



Literature survey on capital account management in low-income countries

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Key messages

- Capital flows can accelerate growth, but also can-if excessive and short-term-imply significant macro and financial stability risks
- Capital account management has several aims, including prudential one to prevent building -up of financial stability risk
- International financial institutions , like IMF, increasingly support usefulness of capital account management, especially when complemented by good macro-policies
- Prudential domestic regulation of banks' currency mismatches can be valuable instrument for regulating risk to banks
- However, regulation of direct foreign loans to non-financial companies may require capital account management

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Executive summary

Over the last few years, the debate on private capital flows and their management has regained momentum. This paper surveys the literature on the following private capital flows-related issues, with a focus on low-income countries: (i) impact on growth; (ii) risks; (iii) capital account management tools; and (iv) effectiveness of different policy measures. Overall, the analysis confirms conventional wisdom according to which private capital flows (i.e. FDI, portfolio investment, cross-border bank lending), in some cases and under certain conditions, may carry important opportunities, but they are also a significant source of risks. Therefore, it is important to develop adequate and effective capital account management policy tools.

As regards growth benefits of capital flows, only a few studies have a specific focus on low-income economies, and these studies have been unable to provide conclusive evidence about the positive impact of private capital flows on economic growth. Indeed, some papers show that private capital flows enhance economic growth, while others report that there is no direct evidence of such a relationship; others even report that there is a negative effect. Much of the research studies assessing the impacts on growth of individual types of private capital flows in LICs focus on foreign direct investment (FDI). Most studies find a positive relationship between FDI inflows and growth, although there are a few exceptions. The main channels through which FDI may affect growth are capital formation, technology transfer and spill-over, human capital enhancement (i.e. augmentation of the level of knowledge in the host country through labour training and skill acquisition), and increased competition. The picture is less clear regarding the impact of other capital flows on growth. One interesting result is that cross-border bank lending appears to exert a negative and significant impact on growth in the sub-sample of natural resource economies. This may be explained by the fact that oil producer countries are characterized by relatively weak institutions (resource curse) and have less incentive to invest in financial sector reforms and regulation than non-oil countries. In the long-run, these factors might expose resource rich countries to international banking risks, including potential additional transmission channels of systemic risk across countries, and so are likely to have a negative impact on economic growth.

Private capital flows are a double edged sword. Some may have growth effects. However, sudden increases or drops in private capital flows may also create upheavals in recipient economies, especially in the most fragile LICs. The risks stemming from private capital flows can be classified into three categories: (i) macroeconomic risks; (ii) financial stability risks; and (iii) risk of capital flow reversal/sudden stop. The macroeconomic risks are associated to sudden surges in capital inflows, which can lead to appreciation and volatility of real exchange rates as well as to inflation, thus affecting domestic policy objectives such as export promotion, exchange rate stability and national price stability. Financial stability risks refer to the adverse impacts that surges in capital inflows may have on asset prices and credit, and more broadly on the financial sector. Finally, the risk of a sudden capital flow reversal could lead to depletion of reserves and sharp

currency depreciations; it could also cause a currency crisis that may be linked to a banking crisis. Stylized facts related to the 2008-09 global financial crisis confirms that in LICs short-term loans and portfolio investment are highly volatile and subject to sudden reversals or stops. During the global financial crisis, the IMF found evidence of portfolio inflow reversals even in LICs with capital restrictions. Stylized facts related to the 2008-09 global financial crisis confirm that over-all in LICs short-term loans and portfolio investment are highly volatile and subject to sudden reversals or stops.

As regards managing capital flows, capital controls are restrictions on the level or composition of foreign capital into or out of a country. There are four main reasons that drive countries to adopt capital controls: fear of appreciation, fear of hot money, fear of large inflows and fear of loss of monetary autonomy (the so-called “trilemma”). Several other reasons have been advanced to justify capital controls. For example, the need to compensate for financial market imperfections resulting from asymmetric information problems and herding behaviour, to protect a fixed exchange rate regime. Capital controls can also be used for prudential reasons. In other words, capital controls may represent a useful tool to prevent the build-up of risks such as the issuance of excessively risky financial instruments or the engagement in excessive short-term borrowing, which may lead to severe financial crises. One of the main drawbacks of capital controls is represented by the fact that a number of mechanisms may be developed for circumvention of these regulations; such circumvention can be reduced or almost eliminated if costs of avoiding such controls are increased by policy actions, and are higher than the profits generated by the avoidance. Capital controls may be price based or quantity based. Among price-based capital controls, a widely used measure is the so-called unremunerated reserve requirement (URR), which requires that a deposit is lodged at zero interest with the Central Bank for a minimum period, in an amount proportional to the size of the inflow, creating an additional cost to external financing , thus discouraging the inflows.

An interesting IMF finding shows that among the different country-income groups, LICs account for the highest shares of capital inflows and outflows subject to controls. Moreover, in low-income countries the use of capital controls on outflows is more widespread than that on inflows. Until the mid-2000s the use of capital controls in LICs slightly declined. This process of modest liberalization has stopped following the global financial crisis. In fact, the 2008-09 global financial crisis marked a revival in the use of capital controls.

In the face of surges in capital inflows, three macroeconomic measures can be used to prevent overheating and real currency appreciation, and to reduce the economy's vulnerability to a sharp reversal of inflows: (i) official foreign exchange intervention; these interventions may be sterilized (sterilization) or unsterilized (ii) exchange rate intervention; and (iii) fiscal policy. Sterilized foreign exchange intervention has as main advantage that it neutralizes the liquidity impact of capital inflows (i.e. the increase in base money arising from purchases of foreign currency). Moreover, it has the beneficial side effect of building reserve buffers which may be useful in the case of a sudden reversal of flows. However, one drawback is that by increasing the outstanding stock of domestic debt, it ends up increasing domestic interest rates. As a consequence, open-market operations may induce further capital flows, alter the composition of capital flows by increasing the share of short-term and portfolio flows, and it may raise quasi-fiscal costs by widening the domestic and foreign interest rate spread. For these reasons, sterilization works at best in the short term (except where interest rates are kept low as in the case of China).

Another macroeconomic measure that a country may adopt to react to surges in private capital inflows is fiscal tightening. According to the literature, this policy measure allows countering the adverse effects of capital inflows on aggregate demand and inflation. There are also problems. First, fiscal tightening requires changes in the legislation difficult to be undertaken on short notice. In LICs fiscal tightening may also be particularly difficult to implement because of their needs for social and infrastructure spending.

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 analysing their respective advantages and disadvantages. More precisely, capital controls may work in the case for loans channelled through the banking system, whereas loans lent to non-financial companies directly may require capital controls, if they become too large.

The debate on the effectiveness of capital controls regained momentum in the aftermath of the 2008-09 global financial crises. This is due to the fact that a number of emerging and developing countries decided to impose or strengthened different forms of capital controls to respond to the sharp appreciation of their currencies caused by the quick bounce back of capital inflows from their slump in 2008 till 2013. However, the debate on the effectiveness of capital controls is far from settled. Nevertheless, a broad consensus is emerging that capital controls may be a good tool to moderate the impact of capital flows, but they should be used in coordination with other macro-prudential tools to prevent asset inflation and overvaluation. Supporters see capital controls as an important tool to prevent the build-up of financial sector risks, as well as to reduce the damages associated to capital flow sudden reversals.

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 favoured capital account liberalisation. However, in the aftermath of the 2008-09 global financial crises, the IMF decided to endorse the use of capital controls under certain circumstances.

According to the new IMF official position, capital controls could be used when countries have little room for economic policies such as lowering interest rates or when sudden increases of capital inflows threaten financial stability. However, the IMF stressed that capital controls should be targeted, temporary and take care of not discriminating between residents and non-residents.

In the case of LICs, little work has been done on the growth benefits of different types of private capital flows, especially bond flows and international bank lending. This is particularly worrying since bond flows are becoming an increasingly important part of private capital flows in a number of sub-Saharan African low-income economies. Moreover, given that portfolio investment has been found to be much more volatile than FDI in LICs, it is important to identify the threshold beyond which the risks associated to high volatility of portfolio investment flows offset the growth benefits

1 Introduction

In recent years, there has been a revival of interest on the growth impacts and risks associated to private capital flows in low-income economies (LICs), as well as on capital account management tools and their effectiveness. This is due to the fact that since the 1990s the trend and composition of private capital flows directed to LICs have changed quickly and significantly thus raising new opportunities and challenges as well.

In the early 1990s, LICs experienced massive inflows of private capital, through a process of rapid financial sector liberalization (Goldin and Reinert 2013). Nevertheless, private flows collapsed after 1997 and then started to recover in the early 2000s (Griffith-Jones and Leape 2002). Since then they experienced an extraordinary surge reaching peak values in 2007, before the 2008-09 global financial crisis hits. After a partial rebound in 2010, private capital flows declined again in 2011 due to the euro zone crisis but they are expected to recover in 2013 (Massa et al. 2012a, 2012b). Note that the magnitude of increases and decreases of private capital flows over time has been different across types of flows. For example, during the 2008-09 global financial crisis portfolio equity flows experienced dramatic drops and even reversed in some LICs, while foreign direct investment (FDI) remained more resilient to the adverse shocks of the crisis (te Velde et al. 2010).

