment. Since current account balances reflect quantities rather than prices, we focus on the second channel. While theoretically ambiguous, empirical evidence supports the proposition that financial repression decreases savings through the liquidity constraints channel. Diaz-Alejandro (1985) points out that in developing countries, the volume of savings tends to fall following financial liberalization. Bayoumi (1993a, b) and Sarno and Taylor (1998) find that financial liberalization in the UK in the 1980s decreased liquidity constraints, leading to a decline in aggregate savings. Bayoumi and Koujianou (1989) and Jappelli and Pagano (1994) confirm this pattern across a range of industrialized countries. Bandiera et al. (2000) also find empirical support for the idea that financial repression affects savings via the liquidity-constraints channel in eight emerging market economies. Finally, using data for 72 countries, Lewis (1997) finds that consumers in countries with government restrictions on international transactions tend to act as if they are liquidity constrained. Note that in contrast to her work, we focus on government restrictions on domestic, rather than international, financial transactions. This breadth of evidence justifies our approach of introducing financial repression via liquidity constraints in the ICA model.

Bergin and Sheffrin (2000) and Ghosh (1995), among others, find no empirical support for the simple intertemporal current account model in most G7 countries. The literature has proposed three different modifications of the basic model to improve its empirical performance. Gruber (2004) introduced internal habit formation (where utility is a function of past individual consumption), Bussiere et al. (2006) used external habit formation (where utility is a function of past average consumption), and Nason and Rogers (2006) argued that a time-varying stochastic world interest rate would deliver a more realistic model. Recently, Kano (2009) has shown that the internal habits and time-varying world real interest rate approaches provide observationally equivalent predictions. We therefore add both external and internal habits and also add a liquidity constraint to the standard ICA model in order to model financial repression. We then show that our identification restrictions are robust to any possible parameterization of our model.

We consider a small open, endowment economy populated by a large number of households who maximize utility subject to a budget constraint. Output, investment, government expenditure, and lump-sum taxes are exogenous. The exogeneity assumption is a convenient simplification that is unlikely to hold empirically. However, since our main theoretical predictions follow directly from the Euler equation, they would most likely also hold in more complex DSGE models where all macroeconomic variables are endogenous. Unlike in those models, however, the fact that we can obtain an analytical solution, and that we do not need to resort to numerical methods, allows us to easily and transparently demonstrate that our predictions and, more importantly, identification restrictions are robust to all admissible parameter values. There are two types of households in the economy. One type of households is liquidity constrained in the sense that they do not have access to any savings technology. We will refer to them as non-Ricardian households. These households consume their exogenous net income (output) each period:

$$C_t^{NR} = NO_t$$

where $NO_t = Y_t - I_t - G_t$ is net output, Y_t is output, I_t is investment and G_t is government spending, all expressed as per capita. The second type

of household has access to incomplete international financial markets in which only non-contingent riskless bonds are traded. These households are characterized by their optimal behavior with respect to the intertemporal allocation of consumption. We will refer to this group of households as Ricardian throughout. We assume that non-Ricardian households make up a fraction of $\gamma \varepsilon [0,1]$ of the population with Ricardian households as the remainder. Hence, aggregate consumption is defined as $C_t = \gamma C_t^{NR} + (1-\gamma) C_t^R$.

The representative Ricardian household solves the following utility maximization problem:

$$U_t = E_{0t=0}^{\infty} \beta^t U\left(C_t^R - hC_{t-1}\right) \tag{8.1}$$

$$\text{s.t.} B_{t+1} = (1+r_t) B_t + Y_t - I_t - T_t - C_t^R \tag{8.2}$$

$$\underset{i\to\infty}{Lim}\, R_{t,i} E_t B_{i+1} \geq 0 \tag{8.3}$$

$$R_{i,t} = \{\ \}1 / \left(\prod_{j=t+1}^{t+i}(1+r_j)\right) \quad \text{if} \quad i \geq 11 \qquad \text{if} \quad i = 0$$

where $\beta \in \{0,1\}$ is the discount factor and C_t^R consumption at time t, and C_{t-1} is past consumption. B_{t+1} is the net stock of international bonds held by the Ricardian agent at the end of time t, which are reimbursed at the world real interest rate r_t. Households choose C_t^R and B_{t+1} to maximize discounted lifetime consumption subject to the budget constraint and a no-Ponzi condition. We assume $0 \leq h < 1$, which implies that Ricardian households may be habit forming with respect to consumption. We explore both the possibility of external and internal habit formation in consumption. As a result, utility is increasing in consumption expenditure that exceeds the depreciated value of last period's average consumption in the economy (in the case of external habits) or the depreciated value of the household's lagged consumption, with h being the rate of depreciation. The utility function takes a log form throughout to facilitate algebraic calculations. The first-order necessary conditions of this optimization problem comprise the budget constraint (8.2), the transversality condition (8.3) and the following Euler equation:

$$U'\left(C_t^R - hC_{t-1}\right) = \beta E_t\left[\left(1+r_{t+1}\right)U'\left(C_{t+1}^R - hC_t\right)\right] \tag{8.4}$$

Iterating the budget constraint and imposing the no-Ponzi condition yields the intertemporal budget constraint of the Ricardian agent:

$$E_t\sum_{i=0}^{\infty}R_{t,i}C_{t+i}^R = \left(1+r_t\right)B_t + E_t\sum_{i=0}^{\infty}R_{t,i}\left(NO_{t+i}\right) \tag{8.5}$$

In order to derive an analytical solution to the present value of the current account, we take linear approximations of both the budget constraint (8.5) and the Euler equation (8.4). Following the approach in Kano (2008), one can show after a fair amount of algebra (see Appendix at the end of the chapter) that

$$\frac{C_t^R}{NO_t}\left[1+\sum_{i=1}^{\infty}E_t\exp\left\{\sum_{j=t+1}^{t+i}\left(\Delta\ln C_j^R - \ln\left(1+r_j\right)\right)\right\}\right] = \exp\left\{\ln\left(1+r_t\right)\right\}\frac{B_t}{NO_t}$$
$$+\left[1+\sum_{i=1}^{\infty}E_t\exp\left\{\sum_{j=t+1}^{t+i}\left(\Delta\ln NO_j - \ln\left(1+r_j\right)\right)\right\}\right] \tag{8.6}$$

Let c, b^G, b^P, μ and ϑ denote the unconditional means of the consumption to net output ratio, the net foreign private asset to net output ratio, the net foreign public asset to net output ratio, the log of the gross world real interest rate and the growth rate of net output and consumption, respectively. Let us define $X_t = X_t - \bar{X}$, where $\bar{X}$ is the steady-state value of variable X. Taking a first-order Taylor expansion of (8.6) around the steady state yields the following expression:

$$\frac{C_t^R}{NO_t} = \frac{1-\kappa}{e^{-\mu}}\left(+\frac{B_t}{NO_t}\right) + \sum_{i=1}^{\infty}\kappa^i E_t\left\{\Delta\ln NO_{t+i} - \ln\left(1+r_{t+i}\right)\right\}$$
$$-c\sum_{i=1}^{\infty}\kappa^i E_t\left\{\Delta\ln C^R{}_{t+i} - \ln\left(1+r_{t+i}\right)\right\} + \frac{1-\kappa}{e^{-\mu}}(b)\ln\left(1+r_t\right) \tag{8.7}$$

where $\kappa = \exp(\vartheta - \mu)$. In words, this is the linearized budget constraint. At this point further assumptions have to be made to solve the model. The literature has proposed three different simplifications to solve the model. The first option is to assume that the world real interest rate is constant and that Ricardian consumers display external habit formation (i.e., the argument of the utility function is $C_t^R - hC_{t-1}$ where C denotes average consumption in the economy). The second option is to assume a constant world real interest rate and internal habit formation by Ricardian consumers (i.e., the argument of the utility function is $C_t^R - hC_{t-1}^R$). Finally, one can assume a stochastic world real interest rate and the absence of habit formation ($h = 0$ in our model). Kano (2009) shows that these last two frictions imply observationally equivalent data-generating processes. Although it is difficult to know in practice which model is underlying the data-generating process, it can be shown that our identification assumptions are robust to any of these specific modeling choices. This exercise, together with the detailed derivation of current account reaction functions, is relegated to the Appendix. Our exposition here focuses on the case of a constant world real interest rate and external habit formation. Under these assumptions the current account reaction function is described by

$$ca_t = (1-\gamma)hca_{t-1} - (1-h\kappa)(1-\gamma)\sum_{i=0}^{\infty}\kappa^i E_t\{\Delta \ln NO_{t+i}\}$$
$$+(1-\gamma)\Delta \ln NO_t - h\kappa(1-\gamma)^2\sum_{i=0}^{\infty}\kappa^i (E_t - E_{t-1})\{\Delta \ln NO_{t+i}\} + f_t \quad (8.8)$$

where f_t is an expectational error, defined as $f_t = h(1-\gamma)^2 c\sum_{i=1}^{\infty}\kappa^i (E_t - E_{t-1})\{\Delta \ln C^R{}_{t+i-1}\}$ and $ca_t = \frac{CA_t}{NO_t}$. This theory suggests that in the absence of liquidity constraints, the current account under external habit formation is a function of the lagged current account and a weighted average of current and future net output changes. In this case the model becomes virtually identical to Gruber (2004). As habits become stronger, the importance of both the lagged current account to net

output ratio increases, the first term in (8.8), and the weight of expected future net output growth (second term) increases. Liquidity constraints play two roles in the current account reaction function (Eq. 8.8). First, as a larger fraction of households is liquidity constrained, the importance of net output shocks diminishes since fewer households are able to smooth such shocks by borrowing and lending internationally. With external habits, the consumption decisions of Ricardian agents depend on the past average consumption in the economy. Given that past average consumption is also affected by the presence of liquidity constraints, but Ricardian agents do not internalize this, the coefficient on the lagged current account term becomes a function of both habits and the fraction of liquidity-constrained consumers. With external habits, therefore, the speed of current account adjustment also becomes a function of the liquidity constraint. In the Appendix we show that the predictions obtained from a model with internal habits are identical with respect to the size effect, but the lagged current account term is not a function of liquidity constraints anymore since only individual, as opposed to average, past consumption is relevant to Ricardian consumers' consumption decision in that framework.

How Does Financial Repression/Liberalization Affect the Response of the Current Account to Output Shocks?

In this subsection we derive robust identification restrictions and examine how the current account reacts to net output shocks at different levels of financial repression (the liquidity constraint) in our theoretical model. In order to understand how the current account reacts to net output shocks at different levels of financial repression/liberalization, we need to make further assumptions on the stochastic process driving net output ($\ln NO_t$). Net output can be subject to shocks in log-differences, $\Delta \ln NO_t = \rho \Delta \ln NO_{t-1} + \varepsilon_t$, or log-levels, $\ln NO_t = \rho \ln NO_{t-1} + \varepsilon_t$. A priori, it is not feasible to know which process is driving the log of net output. We will therefore consider both of them and examine the effect of an unexpected shock to either net output process on the current account individually. At this point, most previous work would solve the model numerically and show

that those theoretical impulse responses, from which the sign identification restrictions are derived, are robust to many different possible parameter values (see Enders et al. 2011, for more details on this approach.). We choose a different route. The advantage of our approach is that we can demonstrate the robustness of our identification restrictions and theoretical predictions analytically.