The composition of private capital flows has also changed quickly. While in the 1970s and 1980s bank lending was the most important component of foreign capital for developing economies, since the 1990s FDI and portfolio investment (equity and bond flows) became dominant. Note also that, over the last few years, bond flows are becoming an increasing important part of private capital flows in developing regions such as Sub-Saharan Africa (SSA), where most of LICs are located. Indeed, as highlighted by Stiglitz and Rashid (2013) and by Hou et al. (2013), in SSA there was a rapid scaling up of bond flows between 2011 and 2013. By February 2013, Ghana, the Democratic Republic of the Congo, Côte d'Ivoire, Senegal, Angola, Nigeria, Namibia, Zambia, and Tanzania had collectively raised US\$ 8.1 billion from their first sovereign-bond issues (Stiglitz and Rashid 2013).

The push factor in these flows has been the search for alternative, high yielding investments by international funds including a number of newly established “frontier market” funds, but the pull factor – reflected in the concentration of this issuance in countries with strong macroeconomic fundamentals and growth expectations - has also been important. Such countries have been successful because of their stronger macroeconomic fundamentals and more stable political environment that make them attractive to international investors.

However, while the ability to tap into international capital markets by these countries is positive, risks are attached. Firstly, private sector issuances had lower maturity and higher costs than previous concessional financing. Indeed, the 2013 issues had an average maturity of 8.7 years, compared with 28 years for existing debt, and an average coupon rate of 8.2 Also, issuing yields can be volatile and

maturities short, relative to long-term government financing needs, reflecting their non-concessional terms (Hou et al, 2014; Stiglitz & Rashid, 2013). Bonds yields also increased in 2013 due to speculation relating to QE unwinding (Hou et al, 2014). More broadly. Outflows in some LICs lead to depreciations of currencies, such as the Ghanaian cedi.

In light of the above, there is a need for a better understanding of the implications of surges, declines or even reversals and sudden stops of different types of private capital flows as well as of the adequateness of the existing different tools available to manage capital flows. The aim of this paper is to review the literature focusing on the growth benefits and risks of private capital flows, and on capital account management in low-income countries. Source papers include professional journal articles, refereed research studies, empirical reports, and policy briefs. Since the literature relating to private capital flows and capital account management is voluminous, we use a number of decision rules in choosing articles. First, given the aim to provide an understanding of the main issues in private capital flows and capital account management in LICs, we include mostly papers dealing with low-income countries specifically or with the sub-Saharan African region where the majority of low-income countries are located. Therefore, we screen papers using numerous variants of keywords, focusing specifically on LICs and SSA countries. Where information is scarce or not available at all with respect to those countries, evidence is drawn from the experience of emerging economies. Note that LICs can be defined according to several different country classifications. In this paper we rely to the possible extent on the World Bank's country classification¹. Second, because private capital flows and capital account management tools are changing fast in today's environment, we use mostly sources published over the last decade, except where articles are needed specifically for their historical relevance and perspective on broad issues relating to private capital flows and capital account management.

The paper is structured as follows. Section 2 analyses the growth benefits and the risks associated to private capital flows directed to low-income countries or sub-Saharan African economies. Section 3 provides an overview of the existing capital account management tools highlighting their main advantages and disadvantages. Examples of LICs where the different capital account management tools have been implemented are reported to the possible extent. In this section, the effectiveness of capital account management tools is also discussed. Section 4 concludes.

¹ See <http://data.worldbank.org/about/country-classifications/country-and-lending-groups>

2 Private capital flows: benefits versus risks

2.1 Growth benefits of private capital flows

The empirical literature on the effects of private capital flows on economic growth is vast and can be divided into two strands. The first investigates individually the growth impacts of specific types of private capital flows (i.e. FDI, portfolio equity flows, bond flows, cross-border bank lending). The second, instead, looks jointly at the effects on growth of different private capital flows in a common framework. Nevertheless, only few studies have a specific focus on low-income economies, and these studies have been unable to provide conclusive evidence about the positive impact of private capital flows on economic growth. Indeed, as it is reported in what follows, some papers show that private capital flows enhance economic growth, while others report that there is no direct evidence of such a relationship. Some papers also find that private capital inflows have a negative impact on economic growth. Note that there are also few papers assessing the impact of private capital flows on volatility of growth.

Analyses of growth impacts of specific types of private capital flows

Much of the research studies assessing the impacts on growth of individual types of private capital flows in LICs focus on foreign direct investment (FDI). As it is explained below, most of the studies find a positive relationship between FDI inflows and growth, although there are a few exceptions. The main channels through which FDI may affect growth are capital formation, technology transfer and spillover, human capital enhancement (i.e. augmentation of the level of knowledge in the host country through labour training and skill acquisition), and increased competition². The papers assessing the relationship between FDI and economic growth use mainly three methodologies: cross-country analysis, panel data analysis, and time series analysis.

Cross-country studies generally find evidence of a positive impact of FDI on economic growth in low-income countries. For example, Seetanah and Khadaroo (2007) find a positive and significant coefficient of FDI from the cross section analysis of the FDI-growth nexus on a sample of 39 SSA countries over the period 1980-2000. By using a cross-country multivariate regression on a sample of 44 SSA countries over the period 2000-2007, Deléchat et al. (2009) also find that FDI are positively and significantly associated with growth. Note that the same result is obtained by using total capital flows (FDI flows, debt flows, and portfolio flows) instead of FDI.

Findings on the relationship between FDI and growth are more mixed in panel studies. Indeed, on the one hand several works find that FDI is growth conducive in low-income countries. For example, Toulaboe et al. (2009) by using an OLS

² The literature on the channels through which FDI affects growth is vast. For a comprehensive survey of this literature we refer the interested reader to De Mello (1997) and Ozturk (2007), among others.

regression find that FDI is significantly and positively correlated with economic growth in 14 low-income countries over the period 1978-2004. Moreover, according to their findings, there is a strong complementarity effect between FDI and human capital, that is the contribution of FDI to economic growth is enhanced by its interaction with the level of human capital. The latter result is not confirmed by Adefabi (2011) who finds that FDI can affect growth positively in a sample of 24 sub-Saharan African countries over the period 1970-2006, but not through the accumulation of human capital. Strong support for the hypothesis that FDI has a positive impact on economic growth in low-income countries is also provided by Seetanah and Khadaroo (2007). Through different econometric techniques including random effect panel analysis and GMM, the authors show that FDI is an important element in explaining economic performance of Sub-Saharan African countries. A similar result is also obtained by Ndambendia and Njoupuognigni (2010) for a sample of 36 SSA countries over the period 1980-2007, as well as by Abdullahi et al. (2012) for a sample of 15 selected African countries from 1990 to 2009.

Nevertheless, weaker evidence on the positive effect of FDI on economic growth of Sub-Saharan African countries is found by Sukar et al. (2007). Moreover, Dabla-Norris et al. (2010) by using the system GMM approach for a sample of 52 low-income countries over the period 1974-2008 find that FDI appears to have no significant impact on economic growth. However, once the sample is split between fuel-exporting countries and non-fuel exporting countries, FDI is found to be significant and positively associated with growth in non-fuel exporting countries, thus suggesting that FDI in the extractive sector may have limited beneficial spillovers for growth in low-income economies. The authors also find that the impact of FDI on growth in non-fuel exporting countries has strengthened during the recent globalization period (1989-2008) when FDI to low-income countries took off. Therefore, growth appears to be increasingly associated with higher FDI inflows. The results also show that in countries with higher levels of financial sector development, more diversified economic structures, better infrastructure, stronger institutions and greater macroeconomic stability, FDI inflows lead to higher growth benefits. A similar finding is also obtained by Lumbila (2005) who shows that developed infrastructure, lower country risk, a stable macro environment as well as advanced human capital may enhance the positive impact of FDI on growth in a sample of 47 African countries.

There are also a number of panel studies that find no effect of FDI on growth in low-income countries. For example, Adams (2009) looks at 42 SSA countries over the period 1990-2003 and finds that FDI has no significant positive impact on economic growth when using a fixed effects panel analysis. By using OLS and least absolute deviation (LAD) estimation methods, Naudè (2004) also finds that FDI has no significant positive effect on economic growth in a selected sample of 45 African countries over the period 1970-1990. Note, however, that the coefficient of FDI becomes significant when more advanced econometric approaches such as the GLS-random effects, fixed effects and the dynamic GMM-estimator are used.

Several studies use co-integration and causality analysis to investigate the long-run relationship between economic growth and FDI for individual low-income economies. As it is explained below, in most cases a long-run causal relationship between growth and FDI is found, although there are a few exceptions and evidence on the direction of causality is rather mixed. Notably, in a few cases different results are found for the same countries. Further analysis of the reasons behind these differences in conclusions is needed. Adhikary (2011) examines the linkage between FDI and economic growth rates in Bangladesh over the period

1986-2008, using time series analysis. His results reveal that FDI has a significant positive effect on changes in real GDP, and that there is a unidirectional causality running from changes in FDI to economic growth rates. Similar results are obtained by Iftikhar (2012) who uses an extended sample of data over the period 1975-2009 and finds that there is a one-way causality relationship from FDI to economic growth in Bangladesh. On the other hand, Rahman (2009) finds no significant long-run causal flows from FDI to real GDP of Bangladesh. No direct causal relationship between GDP growth and FDI in the case of Bangladesh is also found by Dhakal et al. (2007). This result is in line with those obtained by Shimul et al. (2009) and Hossain and Hossain (2012), who also find no long-run relationship between FDI and economic growth in Bangladesh, although there seems to be evidence of a short run dynamic relation.

Moving to African low-income economies, a positive impact of FDI on GDP growth in Uganda has been found by Obwona (2001). Esso (2010), instead, examines the relationship between FDI and economic growth in the case of ten SSA countries, including 3 LICs (i.e. Congo, Kenya and Liberia). Results show that there is a long-run relationship between FDI and economic growth in low-income countries such as Kenya and Liberia, and that causality runs from FDI to economic growth in Kenya but not in Liberia where growth causes FDI. In the case of Congo, no long-run relationship is found between FDI and economic growth. A long-run positive relationship between FDI and economic growth in Liberia is also found by Adnan (2011), according to whom a 1 percent increase in FDI increases economic growth by about 0.06 percent. By using a panel Granger causality analysis, Tekin (2012) shows that FDI Granger-causes GDP in Benin and Togo, while GDP Granger-causes FDI in Burkina Faso, Gambia, Madagascar and Malawi. By assessing the causal relationship between FDI and growth in five African countries (Ghana, Kenya, Nigeria, South Africa and Zambia), Ahmed et al. (2011) find that only in the case of Kenya FDI has a negative impact on economic growth. Finally, Lamine and Yang (2010) find that in Guinea there is evidence of the existence of causality running from GDP to FDI, but not vice versa. By using cointegration analysis and Granger causality tests, Rusuhuzwa and Baricako (2009) show that FDI does not have a significant impact on economic growth in Burundi and Rwanda, probably due to the fact that the share of FDI in the two countries are still limited.

Differently from the studies focusing on the growth impact of FDI, the literature examining the effects of other types of private capital flows on economic growth in low-income countries does not focus on portfolio equity flows or debt flows individually, but rather investigates simultaneously the growth impact of different types of flows as described below.

Joint analyses of growth impacts of different types of flows

A number of authors have attempted to disentangle the effects of different types of private capital flows in low-income economies by looking at them in a unified empirical framework. For example, de Vita and Kyaw (2009), using a dynamic panel model (GMM estimation approach) on a large sample of 126 developing countries for the period 1985-2002, examine the impact of FDI and portfolio investment flows on the economic growth of low, lower-middle and upper-middle income countries. According to their findings, in low-income countries FDI appears to have a negative and significant impact on economic growth, while portfolio investment flows have a negative but not significant growth impact. Note, however, that the FDI coefficient becomes positive and significant in the sub-sample of lower-middle and upper-middle income countries, and the portfolio investment coefficient is positive and significant in the sub-sample of upper-middle income countries. This suggests that only developing countries that have

reached a minimum level of economic development and absorptive capacity are able to capture the growth-enhancing effects of both forms of investment inflows. These results are in line with those by Choong et al. (2010). Indeed, by using a GMM panel data model on a sample of 16 low-income countries from 1988 to 2006, they find that FDI, portfolio investment as well as foreign debt have a negative and significant impact on economic growth. However, it is found that the effect of all private capital flows on growth become positive in low-income countries with well-developed financial sectors. Using a sample of 80 countries (31 high-income countries, 25 middle-income countries, and 24 low-income countries) over the period 1976-2007, Shen et al. (2010) find that FDI has a positive effect on growth, while portfolio investment (i.e. bond and equity flows) has a negative effect on growth. Mody and Murshid (2011) analyse the impact of net private capital inflows (i.e. the sum of net direct investment, net portfolio flows, and other net private capital flows) on growth in a sample of 61 countries including LICs in Latina America and the Caribbean as well as in sub-Saharan Africa. Their findings show that private capital inflows are associated with higher growth in countries with low growth volatility. On the other hand, inflows of private capital have a positive but not statistically significant relationship with growth in countries with high growth volatility. Interestingly, the authors also find that private capital inflows are not correlated with country growth volatility.

These findings, however, may not be considered conclusive since there are a number of studies that find a positive and significant impact of different types of private capital flows on economic growth in LICs. For example, Brambila-Macias and Massa (2010) investigate the long-run relationship between economic growth and FDI, cross-border bank lending, bonds flows, and portfolio equity flows on a sample of selected sub-Saharan African countries over the period 1980-2007. By using a dynamic OLS methodology (DOLS), they show that FDI and cross-border bank lending exert a significant and positive impact on sub-Saharan Africa's growth, whereas portfolio equity flows and bonds flows have no growth impact. The positive and significant impact of FDI and cross-border bank lending is in line with the results obtained considering the whole sample by Brambila-Macias et al. (2011), who also find that FDI has a larger impact than cross-border bank lending on growth in African economies. However, when the sample is split between oil and non-oil countries, the authors find that cross-border bank lending appears to exert a negative and significant impact on growth in the sub-sample of natural resource economies. This may be explained by the fact that oil producer countries are characterized by relatively weak institutions (resource curse) and have less incentive to invest in financial sector reforms and regulation than non-oil countries. In the long-run, these factors might expose resource rich countries to international banking risks, including potential additional transmission channels of systemic risk across countries, and so are likely to have a negative impact on economic growth. Reisen and Soto (2001) also measure the independent growth effect of bond flows as well as FDI, portfolio equity flows, official flows and short-term and long-term bank lending on a sample of 44 countries including few LICs, over the period 1986-1997. Using GMM panel data analysis, they find that FDI and portfolio equity flows exert a significant impact on growth, whereas bonds and official flows do not have any significant effect on growth. Furthermore, short- and long-term bank lending is found to negatively affect economic growth in the recipient country, except when local banks are sufficiently capitalised.

Table A1 in the Appendix summarizes the main findings of the above studies on the impact of private capital flows on economic growth in LICs.

2.2 Risks of private capital flows

Private capital flows are a double edged sword. As discussed above, under certain conditions and depending on the type of flows, they may contribute to foster economic growth in low-income countries. However, sudden increases or drops in private capital flows may also create upheavals in recipient economies, especially in the most fragile LICs.

Kawai and Takagi (2008) argue that the risks stemming from private capital flows can be classified into three categories: (i) macroeconomic risks; (ii) financial stability risks; and (iii) risk of capital flow reversal/sudden stop. The macroeconomic risks are associated to sudden surges in capital inflows, which can lead to appreciation and volatility of real exchange rates as well as to inflation, thus affecting domestic policy objectives such as export promotion, exchange rate stability and national price stability. Financial stability risks, instead, refer to the adverse impacts that surges in capital inflows may have on asset prices and credit. Finally, the risk of a sudden capital flow reversal could lead to depletion of reserves and sharp currency depreciations; it could also cause a currency crisis that may be linked to a banking crisis (Reinhart and Rogoff 2008).

Macroeconomic Risks

Surges in capital inflows may lead to significant macroeconomic volatility through two main channels: the real exchange rate and inflation. Looking at past experiences it appears that the effects of surges in private capital inflows on the real exchange rate have been much more significant than those on inflation (Grenville 2008; Schadler 2008). Therefore, most of the existing empirical studies have focused on the relationship between increases of private capital inflows and the real exchange rate. Several studies have examined this issue by taking into account samples of developing and emerging economies (see, e.g., Calvo et al. 1993, Fernandez-Arias and Montiel 1995, and Edwards 1998 for empirical evidence on Latin America). For example, Combes et al. (2011), by using an unrestricted error correction autoregressive distributed lag (ARDL) model on a sample of developing countries over the period 1980-2006, find that surges in different types of private capital flows has an impact on the real exchange rate. In particular, portfolio investment is found to have the highest real exchange rate appreciation effect, followed by FDI and bank loans. The authors also find that maintaining a flexible exchange rate provides hedge against real appreciation, while in the presence of fixed exchange rate regimes, surges in private capital flows tend to generate inflation. On the other hand, by focusing on the main capital importing Asian and Latin American emerging economies, Athukorala and Rajapatirana (2003) find that surges in ‘other (non-FDI) capital flows’ over the period 1985-2000 lead to an appreciation of the real exchange rate, while increases in FDI lead to a depreciation of the real exchange rate³. The authors also shed light on the fact that the degree of appreciation caused by capital inflows

³ The authors argue that this finding is consistent with their hypothesis that FDI tends to have a more tradable bias compared to the other types of capital flows, although further investigation is needed. In particular, they argue that “Compared to other flows, FDI in developing countries has a general tendency to concentrate more in traded goods sectors. Moreover with the on-going process of transformation in international production and rapid economic opening in investment receiving (host) countries there has been a significant increase of FDI participation in export-oriented production. Thus the pressure on non-traded goods prices resulting from FDI-related activities is presumably lower compared to that arising from the other forms of capital inflow. Moreover, FDI is also not as volatile as the other short-term flows. Therefore any possible ratchet (lingering) effect on the real exchange rate resulting from upswings in inflows is likely to be less important in the case of FDI.” (Athukorala and Rajapatirana 2003, p. 11).

was higher in Latin American countries than in Asian economies, probably due to differences in country specific factors and in the macroeconomic policy histories of the two regions. By taking into account both developing and developed economies from 1995 to 2006, Saborowsky (2009) also finds that FDI inflows lead to real appreciation but this effect is found to be significantly attenuated if an economy disposes of a deep financial sector as well as a large and active stock market.