In the case of external habitual consumption and net output log-difference shocks, one can then show that (see appendix) Eq. (8.8) becomes

$$ca_t = (1-\gamma)hca_{t-1} + \frac{(1-\gamma)\kappa(h-\rho)}{1-\rho\kappa}\rho\Delta \ln NO_{t-1} - \kappa(1-\gamma)\frac{\rho(1-\kappa)+h(\kappa-\gamma)-\rho\kappa h(1-\gamma)}{(1-\kappa)(1-\rho\kappa)}\varepsilon_t + f_t \quad (8.9)$$

It is then easy to see that:

$$\frac{\partial ca_t}{\partial \varepsilon_t} = -(1-\gamma)\kappa\frac{\rho(1-\kappa)+h(\kappa-\gamma)-\rho\kappa h(1-\gamma)}{(1-\kappa)(1-\rho\kappa)} < 0 \frac{\partial ca_t}{\partial \varepsilon_t \partial \gamma} = \frac{\kappa\rho(1-\kappa)+h(\kappa-\gamma)+(h-2\rho\kappa h)(1-\gamma)]}{(1-\kappa)(1-\kappa\rho)} > 0$$

as long as γ, ρ, h, κ and $\in 0, 1)$ and $\kappa \geq \gamma$, which will be satisfied under any plausible parameterization of this model. Since $\kappa = \exp(\vartheta - \mu)$ and $\vartheta - \mu$ is unlikely to be large, Kano (2008) argues that κ should be fairly close to, but smaller than, one. We therefore assume that $\kappa \in 0.9,1)$ Since γ, the fraction of the population that is liquidity constrained, is unlikely to exceed this lower bound in reality, the condition $\kappa \geq \gamma$ will always be satisfied for any plausible parameterization of the model. Given these parameter restrictions, one can clearly see that the impact response of a log-difference net output shock upon impact is negative and that greater liquidity constraints make the impact response of this shock less negative, thus smaller. In other words, financial liberalization, i.e. the removal of liquidity constraints, makes the response of

the current account to a log-difference net output shock larger. Since the coefficient on ca_{t-1} is a function of γ one can also clearly see that the effect of a past shock on the current account today declines with a greater fraction of liquidity-constrained agents. This means that the persistence of the current account is also decreasing in the liquidity constraint. In the case of log-level net output shocks equation (8.8) becomes

$$ca_t = (1-\gamma)hca_{t-1} - \frac{(1-\gamma)\kappa(h-\rho)}{1-\rho\kappa}(1-\rho)\ln NO_{t-1} + (1-\gamma)\frac{(1-\kappa)+h\kappa(1-\rho)(1-\gamma)}{(1-\kappa)}\varepsilon_t + f_t \tag{8.10}$$

It is then easy to show that $\frac{\partial ca_t}{\partial \varepsilon_t} > 0$ and $\frac{\partial ca_t}{\partial \varepsilon_t \partial \gamma} < 0$, meaning that a positive log-level net output shock leads to an increase in the current account to net output ratio. The corresponding identification restrictions and predictions from a model with internal, as opposed to external, habits are almost identical, with the difference that liquidity constraints no longer affect current account persistence. This is because with internal habits, the consumption of decisions of Ricardian agents are a function of their own, rather than the economy average, past consumption. In short, the model predicts that with smaller liquidity constraints (financial liberalization), the response of the current account becomes larger in any case, and more persistent in the presence of external habits, for a given log-level (difference) net output shock. This is the hypothesis that we seek to test empirically in this chapter.

8.3 Empirical Methodology and Data

This section develops an empirical methodology to test the main implications of our model, namely that the reaction of the current account to net output shocks is larger and more persistent in financially more liberalized countries.

General Methodology

In practice, all the variables required to test the model described in previous sections are likely to be endogenous with respect to each other. Furthermore, taken together with the driving process for net output shocks, the data-generating process for the current account implied by equation (8.9) will be a reduced form VAR model with ca_t and $\Delta \ln NO_t$ as the regressors. Finally, the contemporaneous correlation between ca_t and $\Delta \ln NO_t$ is positive (negative) in case of a log-level (difference) shock. If both shocks are equally likely, fitting a reduced-form single-equation model may therefore lead to a false rejection of a relationship between these variables. To test the proposed hypothesis that the reaction of the current account to net output shocks is larger and more persistent in financially more liberalized countries rigorously, it is therefore necessary to formally identify both of the shocks. For all of these reasons, we adopt a panel VAR approach where we explicitly identify net output shocks while addressing endogeneity concerns. An alternative approach would, of course, be the instrumental variable approach, but for annual data Chinn and Prasad (2003) have shown that it is difficult to obtain reliable instruments for the variables driving the current account. We use annual data given that the index of financial repression we use, as well as the corresponding macroeconomic data for many countries, is not available at a quarterly frequency. The panel VAR includes both of the variables that drive the data-generating process for the current account according to our model: the current account to net output ratio and the net output growth rate. The proposed panel VAR model is:

$$\overbrace{\begin{bmatrix} 1 & 0 \\ \alpha_{0,c,t}^{2,1} & 1 \end{bmatrix}}^{A_{0,c,t}} Y_{c,t} = \sum_{k=1}^{L} \overbrace{\begin{bmatrix} \alpha_{0,c,t}^{1,1} & \alpha_{0,c,t}^{1,2} \\ \alpha_{0,c,t}^{2,1} & \alpha_{0,c,t}^{2,2} \end{bmatrix}}^{A_{k,c,t}} Y_{c,t-k} + \overbrace{\begin{bmatrix} d_{1,c} & 0 \\ 0 & d_{2,c} \end{bmatrix}}^{D_c} F_t + U_{c,t} U_{c,t} : N(0,\Sigma) \quad (8.11)$$

where $Y_{c,t}$ is an 2×1 vector consisting of the current account to net output ratio and the per-capita net output growth rate in country c at time t. Since the theory provides predictions for variables expressed in deviations from their steady-state values, we express these two variables in deviations

from their country-specific means (which are our proxies for their steady state values). This removes the country fixed effect for these variables. F_t is an 2×1 vector consisting of unobserved common factors, a separate one for each equation, and D_c is a diagonal matrix. The strategy of introducing unobserved common factors as additional explanatory variables allows us to control for global factors, such as world oil price and interest rate shocks, but also cross-sectional dependence (spillovers across countries). As in previous work on interacted panel VARs, we estimate the impact matrix of the VAR, $A_{0,c,t}$, as oppose to obtaining it from the variance matrix of the shocks post estimation. $A_{k,c,t}$ is the matrix of country-specific autoregressive coefficients. $U_{c,t}$ is an 2×1 vector of residuals, assumed to be uncorrelated across equations and normally distributed with a covariance matrix Σ.

Since we want to understand to which extent the impact of a net output shock is amplified or dampened by economic conditions in a given country, we allow the impact matrix coefficient $\alpha_{0,c,t}^{2,1}$ to vary with the country's economic structure. Similarly, in the case of external habits, our theory predicts that the autoregressive coefficients $\alpha_{k,c,t}^{j,l}$, where j is the row and l the column, also depend on the country's economic structure. In contrast to work that models time variation in the VAR coefficients as a random walk (Cogley and Sargent 2005 and Primiceri 2005), we therefore adopt the approach presented in Towbin and Weber (2013) and allow the coefficients to vary with observable economic structure variables. The time-varying coefficients, $\alpha_{k,c,t}^{j,l}$ in $A_{0,c,t}$ and $A_{k,c,t}$ are therefore given by $\alpha_{k,c,t}^{j,k} = \beta_{k.c,1}^{j,l} + \beta_{k.c,2}^{j,l} * FR_{c,t} + \beta_{k.c,3}^{j,l} * KA_{c,t} + \beta_{k.c,4}^{j,l} * FXR_{c,t} + \beta_{k.c,5}^{j,l} * TR_{c,t}$, where $FR_{c,t}$ is the proposed index of financial liberalization at time t in country c. Previous work by Lewis (1997) has documented that restrictions on international transactions may lead consumers to act as if they are liquidity constrained. Similarly, Towbin (2008) has shown that the trade balance, an important component of the current account, becomes more persistent with greater capital account openness. To avoid omitted variable bias, capital account openness in country c at time t, $KA_{c,t}$, is therefore included as an independent determinant of the VAR coefficients. One would expect that the speed of adjustment of the current account under a fixed and floating exchange rate

regime would differ (Friedman 1953), which is why we also include the exchange rate regime, $FXR_{c,t}$, as a control variable. Finally, an alternative important determinant of external adjustment could be a country's trade openness, $TR_{c,t}$, which we include as an additional variable to minimize chances of omitted variable bias. Substituting the definitions of the time-varying coefficients in equation (8.11) leads to the following interacted panel VAR model:

$$Y_{c,t} = \sum_{w=1}^{W}\sum_{k=1}^{L}\overbrace{\begin{bmatrix}\beta_{k.c,w}^{1,1} & \beta_{k.c,w}^{1,2}\\ \beta_{k.c,w}^{2,1} & \beta_{k.c,w}^{2,2}\end{bmatrix}}^{B_{w,k,c}} Y_{c,t-k}Z_{c,t}^{w} + \sum_{w=2}^{W}\overbrace{\begin{bmatrix}0 & 0\\ \beta_{0.c,w}^{2,1} & 0\end{bmatrix}}^{G_{w,c}} Y_{t,c}Z_{c,t}^{w} + \sum_{w=2}^{W}H_{w}Z_{c,t}^{w} + D_{c}F_{t} + U_{c,t} \tag{8.12}$$

where $Z_{c,t} = [1 \;\; FR_{c,t} \;\; KA_{c,t} \;\; FXR_{c,t} \;\; TR_{c,t}]$ and w is a superscript indicating the number of the given column of $Z_{c,t}$, with W as the total number of variables in $Z_{c,t}$. H_w is a 2×1 vector with the coefficients corresponding to $Z_{c,t}^{w}$. In other words, to avoid omitted variable bias, all of the economic structure variables also enter the model in levels.

In summary, we are allowing the coefficients in both the impact and lagged dependent variable matrix to vary with observable deterministic variables. The advantage of this approach is that we can assess to which extent the impulse responses to a given shock differ with the degree of financial repression (liquidity constraints). Since our theory predicts that the effect of a net output shock on the current account to net output ratio depends on the degree of liquidity constraints, this method is better suited to test our theory than standard time-varying coefficient VARs, which typically do not provide information on the source of time variation.

Empirical Estimation

In this section we describe the estimation of equation (8.12) and how our specific model assumptions help in addressing econometric issues

that previous work has neglected. Interacted panel VAR models can be estimated with OLS (Towbin and Weber 2013). But if the model is complex, due to the presence of an unobserved common factor, for instance, estimation via OLS may not be feasible. For that reason we use Bayesian methods, and in particular the Gibbs sampler, to estimate our model. Gibbs sampling permits us to break down the estimation of this complex model into several stages, which reduces the difficulty of this task drastically. All of the main estimation stages are discussed below.

We allow all of the coefficients that are associated with lagged dependent variables in equation (8.12), $B_{w,k,c}$, to be country-specific. All previous work that estimated interacted panel VAR models on annual data, such as Broda (2004), Raddatz (2007) or Towbin and Weber (2013), estimates $B_{w,k,c}$ by pooling, therefore assuming identical dynamics for all coefficients in the panel, i.e. $B_{w,k,c} = B_{w,k}$. A violation of that assumption will typically lead to an upward, frequently referred to as dynamic heterogeneity, bias in the VAR coefficients (Pesaran and Smith 1995), resulting in a substantial increase in the persistence of the impulse responses. Indeed, the Monte Carlo simulations presented in Canova (2007) show that this bias can be large even for a relatively small degree of dynamic heterogeneity. This would make it difficult to test our hypothesis of interest. Pesaran and Smith (1995) propose the mean group estimator as a solution to this problem (See Sa et al. 2013) for an application of the mean group estimator in interacted panel VAR models in quarterly data.). This approach is implemented by estimating the VAR model country by country and then averaging the country-specific VAR estimates to obtain the panel estimate. But Rebucci (2003) points out that with annual data, where the time series dimension is small, mean group panel VAR estimates may be subject to serious small sample bias. This is lack of precision is probably the most important reason why all previous work that estimated interacted panel VAR models on annual data chooses to pool the coefficients across countries.