Although historically the incidence of capital flows bonanzas appears to have been lower in LICs (and SSA) than in other country income groups (and regions) (Reinhart and Reinhart 2008), a number of studies have also focused on the impacts of surges in capital inflows on macroeconomic volatility in these economies. Indeed, by looking at a sample of selected low-income countries over the period 1980-2008, Reinhart and Reinhart (2008) show that there is a cumulative exchange rate appreciation up to the last year of capital flow bonanza and a sharp depreciation afterwards. On the other hand, inflation tends to decline before the surge of capital inflows and then to increase. Moreover, the authors argue that low (and middle) income countries record the highest increase in probabilities of currency and inflation crises around periods of capital inflows bonanza (where a currency crisis is defined as an annual depreciation versus the relevant anchor currency of 15 per cent or more, while an inflation crisis is defined as an annual inflation rate of 20 per cent or higher). Among SSA countries, the likelihood of currency and inflation crises around surges of capital flows in the period 1960-2007 appears to be particularly high in the case of Zimbabwe and Zambia respectively (Reinhart and Reinhart 2008). Empirical evidence of the effects on the real exchange rate of surges in private capital flows in sub-Saharan Africa is also provided by Lartey (2007). By using dynamic panel data techniques on a sample of 16 SSA economies over the period 1980-2000, the author shows that increases in FDI inflows lead to real appreciation, while changes in ‘other capital inflows’ do not appear to affect the real exchange rate. The 2008 IMF Sub-Saharan Africa Regional Economic Outlook (IMF 2008) also reports that surges of capital inflows in Uganda, Tanzania and Zambia have caused appreciation pressures on their currencies.

Financial Stability risks

Capital inflows may enhance financial fragility by leading to credit booms as well as to rapid increases in asset prices.

To our knowledge, the issue of financial stability risks in low-income countries stemming from capital inflows is still relatively unexplored by the empirical economic literature. However, there are a few studies focusing on developing countries, including some LICs and emerging markets, from which lessons can be drawn. Reinhart and Reinhart (2008), for example, examine the impact of capital inflow bonanzas on equity prices for a sample of 66 countries including some African LICs such as the Central African Republic, Kenya, and Zimbabwe, from 1980 to 2007. Their findings show that stock prices typically tend to boom at the time of the bonanza, and then they significantly decline during the following four years. Therefore, equity price bubbles in bonanza periods are typically associated with a higher incidence of financial crises. The linkage between capital inflow bonanzas and financial crises is also confirmed by Caballero (2012) in a study focusing on over one hundred countries including several LICs during 1973-2008. In the case of developing countries, the author finds that windfalls of capital inflows are associated with a nine times higher likelihood of banking crises, in the absence of a lending boom. The strongest association is found in the case of surges in portfolio flows and to a lesser extent debt flows. Stylized facts reported

by Reinhart and Calvo (1999) also show that capital inflow surges have led to stock market booms in South Africa, Zimbabwe and Nigeria in the 1990s.

The relationship between capital inflows and credit booms has recently received a lot of attention. Furceri et al. (2011) analyse the dynamic response of domestic credit to capital inflow shocks for a sample of developed and developing countries (included a few LICs) over the period 1970-2007. They find that capital inflow shocks tend to lead to a 2 percent increase in the credit to GDP ratio in the first two years after the shock and that the effect is largest in the case of shocks in debt inflows. Seven years after the shock, the ratio of credit to GDP is found to decline by 4 percent. The fact that surges in capital inflows lead to credit expansion is also found by Magud et al. (2012) for a sample of 25 emerging economies in Asia, Emerging Europe and Latin America. The impact is found to be stronger in the presence of inflexible exchange rate regimes. By using quarterly data for 71 developed and emerging economies from 1975q1 to 2010q4, Calderon and Kubota (2012) show that increases in gross private capital flows (in particular gross private other investment inflows and to a lesser extent gross portfolio investment inflows) enhance the likelihood of credit booms. By looking at a sample of 41 emerging markets over the period 2003-07, Ostry et al. (2011) also find that there is a strong association between capital inflows and credit booms. In particular, if booms are defined as the top decile, half of credit booms appear to be associated with capital inflow surges. If booms are defined as the top quartile, 90 per cent of booms are associated with surges in inflows.

Capital flow reversal/sudden stop

In the literature there are several theoretical and empirical papers highlighting that the likelihood that a country experiences a capital flow reversal or a sudden stop depends on the composition of its capital flows. The implicit assumption is that different types of capital flows are characterized by different levels of volatility, and that highly volatile (“hot”) capital flows have a high potential for reversal or sudden stop in a crisis.

Conventional wisdom says that short-term flows are generally more volatile than long-term ones, and that FDI is the least volatile flow especially compared to short-term loans and portfolio investment. A number of studies confirm these views. Dadush et al. (2000) argue that among all types of private capital flows, short-term loans are the most likely to reverse in the event of a crisis. This is due to the fact that their withdrawal costs are minimal compared to those of FDI that requires the sale of plants and machineries in case of liquidation, as well as of stocks and bonds whose sale usually involves a loss for the seller. In line with this, Milesi-Ferretti and Tille (2011) find that among all types of capital flows, during the 2008-09 global financial crisis banking flows experienced the most pronounced reversal. Frankel and Wei (2004) also stress that a predominant short-term composition of capital flows significantly raises the probability of a crisis due to their high volatility. The fact that FDI are the most stable type of capital flows is proved by a variety of empirical (Sarno and Taylor 1999; Fernandez-Arias and Hausmann 2000; Wei 2001, 2006; Levchenko and Mauro 2007; Tong and Wei 2009; Sula and Willett 2009; Sula 2010; Globan 2012; among others) and theoretical (Goldstein and Razin 2006; Albuquerque 2003) studies. Nevertheless, there are also studies that do not reach the same conclusions. For example, Claessens et al. (1995) finds that FDI is as volatile as the other types of flows, and that there is no significant difference between short-term and long-term flows. The IMF (1999) also finds that long-term flows have been as volatile as short-term flows during the 1980s and 1990s. Carlson and Hernandez (2002) and Gabriele et al. (2000) conclude that no single type of capital flows could be considered responsible of causing the crises in the 1990s since they all

contributed to enhance instability because of their volatility. A hypothesis could be that the hierarchy of volatility is decreasing in time, as derivatives markets develop more (see Dodd and Griffith-Jones 2007).

Moving to the volatility of different types of capital flows specifically in LICs, it is important to highlight that to our knowledge there is so far no quantitative study assessing the risk of capital flow reversal or sudden stop exclusively in low-income economies. Nevertheless, stylized facts show that FDI tends to be more stable than portfolio investment and short-term loans, which are subject to sudden reversals. A recent UNDP (2011) study reports that between 1995 and 2008 in LICs the volatility of portfolio investment was significantly higher than that of FDI (Table 1). At the country level, the highest degrees of volatility of FDI were experienced by African countries such as Sudan, Sierra Leone, Cameroon, Niger, Mali, Angola, Senegal and Kenya; while the volatility of portfolio investment was more heterogeneous across developing regions with Senegal, Pakistan, and Guyana experiencing the highest degrees of volatility (Table 2). The data also shed light on the fact that over the period of analysis (1995-2008) FDI inflows were significantly more volatile for LICs compared to middle-income and high-income developing countries, while portfolio investment appears to have reached the highest levels of volatility in middle-income and high-income developing countries with LICs coming only at the third place (see Table 1).

Table 1: Volatility of FDI inflows and portfolio investment by group of countries, 1995-2008

Group of countries	FDI average absolute change	Portfolio investment average absolute change
High-income DC	176%	890%
Middle-income DC	146%	5,009%
Low-income DC	207%	561%

Source: Adapted from UNDP (2011).

Note: DC = developing countries.

Table 2: Volatility of FDI and portfolio investment in LICs by country

Country	Developing region	Average absolute annual rate of change in FDI	Average absolute annual rate of change in portfolio investment
Angola	Africa	287%	
Bangladesh	A&P	183%	217%
Benin	Africa	89%	315%
Cambodia	A&P	45%	
Cameroon	Africa	390%	
China	A&P	16%	258%
Cote d'Ivoire	Africa	24%	177%
Ghana	Africa	73%	
Guyana	LAC	34%	622%
India	A&P	44%	156%
Indonesia	A&P	194%	96%
Kenya	Africa	218%	262%
Mali	Africa	347%	296%
Mongolia	A&P	64%	
Mozambique	Africa	70%	
Nicaragua	LAC	32%	234%
Niger	Africa	351%	
Nigeria	Africa	36%	

Pakistan	A&P	49%	843%
Philippines	A&P	108%	235%
Rwanda	Africa	113%	
Senegal	Africa	236%	4568%
Sierra Leone	Africa	681%	
Solomon Islands	A&P	170%	
Sri Lanka	A&P	47%	80%
Sudan	Arab States	2081%	
Tanzania	Africa	30%	
Togo	Africa	34%	55%
Uganda	Africa	25%	
Vietnam	A&P	29%	
Yemen	Arab States	312%	

Source: Adapted from UNDP (2011). Notes: A&P = Asia and Pacific; LAC = Latin America and Caribbean.

Stylized facts related to the 2008-09 global financial crisis confirm that in LICs short-term loans and portfolio investment are highly volatile and subject to sudden reversals or stops. Bhinda and Martin (2009), for example, report that portfolio equity flows in Africa turn sharply negative in 2008, and argue that historical greater volatility of loans compared to other financing has been confirmed in the global financial crisis. In a similar way, te Velde et al. (2009) note that in 2008 low-income economies such as Bangladesh, Kenya and Uganda experienced significant portfolio investment flow reversals, while FDI inflows have been less volatile. During the global financial crisis, the IMF (2009) found evidence of portfolio inflow reversals even in LICs with capital restrictions (e.g. Kenya and Tanzania). Bond issuance has also suddenly stopped in sub-Saharan African countries such as Tanzania, Kenya and Uganda (see Griffith-Jones and Ocampo 2009; te Velde et al. 2009; Brambila-Macias and Massa 2010; among others).

3 Managing capital flows

3.1 Capital account management tools

3.1.1 Capital controls

Capital controls are restrictions on the level or composition of foreign capital into or out of a country. According to Magud and Reinhart (2006), there are four reasons that drive countries to adopt capital controls:

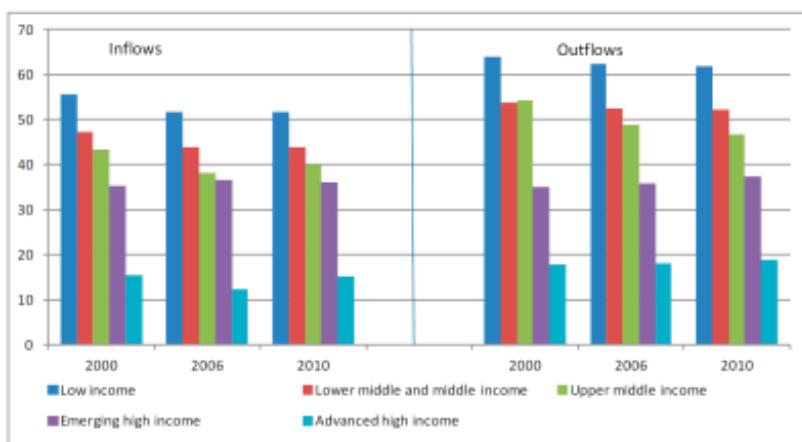
1. *fear of appreciation*: massive and rapid capital inflows may generate upward pressure on the real exchange rate, damaging export competitiveness;
2. *fear of 'hot money'*: short-term capital inflows may cause destabilising distortions and increase exposure to capital flow reversal;
3. *fear of large inflows* that can disrupt the financial system by leading to significant inflationary consequences, feeding unsustainable asset price bubbles, and encouraging excessive risk-taking by domestic intermediaries;
4. *fear of loss of monetary autonomy*: the so-called ‘trilemma’ of international macroeconomics means that a country cannot achieve simultaneously perfect capital mobility, monetary policy autonomy and exchange rate stability. So, to avoid exchange rate appreciation and sustain an independent monetary policy, a country should give up full capital mobility.

Several other arguments have been advanced to justify capital controls. For example, the need to compensate for financial market imperfections resulting from asymmetric information problems and herding behaviour, to protect a fixed exchange rate regime, or to support policies of financial repression to provide cheap financing for government budgets and priority sectors (Johnston and Tamirisa 1998). Korinek (2011) also reports that capital controls can be used for prudential reasons. In other words, capital controls may represent a useful tool to prevent the build-up of risks such as the issuance of excessively risky financial instruments or the engagement in excessive short-term borrowing, which may lead to severe financial crises. Nevertheless, Johnston and Tamirisa (1998) highlight that the prudential role of capital controls is rather limited, since by preventing portfolio diversification and leading to issues of control avoidance through more risky and less regulated instruments or institutions, they may enhance financial fragility. A number of other key political and structural determinants of capital controls are identified by Grilli and Milesi-Ferretti (1995). According to the authors, capital controls are more likely to be put in place in poorer countries with a less developed tax system, in more closed economies, as well as in countries with a larger share of government in economic activity, and with hardly independent central banks. Moreover, Bai and Wei (2001) found that capital controls are more likely to be introduced in countries characterized by higher degrees of corruption that make more difficult to collect formal taxes. Indeed, as corruption increases more tax revenue are stolen. As a consequence, it becomes more desirable to finance the public good through capital controls rather than through direct taxation. Among the analysed developing countries, the

authors find that sub-Saharan African countries are more likely to implement capital controls than East Asian and Latin American countries. This result is in line with Grilli and Milesi-Ferretti (1995) who also find that controls are more likely in Africa than in Latin America.

Capital controls can be placed on both capital inflows and outflows. Ariyoshi et al. (2000) argue that controls on inflows are typically introduced to counteract the macroeconomic implications of large and volatile capital inflows. On the other hand, controls on outflows are mainly applied to short-term capital transactions to avoid that speculative flows undermine the stability of the exchange rate and deplete foreign exchange reserves. Data reported by the IMF (2012a) show that among the different country-income groups, LICs account for the highest shares of capital inflows and outflows subject to controls (Figure 1). Moreover, from Figure 1 it appears that in low-income countries the use of capital controls on outflows is more widespread than that on inflows. Note also that until the mid-2000s the use of capital controls in LICs has slightly declined. However, it seems that this process of modest liberalization has stopped following the onset of the global financial crisis.

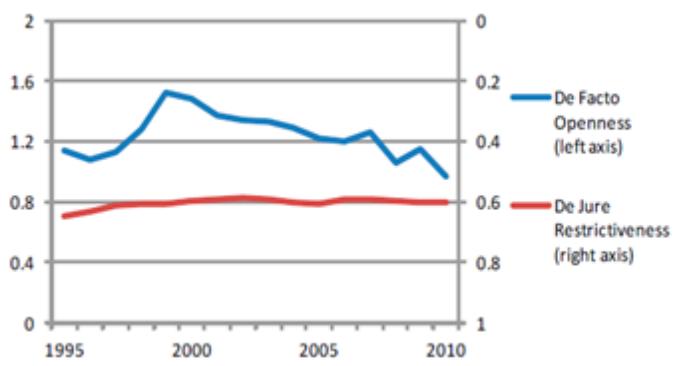
Figure 1: Controls on capital inflows and outflows by country-income group, 2000-2010 (share of capital flow transactions subject to controls)



Source: IMF (2012a).

This is confirmed by the trends of the measures of *de jure* restrictiveness and *de facto* openness in Africa, which accounts for the highest share of LICs (Figure 2).

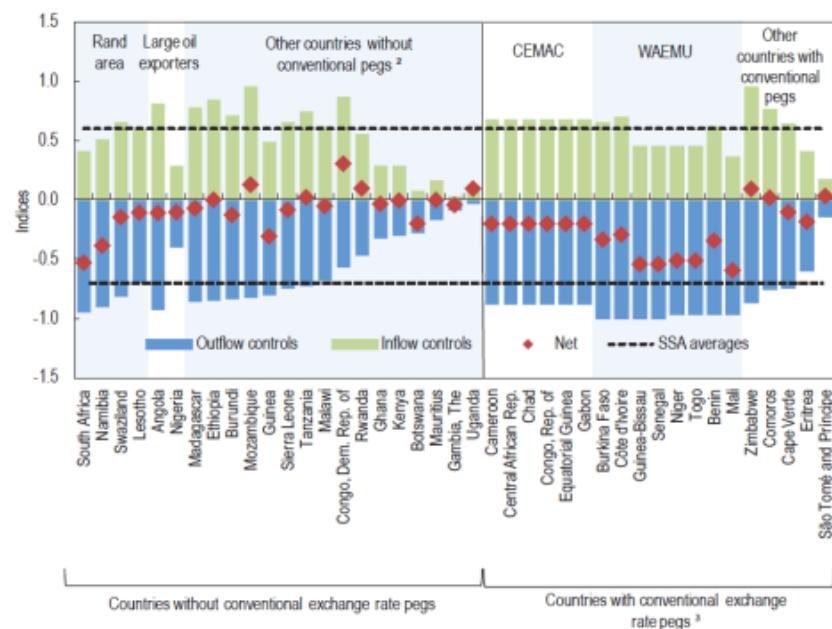
Figure 2: Emerging and developing Africa: de jure restrictiveness and de facto openness of capital flows, 1995-2010



Source: IMF (2012a).

The IMF (2012b) also sheds light on the fact that in Sub-Saharan Africa the prevalence of capital controls on inflows and outflows is rather heterogeneous across LICs, with countries such as Zimbabwe and Mozambique experiencing the highest levels of prevalence of capital inflow controls in the region, and low-income countries in the West African Economic and Monetary Union (WAEMU) (e.g. Burkina Faso and Guinea Bissau) experiencing the highest levels of prevalence of capital outflow controls (Figure 3). The Gambia and Uganda are among the LICs experiencing the lowest levels of prevalence of capital inflow and outflow controls (Figure 3)⁴.

Figure 3: Sub-Saharan Africa: Prevalence of capital inflow and outflow controls, June 2011¹



Source: IMF (2012b).