In contrast to these previous studies, we do not impose the assumption of pooling on the data. Instead, we only impose the prior of a common mean, but still allow all of the lagged dependent variable coefficients to

be country-specific, as in Jarocinski (2010). In particular, we assume that the following prior for $B_{w,k,c}$:

$$p\left(B_{w,k,c}|B_{w,k},\Lambda_c\right)=N\left(B_{w,k},\Lambda_c\right)$$

where $B_{w,k}$ is the pooled mean across countries with the variance Λ_c determining the tightness of this prior. We follow Jarocinski (2010) and parameterize $\Lambda_c=\lambda L_c$. λ is treated as a hyperparameter and is estimated from the data. In other words, this approach allows us to directly estimate and control for the degree of dynamic heterogeneity bias in the data, which in turn allows to obtain a bias free pooled estimate of $B_{w,k}$. The greater λ the larger the degree to which the country-specific coefficients are allowed to differ from the common mean. If $\lambda\to\infty$, this approach will lead to country-by-country estimates, while $\lambda=0$ implies pooling across all countries. L_c, as explained in Sect. 8.7 is calibrated pre-estimation. The parameterization of Λ_c in this manner has the econometrically convenient property that it is necessary only to estimate one hyperparameter to determine the degree of heterogeneity in the coefficients. But there is, of course, one drawback: the coefficients in $B_{w,k,c}$ may have different magnitudes. In specifying a single parameter that determines the degree of heterogeneity, there is therefore the risk that some coefficients are allowed to differ from the common mean by a small fraction of their own size, while others can differ by orders of magnitude. An analogous procedure for the Litterman (1986) prior, L_c is a matrix of scaling factors used to address this problem. In particular, $L_c\left(k,n\right)=\frac{\sigma_{cn}^2}{\sigma_{ck}^2}$, where c is the country, n the equation and k the number of the variable regardless of lag. σ_{cn}^2 is the estimated variance of the residuals of a univariate autoregression of the endogenous variable in equation n, of the same order as the VAR, and is obtained pre-estimation. σ_{ck}^2 is the corresponding variance for variable k and obtained in an identical manner. To the extent that unexpected movements in variables will reflect the difference in the size of VAR coefficients, scaling by this ratio of variances allows us to address this issue.

The pooled estimate, $B_{w,k}$, is estimated by a weighted average of $B_{w,k,c}$ with the weights as the inverse of Λ_c, meaning that coefficients of countries closer to the pooled mean get a greater weight and vice versa. In contrast to previous work, our approach therefore allows inference of the degree of dynamic heterogeneity, λ, directly from the data and since we allow for dynamic heterogeneity explicitly, the pooled coefficients estimates $B_{w,k}$ will not be subject to dynamic heterogeneity bias.

A separate, but equally important, econometric issue is the potential presence of cross-sectional dependence. An important maintained assumption in applied panel data studies is the independence of individual units in the cross-section. As first noted by Stephan (1934), this is unlikely to hold in economic applications. This issue, commonly referred to as cross-sectional dependence, has been the subject of a rapidly growing academic literature in recent years. To our knowledge, all previous panel VAR studies make the assumption of cross-sectional independence implicitly. This is, however, difficult to know for certain, since none of the previous studies discuss this issue. This problem is likely to be particular severe when estimating panel VARs on macroeconomic data, since shocks are likely to spill over across countries. Indeed, in a similar, but not interacted, panel VAR model, Gilhooly et al. (2012) show that falsely assuming cross-sectional independence can lead to drastically different results. To ensure that our estimates are not subject to potential bias from this source, and only reflect shocks of domestic origin, we follow the suggestion of Bai (2009) who first proposed the idea of addressing cross-sectional dependence in short panels with unobserved common factors, one for each equation.

This is, of course, not the only way of addressing cross-sectional dependence when the number of cross-sectional units is greater than the number of time-series observations in each country. For this case, Pesaran (2006) proposed the common correlated effects estimator. But the corresponding version of the mean group estimator is likely to again suffer from small sample bias in our application. Similarly, estimators other than the one presented in this chapter, which have been specifically designed to address cross-sectional dependence in short dynamic panels, such as the GMM in Sarafidis and Wansbeek (2010) or the maximum likelihood estimator in Bai (2009), do not allow for dynamic heterogeneity. In addi-

tion to cross-sectional dependence, these factors will likely reflect other important exogenous control variables which are common to all of the countries, such as global oil price and financial shocks. We assume that these two factors, contained in the matrix F, are independent with distribution $N(0, I_M)$ at each point in time and that the VAR residuals U_c are uncorrelated across countries, as the unobserved factors will absorb this cross-country correlation. Finally, it is assumed that $E[U_c' F] = 0$, the VAR residuals and the factors are orthogonal. As with any factor model, there are issues of indeterminacy that need to be addressed ahead of estimation. First, there is a question of scale. One can multiply the matrix of factor loadings, D_c, by a constant d for all i, which gives $D_c = dD_c$. We can also divide the factor by d, which yields $F = \frac{F}{d}$. The scale of the model FD_c is thus observationally equivalent to the scale of the model FD_c. In order to address this problem the scale of each factor is set to unity. Even then a choice remains as to the sign of F. To identify the sign of the factors we restrict all of the factor loadings in one particular country to be positive. Finally, to identify multiple factors, additional assumptions may need to be made on the matrix of coefficients D_c.

Thus far, the approach presented here is identical to the one in Gilhooly et al. (2012), who were the first to propose an estimator for Bayesian panel VARs that allow for both dynamic heterogeneity and cross-sectional dependence. But they did not consider interacted panel VARs. The additional complication that arises in this case is that it is necessary to estimate the impact matrix of the VAR to allow the impact coefficients to vary with the economic structure as well. The presence of zeros in $G_{w,c}$, to avoid perfect multicollinearity, creates an asymmetry among the equations, which neither the framework presented in their paper nor the one in Jarocinski (2010) can handle. To address this problem, we exploit the fact that our model is estimated with Gibbs sampling. The advantage of this Bayesian technique is that estimation can be broken down into multiple steps: for example, $B_{w,k,c}$ is estimated conditional on knowing $B_{w,k}$ and λ; λ is estimated conditional on knowing $B_{w,k,c}$ and $B_{w,k}$ and $B_{w,k}$ is estimated conditional on knowing $B_{w,k,c}$. It is therefore possible to estimate each parameter of the model in a separate step. We therefore add one additional step to the Gibbs sampler presented in

Gilhooly et al. (2012) as follows: we assume that $G_{w,c} = G_w$, meaning that we pool the data to estimate these coefficients, since the impact matrix is not subject to dynamic heterogeneity bias. For the second equation only, the vector of coefficients $[\beta_{k.c,1}^{j,l}\ \beta_{k.c,2}^{j,l}\ \beta_{k.c,3}^{j,l}\ \beta_{k.c,3}^{j,l}\ \beta_{k.c,4}^{j,l}\ \beta_{k.c,5}^{j,l}]$ is then drawn from a standard normal distribution, conditional on knowing all of the remaining parameters of the model. The coefficients in H_w are drawn in an analogous way, with the difference that these are drawn for both equations of course.

We estimate this proposed model with Bayesian methods by repeating the Gibbs sampling chain, described in great detail in Sect. 8.7. 400,000 times, with 300,000 iterations as burn-in and retaining every 100th draw, leaving us with 1000 draws for inference. The model is estimated with two lags. Ex-ante lag length selection criteria, such as the Akaike, Hanan-Quinn, and Schwartz-Bayesian criteria, suggest a lag length of one. However, one of the main assumptions of the VAR model is that residuals behave like white noise. Estimated with one lag, the residuals were autocorrelated of order 1, which is obviously inconsistent with white noise behaviour and suggested that in at least one of the equations 8.2 lags would be necessary. Since the bias from omitting a lag is typically worse than that from including an extra lag, we estimate the model with 2 lags.

Inference and Identification of Net Output Shocks

The key question we need to answer in this chapter is the following: whether the current account reaction to net output shocks is larger and more persistent in financial liberalized countries. For this purpose we compare VAR coefficients for the average financially repressed versus average financially liberalized economy. In other words, it is necessary to obtain the implied VAR impact and autoregressive coefficient matrices, evaluated for financially liberalized economy, A_0^{High} and A_k^{High}, and those for a financially repressed one, A_0^{Low} and A_k^{Low}. We use the pooled estimates of $B_{w,k}$ and G_w for this purpose, since we are interested in the effect on the average, as oppose to any particular, country. In our approach the time-varying coefficients, $\alpha_{k,t}^{j,l}$ in $A_{0,t}$ and $A_{k,t}$ are given by $\alpha_{k,t}^{j,k} = \beta_{k,1}^{j,l} + \beta_{k,2}^{j,l} * FR_{c,t} + \beta_{k.3}^{j,l} * KA_{c,t} + \beta_{k,4}^{j,l} * FXR_{c,t} + \beta_{k,5}^{j,l} * TR_{c,t}$. To obtain

A_0^{High} and A_k^{High} one would therefore evaluate $FR_{c,t}$ at a high value of the index, evaluate all of the other economic structure variables, i.e. $KA_{c,t}$, $FXR_{c,t}$ and $TR_{c,t}$, at their medians and then sum to obtain $\alpha_{k,t}^{j,k,High}$. A_0^{Low} and A_k^{Low}, the coefficients implied by a low value of the financial repression index, can be obtained in a similar manner. Given these VAR coefficients, it is then possible to obtain impulse responses of the current account to either a net output log-level or log-difference shock for a financially liberalized and a financially repressed economy. A comparison of the distribution of impulse responses for each of these economies will therefore reveal to which extent there is a statistically significant difference in the transmission mechanism of net output shocks to the current account, as a result of changes in the degree of financial repression. This is how we propose to test our theoretical prediction that net output shocks should have a greater and more persistent effect on the current account in less financially repressed countries.

Previous work by Kano (2008) used zero restrictions derived from the ICA with a stochastic world real interest rate to identify net output shocks in Structural VARs. It is, however, difficult to establish whether the zero restrictions proposed by either of the models presented here are valid in the data. We therefore adopt an identification procedure that does not rely on zero restrictions. As we have shown in Sect. 2.1, a log-level (difference) net output shock increases the log-level of net output and results in a current account surplus (deficit). This provides sign restrictions, which are robust across all of the theoretical models considered in this chapter. We therefore use sign restrictions as pioneered by Canova and De Nicolo (2002), Faust and Rogers (2003) and Uhlig (2005) to identify the shocks of interest. This identification procedure is implemented with the QR decomposition approach (also called a QR factorization) presented in Rubio-Ramirez et al. (2010) to search across the space of all possible structural VAR decompositions. Those that do not produce impulse responses that satisfy the restrictions in Table 8.1 are discarded, while all of the remaining ones are kept for inference.

The avid reader will note that our model is estimated on the log-difference, but that we impose identification restrictions on the log-level, of net output. This is necessary to disentangle the two shocks, as the log-level

Table 8.1 Log-level net output shock and log-difference net output shock

	Log-level net output shock	Log-difference net output shock
LN NO_t	≥0	≥0
$\frac{CA_t}{NO_t}$	≥0	≤0

net output shock only implies a positive sign upon impact in net output log-difference space and we impose restrictions upon impact and 1 year thereafter. We note that imposing sign restrictions upon impact only does not produce substantially different results. In other words, in the case of net output, we are imposing sign restrictions on the cumulative impulse responses of the log-difference of this variable.