Notes: ¹The IMF de jure capital control indices average binary indicators of restrictiveness in 62 categories of capital transactions. This broad restrictiveness index can have a value between zero and

⁴ Note that these indicators should be used with caution since they rely on quite strong assumptions.

¹, and higher values represent more restricted cross-border capital flows. The indices measure the prevalence of controls, not the intensity, severity, or degree of enforcement of these controls. Countries displayed in order of higher to lower indices of outflow controls within each group.

² Includes all SSA countries whose exchange rate regime is classified as either a conventional peg or a currency board, according to the IMF's 2011 Annual report on Exchange Arrangements and Exchange Restrictions (AREAER).

³Excludes countries in the rand area, which in the chart are grouped along with South Africa.

Capital controls can be directed at different types of capital flows (FDI, portfolio investment or bank loans) or they can target different types of actors such as governments, individuals, companies or banks. Furthermore, restrictions on cross-border capital flows can take several different forms. Ariyoshi et al. (2000) provide a detailed description of the typology of controls. In broad terms, there are two forms of capital controls: (i) quantity-based capital controls (also called direct or administrative controls); and (ii) price-based capital controls (also known as market-based or indirect controls). The former aims to affect directly the volume of capital transactions by imposing quantitative limits, (rule-based or discretionary) approval procedures or by completely prohibiting cross-border flows. Price-based capital controls, instead, aim to discourage cross-border flows by making them more costly to undertake through dual or multiple exchange rate systems, explicit or implicit taxation (e.g. sort of national Tobin tax), or through other indirect regulatory controls which allow to discriminate between different types of investors or transactions (e.g. asymmetric open limit positions, or reporting requirements). Note that price-based capital controls may affect both the price and the volume of capital flows. Moreover, they are usually mixed with some quantity-based measures as it happened in Malaysia, Chile and Colombia (Ocampo et al. 2008). Among price-based capital controls, a widely used measure is the so-called unremunerated reserve requirement (URR), which requires that a deposit in foreign or domestic currency is lodged at zero interest with the Central Bank for a minimum period, in an amount proportional to the size of the inflow. This deposit creates an additional cost to external financing (implicit taxation), thus discouraging the inflows.

Several developing countries have used the above forms of capital controls over time. In particular, China and India have adopted quantity-based capital controls (Ocampo et al. 2008). Price-based measures were used by Chile, Colombia, Argentina, Thailand, and Malaysia (*Ibid*). Countries such as Brazil, Chile and Malaysia have implemented price-based controls supplemented by quantity-based measures (Ariyoshi et al. 2000). Moving to sub-Saharan Africa, Ghana designed price-based capital controls, similar to those used by Chile in the 1990s (Chea 2011). Moreover, although the region has moved toward more open capital accounts over time (IMF 2011), the IMF (2008) and Murinde (2009) highlight that in the SSA there are still administrative or bureaucratic procedures in place that limit capital flows. Table A2 in the Appendix, indeed, shows that there are significant restrictions in Mozambique, Cameroon, and Tanzania, and just partial opening in Nigeria and South Africa. In Zambia and Uganda, instead, there are no capital controls.

The 2008-09 global financial crisis marked a revival in the use of capital controls. The IMF (2011) reports that Tanzania and Zambia tightened capital controls in order to discourage speculative inflows. Several emerging economies such as China, Colombia, Ecuador, Indonesia, the Russian Federation, Ukraine, Brazil, Thailand, Argentina, Venezuela, Peru and the Philippines, also imposed some type of capital controls on inflows or outflows (Grabel 2012).

One of the main drawbacks of capital controls is represented by the fact that a number of mechanisms may be developed for circumvention of these regulations. Spiegel (2012) identifies three possible mechanisms for circumvention: (i) over- and under-invoicing; (ii) disguising restricted flows (e.g. short-term flows) as unrestricted flows (e.g. FDI, trade finance or tradable equity); and (iii) derivative products (e.g. non-deliverable forwards (NDFs), American depositary receipts (ADRs), equity swaps, option strategies, etc. Note that this mechanism is not relevant for the majority of LICs, given the absence of derivative markets). According to the author, evasion of capital controls is likely to occur if the incentives for circumvention outstrip the costs. The latter are believed to depend on three factors: the costs of establishing the vehicles for circumvention, the number of intermediaries, and the size of penalties.

3.2 Macroeconomic measures

In the face of surges in capital inflows, three macroeconomic measures can be used to prevent overheating and real currency appreciation, and to reduce the economy's vulnerability to a sharp reversal of inflows: (i) official foreign exchange intervention; (ii) exchange rate intervention; and (iii) fiscal policy. These measures have been described by several papers in the economic and financial literature (see e.g. Calvo et al. 1994; Williamson 1995; Calvo et al. 1996; Lopez-Majia 1999; Montiel 1999; Ffrench-Davis and Griffith-Jones 2003; IMF 2007; among others). Relying on some of those papers, each of the above macroeconomic measures is defined below, its main advantages and disadvantages are analysed, and country examples among the LICs are provided to the possible extent.

Official foreign exchange intervention

Official foreign exchange interventions are widely used to prevent exchange rate appreciation in the case of a significant influx of private capital flows. These interventions may be sterilized (sterilization) or unsterilized.

Historically, sterilization has been often used by countries as a first response to capital flow surges. Just to mention a few examples in LICs, the government in Uganda and Tanzania used sterilization as initial response to the surges in private capital inflows in 2004 and 2007 respectively (IMF 2008). For this reason, Reinhart and Reinhart (1998) call sterilization ‘the policy of first recourse’.

Sterilization can be realized through open market operations, increasing bank reserve requirements, or transferring government deposits from the banking system to the central bank. Sterilization via open market operations takes place through the central bank sale of either government securities or central bank sterilization bonds. Open-market operations were implemented in several emerging economies such as Indonesia, Malaysia, and Chile in the early 1990s, but also in a few LICs such as Uganda in 1993-1994, Kenya in 1993, Uganda and Tanzania in 2007 (Lopez-Majia 1999; Deléchat et al. 2008; Montiel and Reinhart 1999; Adam 2009). Other sub-Saharan African countries such as Zambia and Ghana were active in sterilization operations, primarily through open market operations, after the 2008-09 global financial crisis (IMF 2011). The IMF (2007) also highlights that sterilization has been extensively used not only in the early 1990s but also in the early 2000s in emerging Asia, and more moderately in Latin America, Emerging Europe and in the Commonwealth of Independent States (CIS). The main advantage associated to this policy measure is that it neutralizes the liquidity impact of capital inflows (i.e. the increase in base money arising from purchases of foreign currency). Moreover, it has the beneficial side effect of building reserve buffers which may be useful in the case of a sudden reversal of

flows. However, one drawback is that by increasing the outstanding stock of domestic debt, it ends up increasing domestic interest rates. As a consequence, open-market operations may induce further capital flows, alter the composition of capital flows by increasing the share of short-term and portfolio flows, and it may raise quasi-fiscal costs by widening the domestic and foreign interest rate spread (Lopez-Mejia 1999). For these reasons, sterilization works at best in the short term (except when interest rates are kept low as in the case of China).

An increase in bank reserve requirements allows controlling liquidity conditions in periods of capital inflows by reducing the money multiplier and neutralizing the monetary expansion associated with central bank purchases of foreign exchange. However, this policy measure is associated to a number of drawbacks as reported by Calvo et al. (1996) and Lopez-Majia (1999), among others. First, it may discourage financial intermediation in countries that are trying to liberalize their financial markets. Secondly, in the long-run it may lead to disintermediation, as new institutions may develop to circumvent these regulations. Thirdly and similarly to open-market operations, it may encourage further capital inflows by inducing borrowing from abroad. Moreover, Gupta et al. (2006) highlight that the impact of this policy may be limited in a country where there are some banks which have already reserve assets in excess of requirements. Notwithstanding these shortcomings, this type of sterilization policy have been used extensively in the 1990s by emerging countries especially in Asia and Latin America, as well as by LICs in Africa such as Kenya in 1992-1993 (Reinhart and Reinhart 1999; Lopez-Majia 1999) and Tanzania in 1993-1994 (Reinhart and Calvo 1999). Increases in bank reserve requirements have taken several different forms. A few countries such as Kenya, Korea, Philippines, Brazil, Costa Rica, Malaysia and Sri Lanka have increased the statutory reserve requirements in all or some categories of domestic currency deposits. Other countries, instead, have increased or imposed marginal reserve requirements on domestic or foreign currency deposits (e.g. Brazil, Colombia, Sri Lanka, Chile and Peru).

Compared to the other two types of sterilization policy, the transfer of public sector deposits from commercial banks to central bank accounts has the advantage of entailing fewer fiscal or quasi-fiscal costs and of not shifting costs to the banking system. Nevertheless, its main drawback is that there is often limited scope for such operations due to the scarce availability of eligible funds (Lopez-Majia 1999). For example, Gupta et al. (2006) report that on average, in SSA central government deposits in commercial banks amount to just about 2 percent of GDP. In addition to this, large and frequent changes in bank deposits may also inhibit the optimal management of commercial bank portfolios. A few examples of countries that have implemented this macroeconomic measure are Malaysia, Thailand, and Philippines in the 1990s (Lopez-Majia 1999).

Unsterilized intervention is a more passive approach to exchange rate fluctuations in the case of capital inflow surges, which does not correct for the effect on the monetary base. Differently from sterilization, unsterilized interventions have the advantage of lowering domestic interest rates thus allowing capital inflows to slow down and the fiscal cost of the outstanding domestic credit to be reduced (Calvo et al. 1994). Nevertheless, they may enhance the vulnerability of the financial system similarly to sterilization through increases of bank reserve requirements. An example of country that has used unsterilized intervention is Argentina (Calvo et al. 1994).

Exchange rate intervention

Another option for a country experiencing a large influx of private capital flows and characterized by a de facto peg or a tightly managed float, is to allow greater

exchange rate flexibility. This does not mean to switch to a floating exchange rate system, but rather to allow greater variability of the nominal exchange rate (through flexibly managed exchange rate systems) or introduce a wider band of fluctuation of the nominal exchange rate. In the 1990s several emerging economies in Asia (e.g. Indonesia, Malaysia, Philippines) and Latin America (e.g. Brazil, Colombia, Chile, and Mexico) have adopted greater exchange rate flexibility (Montiel 1999; Lopez-Mejia 1999). More recently, in 2007 greater exchange rate flexibility has also been allowed in Nigeria and Uganda to respond to surges in capital inflows (IMF 2008). Before the 2008-09 global financial crisis, other SSA countries such as Kenya, Zambia, South Africa and Mauritius, which are characterized by a *de jure* floating or managed floating exchange rate regime which however is found to be approximated well by a soft peg to a basket dominated by the US dollar (Slavov 2011), allowed upward movements in their exchange rates to respond to rising capital inflows (IMF 2010). The advantages of exchange rate interventions are mainly two. First, allowing greater exchange rate flexibility the appreciation in the real exchange rate occurs through a change in the nominal exchange rate and not through higher inflation (Calvo et al. 1996; Lopez-Majia 1999). Second, greater exchange rate flexibility may discourage speculative short-term capital inflows by introducing higher uncertainty (Calvo et al. 1994). Nevertheless, greater exchange rate flexibility in the presence of large capital inflows implies both nominal and real appreciation of the domestic currency, and the latter may hurt strategic sectors of the economy and reduce competitiveness of tradables, which can lead to increasing current account deficits (Lopez-Majia 1999).

Fiscal policy

The last macroeconomic measure that a country may adopt to react to surges in private capital inflows is fiscal tightening, usually through cuts in public expenditures. According to the literature, this policy measure allows countering the adverse effects of capital inflows on aggregate demand and inflation. By lowering aggregate demand, fiscal consolidation lowers interest rates and, are associated to this policy measure. First, fiscal tightening requires changes in the legislation and policy actions that are difficult to be undertaken on short notice. Second, this macroeconomic measure may be therefore discourages capital inflows. Furthermore, given that government expenditure is often directed to non-tradable goods, fiscal tightening limits the appreciation of the real exchange rate. A number of drawbacks, however difficult to implement if it is at odds with long-term goals related to taxes and expenditures. In LICs fiscal tightening may also be particularly difficult to implement because of their needs for social and infrastructure spending (Deléchat et al. 2008; IMF 2011). Because of these limitations, only few countries have used fiscal tightening in inflow periods in the 1990s, including Chile in Latin America and Indonesia in Asia (Lopez-Majia 1999). Fiscal restraint has also been used in Zambia to mitigate pressures on aggregate demand and the exchange rate stemming from large capital inflows (Deléchat et al. 2008).

3.3 Structural measures

Financial sector reforms

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 agents⁵. A number of empirical studies show that prudential regulation and supervision matters in terms of whether or not countries may avoid financial crises. Just to mention some examples, Lindgren et al. (1996) analyse a sample of 34 industrial and developing countries that have experienced banking crises, and find that the majority of them were characterized by an inadequate regulatory and supervisory framework in the period preceding the crises. Moreover, Williamson and Mahar (1998) show that countries with stronger prudential regulation and supervision tended to experience less severe banking crises than countries with weaker regulatory and supervisory frameworks over the period 1973-1995.

A possible limitation of financial sector reforms in managing capital flows is the fact that reform processes take time thus constraining prompt and timely solutions (Kawai and Takagi 2008). Moreover, Ocampo et al. (2008) stress that one of the costs of introducing or enhancing prudential regulation is a higher domestic interest rate which is due to the higher cost of financial intermediation. However, since society will bear the costs of crises if prudential regulation is missing or weak, overall economic efficiency is enhanced through it. Ostry et al. (2012) also shed light on a number of other costs associated with the use of prudential regulation. First, prudential measures on domestic banking systems are likely to affect the availability of finance to small and medium enterprises (SMEs), which tend to rely heavily on domestic bank financing and in developing countries play a key role in promoting economic activity and creating jobs. Second, applying prudential measures to the banking system may lead to disintermediation as well as to flows movement to non-regulated financial institutions or foreign banks (Wakeman-Linn 2007; Ostry et al. 2011). Third, prudential measures on domestic banks may cause a diversion of flows towards other countries that may be less able to absorb them and therefore likely to face financial stability risks (Forbes et al. 2011). Zettelmeyer et al. (2010) highlight that regulations on currency mismatches may come at the cost of making potentially welfare-improving transactions more expensive or they may even totally impede them. Ocampo and Griffith-Jones (2007) also argue that regulations on currency mismatches in the balance sheets of banks may encourage non-financial agents to borrow directly from abroad.

Among LICs, many countries have adopted regulatory reforms, especially with respect to banks which are the dominant financial institutions, in the 1980s and early 1990s (see the paper by Brownbridge and Kirkpatrick (2000) which focuses on LDCs most of which are LICs). Efforts in improving the supervision and regulatory framework have also been made by some low-income economies more recently. In Uganda, for example, in the early 2000s the government has pursued policies aimed at strengthening banking supervision and regulation, including granting increased autonomy to the central bank (Ndikumana 2003). Furthermore, in response to the 2008-09 global financial crisis, Mozambique and Zimbabwe made efforts to improve their banking supervision and regulatory framework (IMF 2011). Note also that in Africa there exist tight regulatory limits on open positions which limit significantly the exposure of the banking systems to currency mismatches (O'Connell et al. 2007). A study by Čihák and Podpiera (2005) also shows that in East African countries such as Kenya, Tanzania, and Uganda, banks tend to be reluctant to lend in foreign exchange against domestic

⁵ These regulations, for example, forbid banks from holding deposits from domestic residents in foreign currencies or from lending in foreign currencies to firms that do not have revenues in those currencies. They may also impose higher risk-adjusted capital adequacy requirements on foreign currency loans made to domestic agents without matching revenues (see Ocampo et al. (2008) for additional examples).

currency revenues thus limiting significantly the exposure of private firms to currency mismatches.

Notwithstanding this, in several LICs prudential and regulatory measures have not been properly or fully implemented. Indeed, the study by Mehran et al. (1998) reveals that by 1997 among the LICs included in the sample of 18 African countries and two CFA zones analysed, only Kenya had a well-designed and effectively implemented banking regulatory system. Madagascar, Malawi, Tanzania, Uganda, and Zimbabwe had put in place a basic structure and regulatory system, while Ethiopia, Mozambique, Rwanda, and the LICs belonging to the West African Economic and Monetary Union and Economic and Monetary Community of Central Africa were still in the initial stage of building supervisory structures. Studies by Gelbard and Leite (1999), Nissanke and Aryeetey (1998), and Ndikumana (2003) confirm that in several sub-Saharan African LICs the regulatory and supervision framework is still weak, inadequate, or non-existent. Brownbridge and Kirkpatrick (2000) highlight that there are four main sources of weaknesses in LDCs' (most of which are LICs) prudential systems. First, there are loopholes in prudential regulations. For example, many SSA countries have imposed minimum capital requirements which however are very low (i.e. less than US\$ 2 million; see Mehran et al. 1998). Second, there is a lack of adequately skilled staff to undertake supervision. According to Mehran et al. (1998), with the exception of Tanzania, the average experience of bank supervisors in SSA LICs is between two and five years only. Third, regulatory authorities are often subject to political interference and therefore less efficient and impartial. Finally, the implementation of the developed country model of prudential regulation and supervision (i.e. the Basel's Committee's Core Principles for Effective Banking Supervision) is particularly challenging in LICs, since disclosure of financial information is inaccurate, skilled personnel is scarce, and political interference in public administration is pervasive. This is also confirmed by Cornford (2008) and Murinde (2012) with respect to African countries. The 2008-09 financial crisis also raise some doubts on the soundness of the sophisticated prudential regulation and supervision used in the developed world, and therefore on the appropriateness of implementing this approach in LICs.

Easing restrictions on capital outflows

Given that net capital inflows are given by the difference between capital inflows and outflows, the liberalization of outflows may be used as a tool to limit surges in net capital inflows. Nevertheless, Aizenman and Pasricha (2013) stress that the easing of restrictions on capital outflows may be limited by fiscal concerns. Indeed, outflow controls are often imposed for fiscal reasons (see Dooley 1996; Eichengreen 2001), and in particular to reduce the cost of funding government debt overhang, to raise hidden fiscal revenues, or to facilitate the use of other financial repression measures (e.g. interest-rate ceilings, high reserve requirements, etc.) that further depress government borrowing costs. Therefore, it may be the case that the liberalization of outflow controls is not implemented since its benefits in terms of reduced net capital inflows do not outweigh the lost revenues from financial repression that, as shown by Giovannini and de Melo (1993), may be substantial. Note also that the easing of restrictions on capital outflows may also be problematic and deserves further study in countries such as several African countries where there are significant concerns on capital flight (Murinde 2009).