Our proposed sign restrictions also emerge robustly from more complex open economy DSGE models. Fournier and Koske (2010) use the two-country New Open Economy Macroeconomics model of Ferrero et al. (2008), albeit without sticky prices, to investigate the effect of temporary and permanent productivity shocks on the current account, through the savings channel. They find that the only scenario in which a temporary (permanent) productivity shock leads to a current account deficit (surplus) is by setting by their intertemporal elasticity of substitution parameter to 10, a high and unrealistic value compared to previous work in the literature. In their survey of this parameter value in calibrated open economy DSGE models, Enders et al. (2011) report that the intertemporal elasticity of substitution is typically set between 0.5 and 1.0. Empirically, Guvenen (2006) and Gruber (2004) estimate the elasticity of substitution to be 1 and 2, respectively. On the other hand, Hall (1988) and Yogo (2004) conclude that it is not statistically different from zero. While the empirical literature had therefore not reached a conclusive answer, an elasticity of 10 is an order of magnitude larger than what is supported by previous empirical and theoretical work. Otherwise, their model predicts a non-negative (non-positive) current account response following a temporary (permanent) productivity shock. Similarly, Enders and Müller (2009) study the impact of permanent technology shocks on net exports (Net exports, or the trade balance, is linked to the current account through the following identify: $CA_t = TB_t + rB_t$.), allowing for

both the savings and investment channel, in a variant of the Backus et al. (1994) international real business cycle model. Under the assumption of incomplete markets, which is strongly supported by their time series evidence, they find that a permanent productivity shock leads to a current account deficit. Finally, Enders et al. (2011) derive theoretically robust sign restrictions from a very general two-country DSGE model. They assume a near-unit root process for their technology shock, meaning that it can be interpreted as permanent, and find that with a low trade price elasticity, a feature that is consistent with the data (See Enders and Müller 2009), a very large fraction of their net exports impulse responses displays a negative reaction to their technology shock. This implies, that even in their very general two-country DSGE model with very wide parameter intervals, the fact that a permanent technology shock has a negative effect on the current account is theoretically robust to most parametrizations. Calibrated for annual data and with a perfect unit-root in the process for the productivity shock, it is probable that all of their net exports impulse responses would react negatively to the permanent productivity shock. Clearly, a temporary (permanent) technology shock would raise the level (growth rate) of output. We therefore argue that the log-level (difference) net output shock identified in our model probably reflects a temporary (permanent) productivity shock in these more complex DSGE models. If this is truly the case, then our proposed identification restrictions are consistent both with the standard intertemporal model of the current account as well as more general open economy DSGE models.

Data

Our empirical strategy requires standard macroeconomic data and a good empirical measure of financial regulation. There are a few data sets that measure financial liberalization across countries (Williamson and Mahar 1998; Kaminsky and Schmukler 2003; Abiad et al. 2010). We rely on the data set by Abiad et al. (2010) for basically two reasons. First, their country and time coverage is very wide (91 countries over the period 1973–2005) and thus appropriate for our panel VAR methodology. Second, their data set has seven graded components with special empha-

sis on domestic financial reform. Previous indices (e.g., Kaminsky and Schmukler 2003) put more weight on the liberalization of capital flows, which is not the central object of study in this chapter. The seven components of the data set are: credit controls, interest rate controls, entry barriers, state ownership in the banking sector, prudential regulation, securities market policy and capital account restrictions. Each component can take the values {0, 1, 2, 3} with higher values meaning less regulation/restrictions. We sum all components, except for capital account restrictions, to come up with the aggregate domestic financial liberalization index we use in our empirical exercise. This index is normalized to 1. Capital account restrictions are accounted for separately and we use the index by Chinn and Ito (2008). Using the capital account openness index provided by Abiad et al. (2010) as an alternative measure of capital account restrictions yields similar results. For the exchange rate regime, we introduce the coarse de facto exchange rate classification by Ilzetzki et al. (2010). Results using the fine classification or the de jure classification from the IMF's AREAER database are similar. Trade openness is defined as the share of the sum of imports and exports in GDP. Financial development is defined as the ratio of private credit to GDP. Both of these variables are taken from the IMF World Economic Outlook database.

Data on the following macroeconomic variables for the period 1973–2005 are necessary to test the implications of the model: the current account balance and a measure of net output. The IMF World Economic Outlook gives us the current account balance in current US dollars. Net output is defined as GDP minus government consumption and investment. We obtain the shares of government consumption and investment in GDP from the World Bank World Development Indicators and we combine them with GDP in current US dollars from the IMF World Economic Outlook to calculate net output. To obtain real net output per capita, we divide this by the US GDP deflator and total population. We remove outliers from the log-difference of per capita net output and the current account to net output ratio by dropping values outside the 98 and 2 percentile of each variable's distribution. We also drop countries with less than four observations. In total, our sample consists of 79 countries (Table 8.2) and 1409 annual observations over 1973–2005.

Table 8.2 Country Sample

Albania	Estonia	Mozambique
Argentina	Ethiopia	Malaysia
Australia	Finland	Netherland
Austria	France	Norway
Belgium	United Kingdom	Nepal
Burkina Faso	Georgia	New Zealand
Bangladesh	Ghana	Pakistan
Bulgaria	Greece	Peru
Belarus	Guatemala	Philippines
Bolivia	Hungary	Poland
Brazil	Indonesia	Portugal
Canada	India	Paraguay
Switzerland	Ireland	Romania
Chile	Israel	Russian Federation
China	Italy	Senegal
Cote d'	Jamaica	Singapore
Cameroon	Jordan	El Salvador
Colombia	Japan	Sweden
Costa Rica	Kazakhstan	Thailand
Czech Republic	Kenya	Tunisia
Germany	Kyrgyz Rep.	Turkey
Denmark	Korea	Tanzania
Dominican Republic	Sri Lanka	Uganda
Algeria	Lithuania	Ukraine
Ecuador	Latvia	Uruguay
Egypt	Morocco	Venezuela, RB
Spain	Madagascar	Vietnam
	Mexico	South Africa

8.4 Empirical Results

In this section we first show that our concerns about inference as a result of dynamic heterogeneity bias and the presence of cross-sectional dependence have been justified. We then present the results from our panel VAR model and explore a number of robustness checks. First we investigate to which extent our concerns about dynamic heterogeneity bias and cross-sectional dependence were justified. Figure 8.4 shows the draws of λ, the estimated degree of dynamic heterogeneity. The mean of λ is .0039 which is similar to the corresponding statistic those reported in Jarocinski (2010). In his Bayesian panel VAR application the assumption of pool-

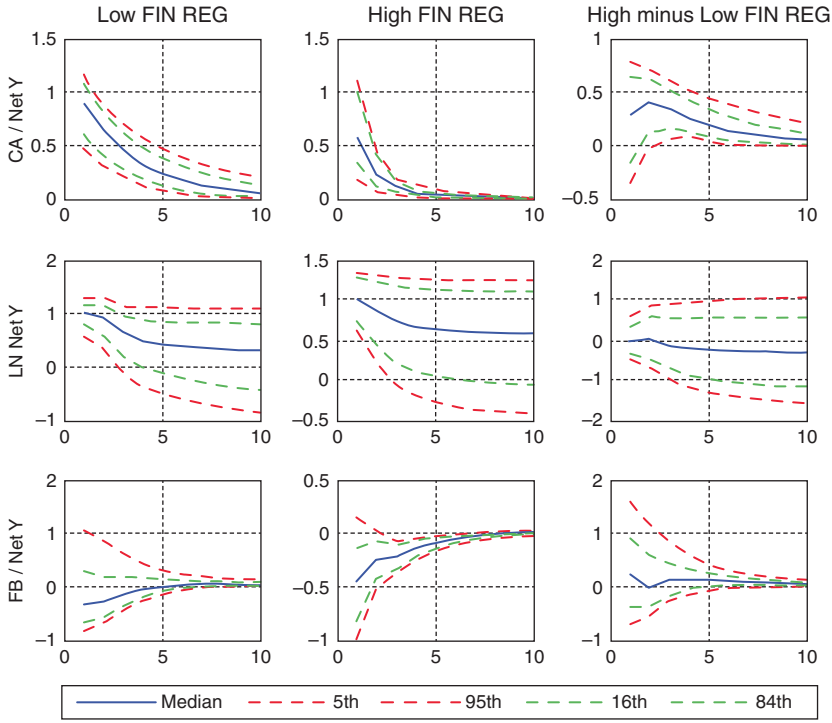

Fig. 8.4 Impulse response functions to log-level net output shock—financial regulation

ing led to a substantial increase in the persistence of impulse responses. This suggests that our concern about dynamic heterogeneity bias and its potential impact on our inference in this case has been warranted.

Evaluating the $FR_{c,t}$ term at high and low values of financial liberalization permits us to obtain average VAR coefficients under regimes of high and low financial liberalization. The remaining interaction terms, $KA_{c,t}$, $FXR_{c,t}$ and $TR_{c,t}$ are evaluated at the median values of their distribution. We can then obtain impulse responses under both regimes and compare them to assess whether the reaction of the current account varies with financial liberalization as predicted by the theory. The impact impulse response for the log-level of net output was normalized to 1 in order to ensure that we are comparing current account responses to log

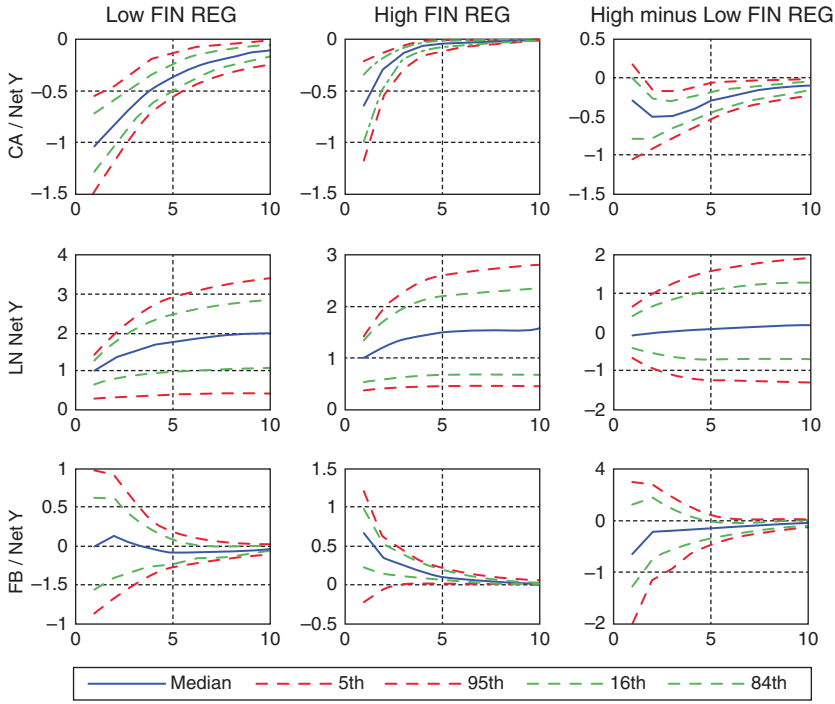

Fig. 8.5 Impulse response functions to log-difference net output shock—financial regulation

level net output shocks of identical size across both regimes. This allows us to assess whether there is a statistically significant difference between the impulse responses due to financial liberalization, rather than to the size of net output shocks. Figure 8.5 shows impulse responses to a log-level net output shock with the financial liberalization index evaluated at both the 100 percent percentile ('High Financial Liberalization' column) and 0 percent percentile ('Low Financial Liberalization' column) of the distribution of this variable. These percentiles correspond to 0.1528 and 1.0, respectively. The third column shows impulse responses obtained from a distribution of the difference in the impulse responses obtained under the high and low financial regulatory regime. The red and green dashed lines indicate the 90 percent and 68 percent

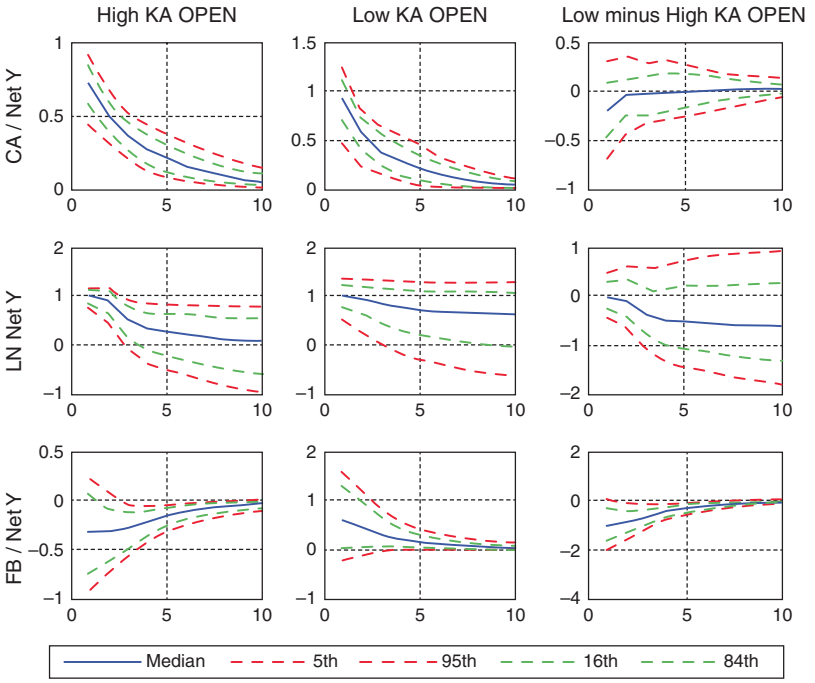

Fig. 8.6 Impulse response functions to log-level net output shock—capital account openness

confidence bands, respectively. Figure 8.6 repeats this exercise but for a log-difference net output shock.

The median impact response of a log-level net output shock on the current account is 0.71 under and 1.29 under high financial liberalization, which represents an 81 percent increase in the impact of the shock if a country switches from high to low financial regulation (Fig. 8.5). As one can see in column three of Fig. 8.5, this difference is statistically significant. Furthermore looking at column three in Fig. 8.5, one can see that the median of the log net output response is not statistically significantly difference from zero throughout. This suggests that the difference in the current account to net output response cannot be attributed to changes in the nature of the net output shock. For a log-difference net output shock (Fig. 8.6), the median impact response is −0.64 under low and −1.14 under

high liberalization (79 percent decline). Again, the third column suggests that the difference in impulse responses is statistically significant and that the net output impulse responses are statistically not very different from each other. In both cases, the absolute value of the current account response is larger and more persistent under in countries with high financial liberalization. Our theory predicts that, all else equal, the change in financial repression/liberalization should affect the impulse response of the current account balance to either type of shock in a similar way. Indeed, the change in the impact response and the persistence profile is similar across both shocks, which provides additional verification for the theory.

We repeat the same exercise for the other economic structure variables, namely capital account openness ($KA_{c,t}$), the exchange rate regime ($FXR_{c,t}$) and trade openness ($TR_{c,t}$) in Figs. 8.7 and 8.8, 8.9 and 8.10 and 8.11, respectively. It is easy to see that the effect of the other inter-

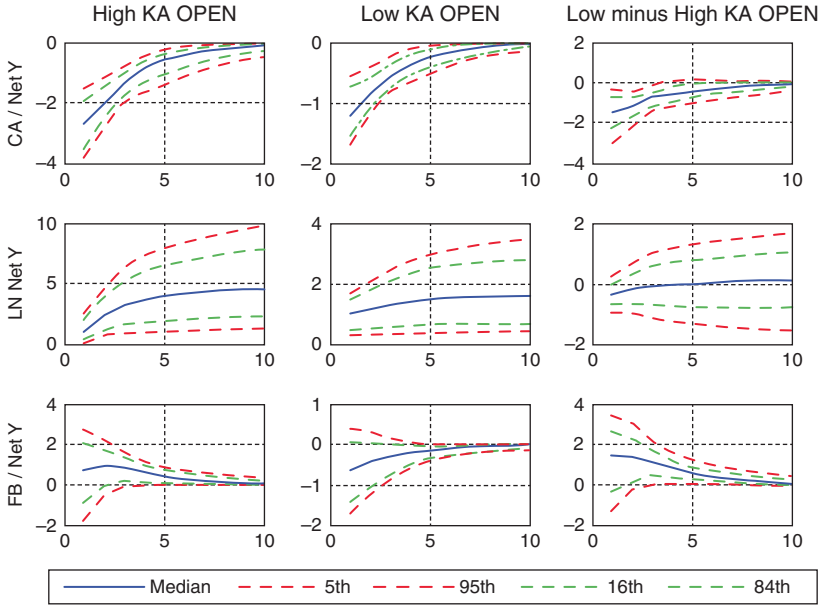

Fig. 8.7 Impulse response functions to log-difference net output shock—capital account openness

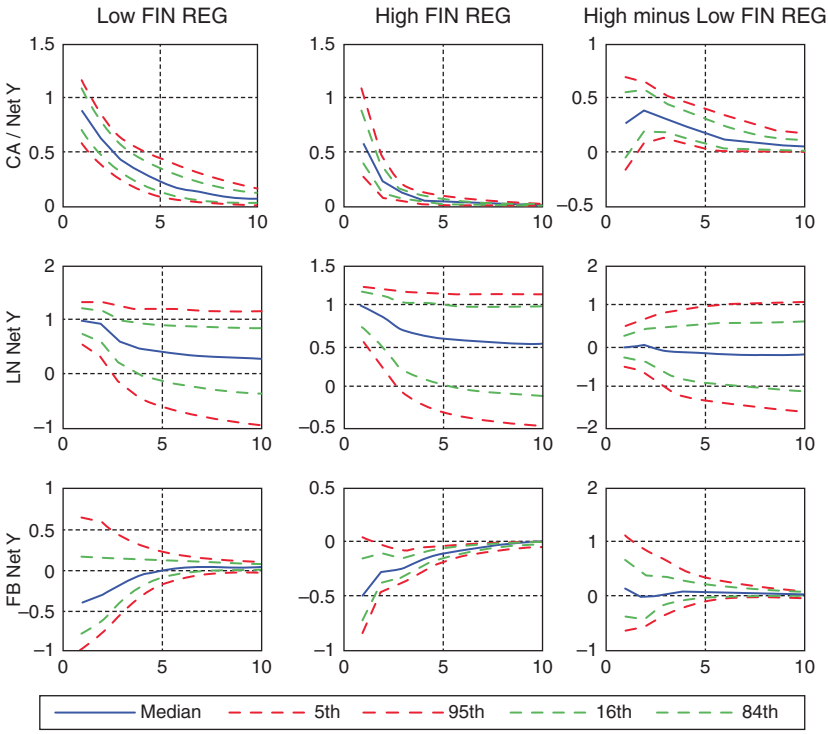

Fig. 8.8 Impulse response functions to log-level net output shock—financial regulation controlling for FX regime

action terms is either not statistically significantly different from zero or only slightly significant for only one, but not both, of the shocks.

The empirical results from the panel VAR estimations provide support for the theoretical results derived in Sect. 8.2. Financial liberalization affects the size and persistence of response of the current account to net output shocks in a statistically significant way. This is true both for net output shocks in log-differences and log-levels. In simple words, we find that the reaction of the current account to net output shocks is larger and more persistent under higher financial liberalization (less financial repression).

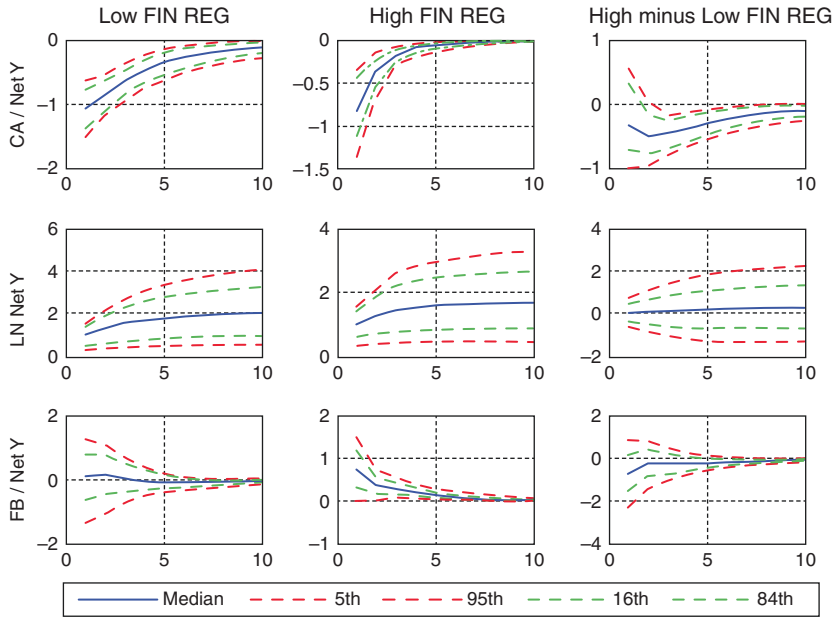

Fig. 8.9 Impulse response functions to log-difference net output shock—financial regulation controlling for FX regime

Robustness

Our results so far have used the Illzetzki et al. (2011) coarse de facto exchange rate regime classification. We also redo the previous exercise with the Illzetzki et al. (2011) fine de facto and IMF de jure exchange rate regime classification. The results do not seem to change.

The empirical results presented so far rely on the assumption that we have included all of the relevant determinants of the VAR coefficients. But there could also be other important empirical determinants of the VAR coefficients that we are not controlling for, leaving the findings vulnerable to omitted variable bias. Indeed, Abiad et al. (2008) argue that financial liberalization, as defined by the Abiad et al. (2010) index, is different from financial development. The former refers to a reduction of government intervention in financial markets, while the latter

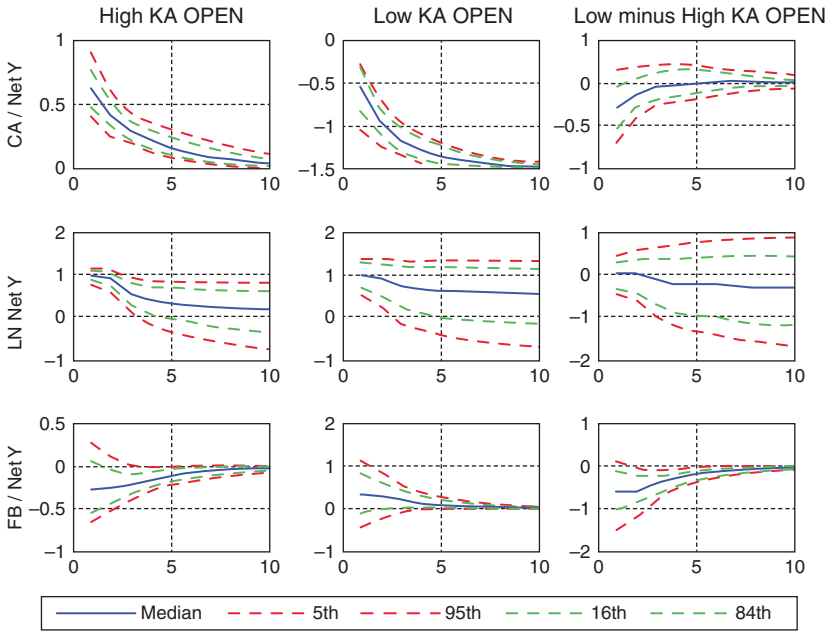

Fig. 8.10 Impulse response functions to log-level net output shock—capital account openness controlling for FX regime

refers to a general increase in financial market activity. The example provided by Abiad et al. (2008) is that of France and Japan in the 1980s as two countries with financially developed, yet highly repressed financial markets. Similarly, Latin American countries had financially liberalized, but not developed, financial markets in the 1990s. But these variables are, of course, likely to be correlated. To avoid omitted variable bias we therefore add the private credit to GDP ratio as an additional determinant of our panel VAR coefficients and re-estimate our model. As a result of data constraints, this means that our sample now includes 1223 observations and 78 countries. For the log-level net output shock, the results are very similar. But they are less statistically significant for the log-difference net output shock, although the quantitative difference impact is the same. Since the decrease in statistical significance is

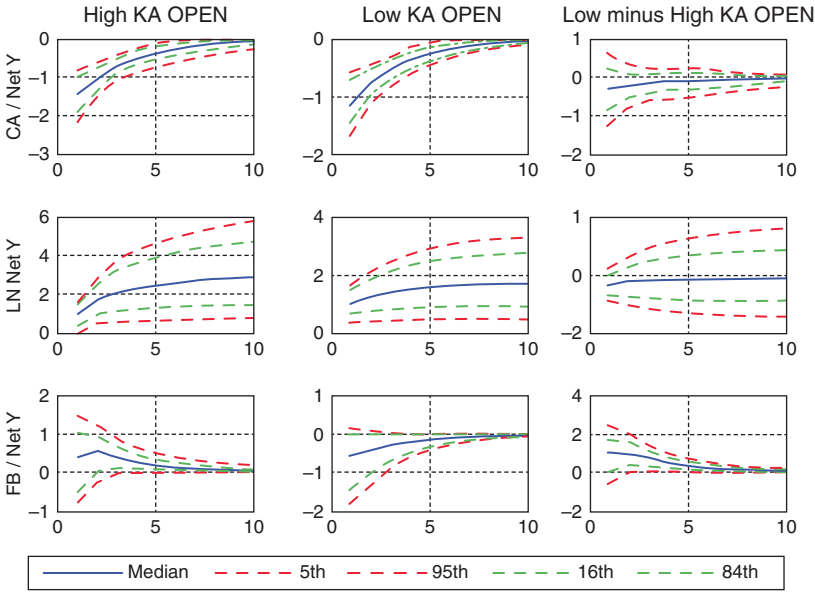

Fig. 8.11 Impulse response functions to log-difference net output shock—capital account openness controlling for FX regime

likely to be a result of the smaller sample, this broadly suggests that our previously reported results are robust to the inclusion of financial development as an additional explanatory variable. Interestingly, financial development itself does not appear to have the same impact as financial liberalization.[2]

8.5 Summary and Conclusions

Many economists today maintain that a flexible exchange rate regime should facilitate current account adjustment. Recent empirical evidence by Chinn and Wei (2013) clearly demonstrates the absence of such a

[2] The results mentioned in the text are available from the authors upon request and are not reported here due to space constraints.

relationship. In this chapter we examine the extent to which financial liberalization/repression can affect the size and adjustment of the current account, following domestic shocks. To our knowledge, this idea has not been explored in previous work, despite the potentially important policy implications. This chapter provides the first empirical evidence supporting the existence of a link between the degree of financial regulation and current account adjustment.

We introduce a liquidity constraint, as a proxy for domestic financial regulation, into the standard intertemporal model of the current account and show that the response of the current account to a net output shock increases as fewer households are liquidity constrained. This conclusion is robust to various standard modeling choices, such as the introduction of a stochastic world real interest rate or habit formation in consumption. In the case of external habit formation in consumption, the persistence of the current account response increases with a smaller liquidity constraint as well. Using a sample of 79 countries over the period 1973–2005, we test these theoretical predictions in an interacted panel VAR framework, identifying net output shocks with sign and shape restrictions. The structural VAR coefficients are allowed to vary with the degree of domestic financial regulation at the individual-country level. This feature allows us to assess if financial liberalization affects the size and persistence response of the current account to a net output shock as predicted by the theory. In our baseline specification, the median current account impulse response to a net output shock is 80 percent larger upon impact, as well as substantially more persistent, in a financially liberalized than financially repressed economy. This is robust to allowing the coefficients to vary with other potential determinants of current account adjustment, such as capital account openness, the exchange rate regime, trade openness and financial development. A second contribution of our work is the introduction of a new interacted panel VAR estimator, which addresses both cross-sectional dependence and dynamic heterogeneity, two important issues that previous applied work in development economics has ignored.

In policy terms, the present chapter speak to the debates on global current account imbalances and financial regulation that started when the global financial crisis broke out in late 2008. A growing literature has analyzed the role of global imbalances and financial regulation in the run-up to the crisis and the debate on the future regulatory landscape is equally active. Exchange rate policy and the desire by emerging markets to accumulate international reserves are typically blamed for the emergence of persistent and large current account imbalances. A host of regulatory initiatives were born in response to the crisis and many of them featured in the first version of Basel III published in late 2009. There is a tendency to consider global imbalances and financial regulation as relatively separate areas of policymaking. The idea that financial regulation might affect the size and dynamics of current account imbalances remains largely unexplored, perhaps because the mechanisms behind the possible link are understudied. The findings in this chapter indicate that these two policy areas should be seen as interrelated. We find that domestic financial repression/liberalization has an important effect on the size and dynamics of current account balances that is independent of the exchange rate regime. To our knowledge, this insight is not a prominent part of the current global financial reform debate but could have important implications for the future adjustment of global current account imbalances. It may be the case that tighter and better financial supervision contributes to a reduction in current account imbalances in addition to making financial systems more stable from a domestic perspective.

8.6 Appendix

Deriving the Linearized Budget Constraint

First, to derive Eq. (8.5), start with:

$$E_t \sum_{i=0}^{\infty} R_{t,i} C_{t+i}^{R} = \left(1 + r_t\right) B_t + E_t \sum_{i=0}^{\infty} R_{t,i} NO_{t+i}$$

then note that $R_{t,1}=1$, factor out C_t^R and NO_t on the LHS and RHS, respectively:

$$C_t^R\left[1+\sum_{i=1}^{\infty}E_tR_{t,i}\frac{C_{t+i}^R}{C_t^R}\right]=\left(1+r_t\right)B_t+NO_t\left[1+\sum_{i=1}^{\infty}E_tR_{t,i}\frac{NO_{t+i}}{NO_t}\right]$$

Then divide the whole expression by NO_t

$$\frac{C_t^R}{NO_t}\left[1+\sum_{i=1}^{\infty}E_tR_{t,i}\frac{C_{t+i}^R}{C_t^R}\right]=\left(1+r_t\right)\left(\frac{B_t}{NO_t}\right)+\left[1+\sum_{i=1}^{\infty}E_tR_{t,i}\frac{NO_{t+i}}{NO_t}\right]$$

Now recall that $1/\left(\prod_{j=t+1}^{t+i}\left(1+r_j\right)\right)$ and take logs and exponential in the infinite summations:

$$\frac{C_t^R}{NO_t}\left[1+\sum_{i=1}^{\infty}E_t\exp\left\{\ln C_{t+i}^R-\ln C_t^R-\ln\left(\prod_{j=t+1}^{t+i}\left(1+r_j\right)\right)\right\}\right]$$
$$=\exp\left(\ln\left(1+r_t\right)\right)\left(\frac{B_t}{NO_t}\right)+\left[1+\sum_{i=1}^{\infty}E_t\exp\left\{\ln NO_{t+i}-\ln NO_t-\ln\left(\prod_{j=t+1}^{t+i}\left(1+r_j\right)\right)\right\}\right]$$

Applying the log to the interest rate factorial, it is easy to see that:

$$\frac{C_t^R}{NO_t}\left[1+\sum_{i=1}^{\infty}E_t\exp\left\{\ln C_{t+i}^R-\ln C_t^R-\left(\sum_{j=t+1}^{t+i}\ln\left(1+r_j\right)\right)\right\}\right]$$
$$=\exp\left(\ln\left(1+r_t\right)\right)\left(\frac{B_t}{NO_t}\right)+\left[1+\sum_{i=1}^{\infty}E_t\exp\left\{\ln NO_{t+i}-\ln NO_t-\left(\sum_{j=t+1}^{t+i}\ln\left(1+r_j\right)\right)\right\}\right]$$

We can then add and subtract infinitely many $\ln C_t^{R'}s$ and $\ln NO_t$'s:

$$\frac{C_t^R}{NO_t}\left[1+\sum_{i=1}^{\infty}E_t\exp\left\{\begin{array}{c}\ln C_{t+i}^R-\ln C_{t+i-1}^R+\ln C_{t+i-1}^R\ldots\\ -\ln C_{t+1}^R+\ln C_{t+1}^R-\ln C_t^R-\left(\sum_{j=t+1}^{t+i}\ln\left(1+r_j\right)\right)\end{array}\right\}\right]$$

$$=\exp\left(\ln\left(1+r_t\right)\right)\left(\frac{B_t}{NO_t}\right)$$

$$+\left[1+\sum_{i=1}^{\infty}E_t\exp\left\{\begin{array}{c}\ln NO_{t+i}-\ln NO_{t+i-1}+\ln NO_{t+i-1}\ldots\\ -\ln NO_{t+1}+\ln NO_{t+1}-\ln NO_t-\left(\sum_{j=t+1}^{t+i}\ln\left(1+r_j\right)\right)\end{array}\right\}\right]$$

which is Eq. (8.6) in the main text:

$$\frac{C_t}{NO_t}\left[1+\sum_{i=1}^{\infty}E_t\exp\left\{\sum_{j=t+1}^{t+i}\left(\Delta\ln C_j-\ln\left(1+r_j\right)\right)\right\}\right]$$

$$=\exp\left\{\ln\left(1+r_t\right)\right\}\frac{B_t}{NO_t}+\left[1+\sum_{i=1}^{\infty}E_t\exp\left\{\sum_{j=t+1}^{t+i}\left(\Delta\ln NO_j-\ln\left(1+r_j\right)\right)\right\}\right]$$

To linearize this expression, we use the standard formula $f(x)=f(a)+f'(x)(x-a)$

$$c\left[1+\sum_{i=1}^{\infty}\kappa^i\right]+\frac{C_t}{NO_t}\left[1+\sum_{i=1}^{\infty}\kappa^i\right]+c\left[1+\sum_{i=1}^{\infty}\kappa^i\right]\sum_{i=1}^{\infty}\kappa^i E_t\left\{\Delta\ln C^R{}_{t+i}-\ln\left(1+r_{t+i}\right)\right\}$$

$$=\frac{1}{e^{-\mu}}\frac{B_t}{NO_t}+\frac{b}{e^{-\mu}}\ln\left(1+r_t\right)+\left[1+\sum_{i=1}^{\infty}\kappa^i\right]$$

$$+\left[1+\sum_{i=1}^{\infty}\kappa^i\right]\left[\sum_{i=1}^{\infty}\kappa^i E_t\left\{\Delta\ln NO_{t+i}-\ln\left(1+r_{t+i}\right)\right\}\right]$$

Now note that $\left[1+\sum_{i=1}^{\infty}\kappa^i\right]=\left[1+\kappa\sum_{i=0}^{\infty}\kappa^i\right]=\left[1+\frac{\kappa}{1-\kappa}\right]=\left[\frac{1}{1-\kappa}\right]$ and that in the steady state, when all the hat variables take the value of 0, $c\left[1+\sum_{i=1}^{\infty}\kappa^i\right]=\left[1+\sum_{i=1}^{\infty}\kappa^i\right]$, then it is easy to obtain the final linearized form:

$$\frac{C_t^R}{NO_t} = \frac{1-\kappa}{e^{-\mu}}\left(\frac{B_t}{NO_t}\right) - c\sum_{i=1}^{\infty}\kappa^i E_t\left\{\Delta \ln C^R{}_{t+i} - \ln\left(1+r_{t+i}\right)\right\}$$
$$+\sum_{i=1}^{\infty}\kappa^i E_t\left\{\Delta \ln NO_{t+i} - \ln\left(1+r_{t+i}\right)\right\} + \frac{1-\kappa}{e^{-\mu}} b^P \ln\left(1+r_t\right) \qquad (8.13)$$

Derivation of the Current Account Reaction Function with External Habits and a Constant World Real Interest Rate

We start by linearizing the definition of aggregate consumption $C_t = (1-\gamma)C_t^R + \gamma C_t^{NR}$ to obtain

$$\frac{C_t}{NO_t} = (1-\gamma)\frac{C_t^R}{NO_t}. \qquad (8.14)$$

Following Obstfeld and Rogoff (1996), the current account can be expressed as:

$$CA_t = B_{t+1} - B_t = NO_t + rB_t - C_t$$

which, noting that $B_t = (1-\gamma)B_t^P + B_t^G$ and $r = e^{\ln(1+r)} - 1$, can be linearized as the following the current account to net output ratio:

$$ca_t = \left(e^{\mu} - 1\right)\frac{B_t}{NO_t} - \frac{C_t}{NO_t} \qquad (8.15)$$

where $ca_t = \frac{CA_t}{NO_t}$. Now substitute Eq. (8.13) into Eq. (8.14), then into Eq. (8.15). Simplifying and using $\frac{1}{e^{9}} = 1$ and $(e^{\mu} - 1) = r$ as in Kano (2008), yields:

$$ca_t = (1-\gamma)\frac{\overline{C^R}}{\overline{NO}}\sum_{i=1}^{\infty}\kappa^i E_t\left\{\Delta \ln C^R_{t+i} - \ln(1+r_{t+i})\right\}$$

$$-(1-\gamma)\sum_{i=1}^{\infty}\kappa^i E_t\left\{\Delta \ln NO_{t+i} - \ln(1+r_{t+i})\right\}$$

The constant world real interest rate assumption implies $\ln(1+r_t)=0\ \forall$ *i*. We also add and subtract $(1-\gamma)hca_{t-1}$ to obtain

$$ca_t = (1-\gamma)hca_{t-1} + (1-\gamma)\frac{\overline{C^R}}{\overline{NO}}\sum_{i=1}^{\infty}\kappa^i E_t\left\{\Delta \ln C^R_{t+i}\right\}$$

$$-h(1-\gamma)^2\frac{\overline{C^R}}{\overline{NO}}\sum_{i=1}^{\infty}\kappa^i E_{t-1}\left\{\Delta \ln C^R_{t+i-1}\right\}$$

$$-(1-\gamma)\sum_{i=1}^{\infty}\kappa^i E_t\left\{\Delta \ln NO_{t+i}\right\} + h(1-\gamma)^2\sum_{i=1}^{\infty}\kappa^i E_{t-1}\left\{\Delta \ln NO_{t+i-1}\right\} \quad (8.16)$$

Furthermore, log-linearizing the Euler equation gives

$$E_t\Delta \ln C^R_t = h\frac{\overline{C}}{\overline{C^R}}\Delta \ln C_{t-1}$$

which can be expressed as

$$E_t\Delta \ln C^R_t = h(1-\gamma)\Delta \ln C^R_{t-1} + h\gamma\frac{\overline{NO}}{\overline{C^R}}\Delta \ln NO_{t-1} \quad (8.17)$$

Substituting Eq. (8.17) into Eq. (8.16) gives

$$ca_t = (1-\gamma)hca_{t-1} + h(1-\gamma)^2 c\sum_{i=1}^{\infty}\kappa^i E_t\left\{\Delta \ln C^R_{t+i-1}\right\}$$

$$+h\gamma\left(1-\gamma\right)\sum_{i=1}^{\infty}\kappa^{i}E_{t}\left\{\Delta\ln NO_{t+i-1}\right\}-h\left(1-\gamma\right)^{2}c\sum_{i=1}^{\infty}\kappa^{i}E_{t-1}\left\{\Delta\ln C_{t+i-1}^{R}\right\}$$

$$-\left(1-\gamma\right)\sum_{i=1}^{\infty}\kappa^{i}E_{t}\left\{\Delta\ln NO_{t+i}\right\}+h\left(1-\gamma\right)^{2}\sum_{i=1}^{\infty}\kappa^{i}E_{t-1}\left\{\Delta\ln NO_{t+i-1}\right\} \quad (8.18)$$

where $c=\frac{\overline{C^{R}}}{\overline{NO}}$;.

One can then rearrange to show that:

$$ca_{t}=\left(1-\gamma\right)hca_{t-1}+h\left(1-\gamma\right)^{2}c\sum_{i=1}^{\infty}\kappa^{i}\left(E_{t}-E_{t-1}\right)\left\{\Delta\ln C_{t+i-1}^{R}\right\}$$

$$+h\gamma\left(1-\gamma\right)\sum_{i=1}^{\infty}\kappa^{i}E_{t}\left\{\Delta\ln NO_{t+i-1}\right\}-\left(1-\gamma\right)\sum_{i=1}^{\infty}\kappa^{i}E_{t}\left\{\Delta\ln NO_{t+i}\right\}$$

$$+h\left(1-\gamma\right)^{2}\sum_{i=1}^{\infty}\kappa^{i}E_{t-1}\left\{\Delta\ln NO_{t+i-1}\right\}$$

Define $f_{t}=h\left(1-\gamma\right)^{2}c\sum_{i=1}^{\infty}\kappa^{i}\left(E_{t}-E_{t-1}\right)\left\{\Delta\ln\tilde{C}_{t+i-1}^{R}\right\}$ and use $\sum_{i=1}^{\infty}\kappa^{i}E_{t}\left\{\Delta\ln NO_{t+i-1}\right\}=\kappa\sum_{i=0}^{\infty}\kappa^{i}E_{t}\left\{\Delta\ln NO_{t+i}\right\}$ and $\sum_{i=1}^{\infty}\kappa^{i}E_{t}\left\{\Delta\ln NO_{t+i}\right\}+\Delta\ln NO_{t}=\sum_{i=0}^{\infty}\kappa^{i}E_{t}\left\{\Delta\ln NO_{t+i}\right\}$ to obtain

$$ca_{t}=\left(1-\gamma\right)hca_{t-1}+f_{t}-\left(1-h\kappa\gamma\right)\left(1-\gamma\right)\sum_{i=0}^{\infty}\kappa^{i}E_{t}\left\{\Delta\ln NO_{t+i}\right\}$$

$$+h\left(1-\gamma\right)^{2}\sum_{i=1}^{\infty}\kappa^{i}E_{t-1}\left\{\Delta\ln NO_{t+i-1}\right\}+\left(1-\gamma\right)\Delta\ln NO_{t}$$

Now using $\sum_{i=1}^{\infty}\kappa^{i}E_{t}\left\{\Delta\ln NO_{t+i-1}\right\}=\kappa\sum_{i=0}^{\infty}\kappa^{i}E_{t}\left\{\Delta\ln NO_{t+i}\right\}$ and adding and subtracting $h\kappa\left(1-\gamma\right)^{2}\sum_{i=0}^{\infty}\kappa^{i}E_{t}\left\{\Delta\ln NO_{t+i}\right\}$ one obtains

$$ca_t = (1-\gamma)hca_{t-1} - (1-h\kappa)(1-\gamma)\sum_{i=0}^{\infty}\kappa^i E_t\{\Delta \ln NO_{t+i}\}$$
$$+(1-\gamma)\Delta \ln NO_t - h\kappa(1-\gamma)^2\sum_{i=0}^{\infty}\kappa^i (E_t - E_{t-1})\{\Delta \ln NO_{t+i}\} + f_t$$

which corresponds to Eq. (8.8) in the main text. To further solve this expression, it is necessary to assume a stochastic process for $\Delta \ln NO_t$. Under the assumption of $\Delta \ln NO_t = \rho \Delta \ln NO_{t-1} + \varepsilon_t$ Equation (8.8) can be expressed as follows:

$$ca_t = (1-\gamma)hca_{t-1} - \frac{(1-\gamma)(1-h\kappa)}{1-\rho\kappa}\Delta \ln NO_t$$
$$+(1-\gamma)\Delta \ln NO_t - \frac{h\kappa(1-\gamma)(1-\gamma)}{(1-\kappa)}\varepsilon_t + f_t$$

where we replaced $h\kappa(1-\gamma)(1-\gamma)\sum_{i=0}^{\infty}\kappa^i (E_t - E_{t-1})\Delta \ln NO_{t+i}$ with $\frac{h\kappa(1-\gamma)(1-\gamma)}{(1-\kappa)}\varepsilon_t$ and $(1-\gamma)(1-h\kappa)\sum_{i=0}^{\infty}\kappa^i E_t \Delta \ln NO_{t+i}$ with $\frac{(1-\gamma)(1-h\kappa)}{1-\rho\kappa}\Delta \ln NO_t$. After further simplification, one can then obtain Eq. (8.9) in the main text:

$$ca_t = (1-\gamma)hca_{t-1} - \frac{(1-\gamma)\kappa(\rho-h)}{1-\rho\kappa}\rho\Delta \ln NO_{t-1}$$
$$-\kappa(1-\gamma)\frac{\rho(1-\kappa)+h(\kappa-\gamma)-\rho\kappa h(1-\gamma)}{(1-\kappa)(1-\rho\kappa)}\varepsilon_t + f_t$$

To derive Eq. (8.10) note that under the assumption that $\ln NO_t = \rho \ln \ln NO_{t-1} + \varepsilon_t$, $\Delta \ln NO_t = (\rho - 1) \ln NO_{t-1} + \varepsilon_t$ and follow the steps above. In this case

$$h\kappa(1-\gamma)(1-\gamma)\sum_{i=0}^{\infty}\kappa^{i}\left(E_{t}-E_{t-1}\right)\Delta\ln NO_{t+i}=-(1-\rho)\frac{h\kappa(1-\gamma)(1-\gamma)}{(1-\kappa)}\varepsilon_{t}$$

and $$(1-\gamma)(1-h\kappa)\sum_{i=0}^{\infty}\kappa^{i}E_{t}\,\Delta\ln NO_{t+i}=-(1-\rho)\frac{(1-\gamma)(1-h\kappa)}{1-\rho\kappa}\ln NO_{t-1}\,.$$

Derivation of the Current Account Reaction Function with Internal Habits and a Constant World Real Interest Rate

Start with the following expression for the current account

$$ca_{t}=(1-\gamma)\frac{c\kappa h}{1-\kappa h}\Delta\ln C_{t}^{R}-(1-\gamma)\sum_{i=1}^{\infty}\kappa^{i}E_{t}\left\{\Delta\ln NO_{t+i}\right\}$$

In order to solve out for the growth rate of consumption in the current account equation, we add and subtract hca_{t-1} on both sides of the equation. This yields

$$ca_{t}=hca_{t-1}-(1-\gamma)\sum_{i=1}^{\infty}\kappa^{i}E_{t}\left\{\Delta\ln NO_{t+i}\right\}$$

$$+(1-\gamma)h\sum_{i=1}^{\infty}\kappa^{i}E_{t-1}\left\{\Delta\ln NO_{t+i}\right\}+(1-\gamma)\frac{c\kappa h}{1-\kappa h}\left(\Delta\ln C_{t}^{R}-h\Delta\ln C_{t-1}^{R}\right)$$

Now note that with internal habits in consumption, Eq. (8.4) can be log-linearized as $E_{t}\Delta\ln C_{t+1}^{R}=h\Delta\ln C_{t}^{R}$. Then use $\sum_{i=1}^{\infty}\kappa^{i}E_{t}\left\{\Delta\ln NO_{t+i-1}\right\}=\kappa\sum_{i=0}^{\infty}\kappa^{i}E_{t}\left\{\Delta\ln NO_{t+i}\right\}$, $\sum_{i=1}^{\infty}\kappa^{i}E_{t}\left\{\Delta\ln NO_{t+i}\right\}$ $+\Delta\ln NO_{t}=\sum_{i=0}^{\infty}\kappa^{i}E_{t}\left\{\Delta\ln NO_{t+i}\right\}$ and add and subtract $(1-\gamma)(h\kappa)\sum_{i=0}^{\infty}\kappa^{i}E_{t}\left\{\Delta\ln NO_{t+i}\right\}$ to obtain (8.11) in the main text:

$$ca_t = hca_{t-1} + (1-\gamma)\Delta \ln NO_t - (1-\gamma)(1-h\kappa)\sum_{i=0}^{\infty}\kappa^i E_t\{\Delta \ln NO_{t+i}\}$$

$$-(1-\gamma)(h\kappa)\sum_{i=0}^{\infty}\kappa^i (E_t - E_{t-1})\{\Delta \ln NO_{t+i}\} + f_t$$

where $f_t = (1-\gamma)\frac{c\kappa h}{1-\kappa h}\left(\Delta \ln C_t^R - E_{t-1}\Delta \ln C_t^R\right)$. Solving under the assumption that $\Delta \ln NO_t = \rho \Delta \ln NO_{t-1} + \varepsilon_t$ gives the following current account reaction function:

$$ca_t = hca_{t-1} + \frac{(1-\gamma)\kappa(h-\rho)}{1-\rho\kappa}\Delta \ln NO_{t-1}$$

$$-(1-\gamma)\kappa\frac{\rho(1-\kappa)+h\kappa(1-\rho)}{(1-\kappa)(1-\rho\kappa)}\varepsilon_t + f_t$$

Solving under the assumption that $\ln NO_t = \rho \ln NO_{t-1} + \varepsilon_t$, in which case $\Delta \ln NO_t = (\rho - 1)\ln NO_{t-1} + \varepsilon_t$ and and

$$(1-\gamma)(h\kappa)\sum_{i=0}^{\infty}\kappa^i (E_t - E_{t-1})\Delta \ln NO_{t+i} = -(1-\rho)\frac{(1-\gamma)h\kappa}{(1-\kappa)}\varepsilon_t$$

$$(1-\gamma)(1-h\kappa)\sum_{i=0}^{\infty}\kappa^i E_t \Delta \ln NO_{t+i} = -(1-\rho)\frac{(1-\gamma)(1-h\kappa)}{1-\rho\kappa}\ln NO_{t-1}$$

yields the following current account reaction function:

$$ca_t = hca_{t-1} + \frac{(1-\gamma)\kappa(h-\rho)(1-\rho)}{1-\rho\kappa}\ln NO_{t-1}$$

$$+(1-\gamma)\frac{h\kappa(1-\rho)+(1-\kappa)}{(1-\kappa)}\varepsilon_t + f_t$$

It is easy to show that for log-level net output shocks, $\frac{\partial ca_t}{\partial \varepsilon_t} > 0$, and that for log-difference net output shocks, $\frac{\partial ca_t}{\partial \varepsilon_t} < 0$, meaning that this model provides identical identification restrictions to the model derived under the assumption of external habits.

Derivation of the Current Account Reaction Function Under a Stochastic Time-varying World Real Interest Rate and No Habitual Consumption

This appendix section derives the current account reaction function under the assumption of a stochastic world interest rate and shows the observational equivalence with to the model derived under the assumption of internal habits. As a first step, linearize the definition of the current account ($CA_t = NO_t + r_t B_t - C_t$) under the assumption of a time-varying stochastic world real interest rate to obtain

$$ca_t = \left(e^{\mu} - 1\right)\left(\left(1-\gamma\right)\frac{B_t}{NO_t}\right) + e^{\mu} b \ln\left(1 + r_t\right) - \frac{C_t}{NO_t} \tag{8.19}$$

Equation (8.4) can be written as

$$E_t \Delta \ln C_{t+1}^R = \delta + \ln \beta + E_t \ln\left(1 + r_{t+1}\right)$$

Substituting this into Eq. (8.7) yields

$$\frac{C_t^R}{NO_t} = \frac{1-\kappa}{e^{-\mu}}\left(\frac{B_t}{NO_t}\right) + \frac{1-\kappa}{e^{-\mu}}\left(b\right)\ln\left(1 + r_t\right) + \sum_{i=1}^{\infty}\kappa^i E_t\left\{\Delta \ln NO_{t+i} - \ln\left(1 + r_{t+i}\right)\right\}$$

Now, plugging this into Eq. (8.19) and simplifying[3] yields:

$$ca_t = -\left(1-\gamma\right)\sum_{i=1}^{\infty}\kappa^i E_t\left\{\Delta \ln NO_{t+i}\right\} + \left(1-\gamma\right)\sum_{i=1}^{\infty}\kappa^i E_t\left\{\ln\left(1 + r_{t+i}\right)\right\}$$

Now note that $\ln(1 + r_{t+i}) \equiv r_{t+i}$. Assuming an AR(1) process for the world real interest rate, $r_t = \rho^r r_{t-1} + \eta_t$, one can then rewrite the above as

[3] An important result, following Kano (2008), that we use throughout our derivations to simplify the equations is $\left(e^{\mu} - 1\right) = \left(e^{\mu} - e^{\vartheta}\right) = e^{\mu}\left(1 - e^{\vartheta-\mu}\right) = \frac{\left(1-\kappa\right)}{e^{-\mu}}$ since $e^{\vartheta} \approx 1$.

$$ca_t = -(1-\gamma)\sum_{i=1}^{\infty}\kappa^i E_t\left\{\Delta \ln NO_{t+i}\right\} + \frac{(1-\gamma)\rho^r\kappa}{1-\rho^r\kappa}\rho^r r_{t-1} + f_t \quad (8.20)$$

where $f_t = \left[\frac{(1-\gamma)\rho^r\kappa}{1-\rho^r\kappa}\right]\eta_t$. Comparing these last two expressions and using $\sum_{i=1}^{\infty}\kappa^i E_t\left\{\Delta \ln NO_{t+i}\right\} + \Delta \ln NO_t = \sum_{i=0}^{\infty}\kappa^i E_t\left\{\Delta \ln NO_{t+i}\right\}$, one can see that:

$$ca_t = \rho^r ca_t + (1-\gamma)\Delta \ln NO_t - (1-\gamma)\left(1-\rho^r\kappa\right)\sum_{i=0}^{\infty}\kappa^i E_t\left\{\Delta \ln NO_{t+i}\right\}$$

$$-(1-\gamma)\left(\rho^r\kappa\right)\sum_{i=0}^{\infty}\kappa^i\left(E_t - E_{t-1}\right)\left\{\Delta \ln NO_{t+i}\right\} + f_t$$

which turns out to be observationally equivalent to the internal habits case.

8.7 Bayesian Estimation of the Panel VAR Model

To simplify the following exposition, we rewrite the panel VAR model as:

$$Y_c = X_c B_c + FD_c + Z_c GH + U_c$$

where Y_c is a matrix with N endogenous variables in the columns and time-series observations in the rows, in country c, with the total number of countries C. X_c contains the lags of the variables in Y_c and the interaction terms, i.e. $\sum_{w=1}^{W}\sum_{k=1}^{L}B_{w,k,c}Y_{c,t-k}Z_{c,t}^{w}$ in Eq. (8.12), and B_c is the array of associated coefficients. F contains the common factors and the matrix D_c is the matrix of factor loadings, allowing each factor to affect each equation differently. Z_c contains the economic structure variables in levels and the

interaction terms for Y_c, i.e. $\sum_{w=2}^{W} G_w Y_{t,c} Z_{c,t}^w$ and $\sum_{w=2}^{W} H_w Z_{c,t}^w$ in (8.12), with GH containing the corresponding coefficients. U_c is the matrix of the actual reduced form country-specific VAR innovations. This is assumed to be normally distributed with variance–covariance matrix Σ.

Jarocinski (2010) shows that based on these assumptions, the joint posterior of the model can be written as:

$$\prod_c |\Sigma|^{\frac{T_c}{2}} \exp\left(-\frac{1}{2}\sum_c \left(y_c - X_c\beta_c - Fd_c - Z_c gh\right)' \left(\Sigma^{-1} \otimes I_{T_c}\right)\left(y_c - X_c\beta_c - Fd_c - Z_c gh\right)\right)$$
$$\lambda^{-\frac{CNK}{2}} \exp\left(-\frac{1}{2}\sum_c \left(\beta_c - \bar{\beta}\right)' L_c^{-1}\lambda^{-1}\left(\beta_c - \bar{\beta}\right)_c |\Sigma|^{-\frac{N+1}{2}} \lambda^{-\frac{v+2}{2}} \exp\left(-\frac{1}{2}\frac{s}{\lambda}\right)\right.$$

where $X_c = I_N \otimes X_C$, $F = I_N \otimes F$, $Z_c = I_N \otimes Z_C$, $y_c \equiv vec(Y_c)$, $\beta_c \equiv vec(B_c)$, $\bar{\beta} \equiv vec\left(\bar{\mathrm{B}}\right)$, $d_c \equiv vec(D_c)$ and $gh = vec(GH)$. Based on this posterior, it is easy to derive the conditional distributions of the Gibbs sampler for this model:

The country-specific VAR coefficients β_c are drawn from:

$$p\left(\beta_c | \bar{\beta}, F, Y_c, \Lambda_c, Z_C\right) = N\left(\left(G_c\right)^{-1}\left(\Sigma_c^{-1} \otimes X_c'\right) vec\left(Y_c - FD_c - Z_c GH\right) + \lambda^{-1} L_c^{-1}\bar{\beta}, \left(G_c^{-1}\right)\right)$$

where $G_c = \Sigma_c^{-1} \otimes X_c' X_c + \lambda^{-1} L_c^{-1}$

$$p\left(\bar{\beta} | \beta_c, \Lambda_c\right) = N\left(\left(\lambda^{-1}\Sigma L_c^{-1}\right)^{-1} \lambda^{-1}\Sigma L_c^{-1}\beta_c, \left(\lambda^{-1}\Sigma L_c^{-1}\right)^{-1}\right)$$

λ is treated as a hyperparameter and drawn from the following inverse gamma 2 distribution:

$$p\left(\lambda|\bar{\beta},\beta_c,L_c^{-1}\right)=IG_2\left(s+\Lambda_c\left(\beta_c-\bar{\beta}\right),CNK+v\right)$$

A completely non-informative prior with s and v set to 0 results in an improper posterior in this case. We therefore set both of the quantities to very small positive numbers, which is equivalent to assuming a weakly informative prior. But it is important to point out that λ is estimated from the total number of coefficients that this prior is applied to, namely the product of country (C), equations (N) and total number of coefficients in each equation (K). Given this large number of effective units, any weakly informative prior will be dominated by the data. Finally, the variance matrix of the residuals, Σ, is drawn from an inverse-Wishart distribution:

$$p\left(\Sigma_c|d_c,\beta_c,F,Z_C\right)=IW\left(U'U,T\right)$$

where $U_c=y_c-\tilde{X}_c\beta_c-\tilde{F}d_c$, U is an Txn matrix stacking all of the U_c's and T is the number of observations for each country.

As in Lopes and West (2004), each individual factor, f^i, for can be drawn from:

$$p\left(f^i\right)|Y_c,B_c,K_i,\Lambda_I)=N\left(\left(1+K_i'\Sigma_i^{-1}K_i\right)^{-1}K_i'\Sigma_i^{-1}\left(Y_c^i-X_c^iB_c^i-Z_c^iGH^i\right),\left(1+K_i'\Sigma_i^{-1}K_i\right)^{-1}\right)$$

where K_i is an $Cx1$ vector the associated factor loadings, made up from the elements in d_c. Σ_i is an CxC diagonal matrix of variances associated with equation n in country c that the factor loads on. The coefficients associated with the factors are drawn from:

$$p\left(d_c|F,Y_c,B_c,\Sigma_I\right)=N\left(\left(F'F\right)^{-1}F'\left(Y_c-X_cB_c-Z_cGH\right),\left(F'F\right)^{-1}\right)$$

Finally, we draw the coefficients contained in *GH* equation by equation from:

$$p\left(GH^n|F,Y_c,B_c,\Sigma_I\right)=N\left(\left(Z_c^{n'}\Sigma^{n,-1}Z_c^n\right)^{-1}Z_c^n\left(Y_c^n-X_c^nB_c^n-F^nD_c^n\right),\left(Z_c^{n'}\Sigma^{n,-1}Z_c^n\right)^{-1}\right)$$

where the subscript *n* refers to equation *n* in (8.12).This is to capture the asymmetric nature of *GH* across both of the equations. For the first equation, *GH* contains the coefficients on the levels of the economic structure variables, namely the financial repression index, the capital account openness index and the exchange rate regime index. The coefficients on all other variables take the value of zeros. For the second equation, all of the coefficients in *GH* are estimated. In other words, in addition to all of the coefficients from Eq. (8.1), the coefficients on Y_c^1 and all of the associated interaction terms are also estimated now.

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