In the past, restrictions on capital outflows have been eased in several developed and emerging economies such as Britain (1979), New Zealand (1984), Yugoslavia (1990), Chile (early 1990s), Brazil (since 1992), South Africa (since 1994), India (since 1997), and China (since 2004) (see Williamson 1991; Laban and Larrain

1997; Gottschalk and Azevedo Sodre 2008). Pasricha (2012) also highlights that between 2004 and the onset of the 2008 global financial crisis, the liberalization of outflow controls became more frequently used than the tightening of inflow controls to reduce net capital inflows in emerging economies. Note that the tightening of inflow controls, instead, became popular after the 2008 crisis. This finding is confirmed by Aizenman and Pasricha (2013) who look at a longer time horizon (2001-2010) and find that outflow liberalizations were the predominant tool for restricting net capital inflows in emerging economies in 2007 and to a less extent in 2010, i.e. in the years when net capital inflows to emerging markets reached their peak values. The authors also highlight that between 2001 and 2010, emerging economies with inflation targeting monetary policy and freely floating exchange rates tended to liberalize outflow controls less frequently than other emerging countries.

Table 3 provides a summary of the different capital account management tools implemented in some low-income countries in sub-Saharan Africa.

Table 3: Capital account management tools implemented in selected SSA LICs

	Capital controls on inflows	Capital controls on outflows	Sterilization	Exchange rate intervention	Fiscal tightening	Financial reforms	Easing restrictions on capital outflows
Chad	X	XX					
Kenya			X ^b	X		X ¹	
Mozambique	XX	XX				X ³	
Tanzania	XX	XX	X ^{ab}			X ²	
Togo	X	XX					
Uganda			X ^a	X		X ²	
Ethiopia	X					X ³	
Ghana	X	X	X ^a			X ²	
Nigeria	X			X			
Zambia			X ^a	X	X	X ³	

Source: Author's elaboration on different sources.

Notes: XX denotes stronger capital controls; a sterilization realized through open market operations; b sterilization realized by increasing bank reserve requirements; 1 well designed and effectively implemented supervisory and regulatory system; 2 basic supervisory and regulatory system; 3 supervisory structures at the initial stage of development. Empty cells mean that information is not available or that there is no evidence that the country has implemented a specific policy tool. Although Ghana, Nigeria, and Zambia are not classified as LICs according to the World Bank, they are among the LICs as defined by the IMF

3.4 Effectiveness of external financial regulation

3.4.1 Capital Controls

The debate on the effectiveness of capital controls regained momentum in the aftermath of the 2008-09 global financial crises. This is due to the fact that a number of emerging and developing countries decided to impose or strengthened different forms of capital controls (see Table 4) to respond to the sharp appreciation of their currencies caused by the quick bounce back of capital inflows from their slump in 2008 (e.g. the Brazilian real appreciated 38% against the US dollar since 2009). However, the debate on the effectiveness of capital controls is far from settled. Indeed, current and previous country experiences and empirical studies are in general contradictory and preclude drawing definitive conclusions on the usefulness of such capital account management tools.

Table 4: Capital control measures in selected emerging and developing countries, 2008-2010

Country	Tax measures	Quantitative limits	Time requirements	Unremunerated reserve requirements
Argentina		X		X
Brazil	X			X
China		X		
Colombia		X		X
India		X		X
Indonesia		X X		
Peru	X	X		X
South Korea	X	X		
Taiwan		X		
Thailand	X			
Turkey				X

Source: Massa (2011).

On one hand, opponents to capital controls argue that their use could lead to local and global misallocation of resources, thus perpetuating global imbalances by allowing countries to maintain undervalued real exchange rates. On the other hand, supporters see capital controls as an important tool to prevent the build-up of financial sector risks, as well as to reduce the damages associated to capital flow sudden reversals (Aizenman and Pasricha 2013). But how effective are capital controls, and should LICs be using them as part of their toolkit to manage capital flows?

The literature on the effectiveness of capital controls is vast. So, in this study we decided to rely on the most recent publications (some of which already contain comprehensive literature surveys), privileging empirical analysis.

Habermeier et al. (2011) survey recent econometric evidence on capital controls during the 2000s covering experiences from Brazil, Colombia, Korea, and Thailand. Their findings suggest that capital controls have little or no effect on overall flows and currency appreciation, although there is evidence that capital controls may have an effect on changing the composition (i.e. maturity, and type) of capital flows, e.g. shifting the composition of capital flows from external borrowing to portfolio and FDI inflows. Furthermore, their effect (if any) tends to dilute over time, thus suggesting that these measures are only effective in the short-run. In a similar way, by analysing the effectiveness of capital controls in the 1990s, Montiel and Reinhart (1999) find that capital controls can influence the composition of capital inflows, but not their volume.

Cordero and Montecino (2010) document and analyse the capital control experiences of Malaysia, Chile, Colombia and Brazil. Their findings suggest that Malaysia was by far the most effective country applying capital controls to inflows, managing to obtain a significant decline in short-term capital flows, a reduction in the volume of flows, as well as the avoidance of exchange rate appreciation. On the other hand, the Chilean and Brazilian experiences were less successful, although still positive. Chile managed to change the composition of flows, but it could not avoid an appreciation of its currency (see also Agosin and Ffrench-Davis 1997). Brazil managed to reduce the volume and change the composition of inflows, but, as Chile, it failed to prevent currency appreciation. Finally, in the case of Colombia, the various empirical studies (see, e. g., Magud and Reinhart 2006; Le Fort 1996; Coelho and Gallagher 2010) have not been able to provide conclusive evidence in favour or against capital controls. One reason could be the existence of loopholes that enabled investors to go around capital controls.

Table 5 summarizes the findings on the effectiveness of capital controls in selected emerging economies.

Table 5: Effectiveness of Capital Controls in selected emerging economies

Country	Period	Volume of short-term flows	Exchange rate	Composition of flows	Foreign Reserves
Malaysia	1998-2001	Effective	Effective (no appreciation)	--	Effective
Colombia	1993-1998	--	--	Moderately effective	--
Chile	1989-1998	Dubious effect	Dubious effect	Effective	--
Brazil	1992-1998	Moderately effective	Not effective	--	--

Source: Adapted from Cordero and Montecino (2010).

Next to the studies analysing the impact of capital controls on the volume and composition of capital flows, a recent work by Li and Rajan (2012) assesses the effects of different types of inflow and outflow controls (i.e. inflow and outflow controls on FDI, equity and debt flows) on the volatility of the same variety of flows, as well as on the volatility of other types of flows (cross effects). In this way, the authors are able to assess both the intended and unintended consequences of capital controls. The analysis is conducted on a sample of 91 economies over the period 1995 to 2005, and on a sub-sample of 37 emerging economies. The obtained results are summarized in Table 6 and hold for both the full sample and the emerging markets sub-sample. In general, the findings suggest that controls on equity outflows are the most effective form of capital controls in terms of reducing capital flow volatility.

Table 6: Effects of different types of capital controls on capital flow volatility

	Volatility of gross equity outflows	Volatility of gross equity inflows	Volatility of gross FDI outflows	Volatility of gross FDI inflows	Volatility of gross debt outflows	Volatility of gross debt inflows
Equity outflow controls	No effect	Decrease	Decrease	n.a.	Decrease	n.a.
Equity inflow controls	Increase	No effect	n.a.	No effect	n.a.	No effect
FDI outflow controls	Increase	n.a.	Decrease	Decrease	No effect	n.a.
FDI inflow controls	n.a.	No effect	Increase	No effect	n.a.	No effect
Bond and money market outflow controls	Increase	n.a.	Decrease	n.a.	Decrease	No effect
Bond and money market inflow controls	n.a.	No effect	n.a.	Decrease	Decrease	Increase

Source: Adapted from Li and Rajan (2012).

Although most of the literature focuses on the effectiveness of controls on capital inflows, there are a number of studies that look specifically at the effectiveness of capital outflow controls. For example, Edwards (1999) surveys the literature and finds that controls on outflows have been largely ineffective. One reason is that in most cases the controls imposed were easily circumvented, and encouraged corruption. By surveying a number of case studies, Magud et al. (2011) also find only weak evidence for the effectiveness of outflow controls, except possibly in the case of Malaysia in 1998. A few studies, however, find some evidence on the effectiveness of capital outflow controls. Quantitative findings by Binici et al. (2010), for instance, show that outflow controls may be somewhat effective, especially in advanced economies probably due to their higher institutional and regulatory quality. The IMF (2012a) also reports that an IMF staff analysis on a sample of 31 emerging economies over the period 1995-2010 shows that capital outflow controls may be effective in countries with favourable macroeconomic conditions, although their full effect takes time to materialize. Moreover,

Gallagher et al. (2011) argue that capital outflow restrictions may be among the most significant deterrents of undesirable inflows. Imposition of controls on outflows may be a useful way to avoid sharp currency devaluations and runs on banks. They can also help channel credit and investment into the real economy

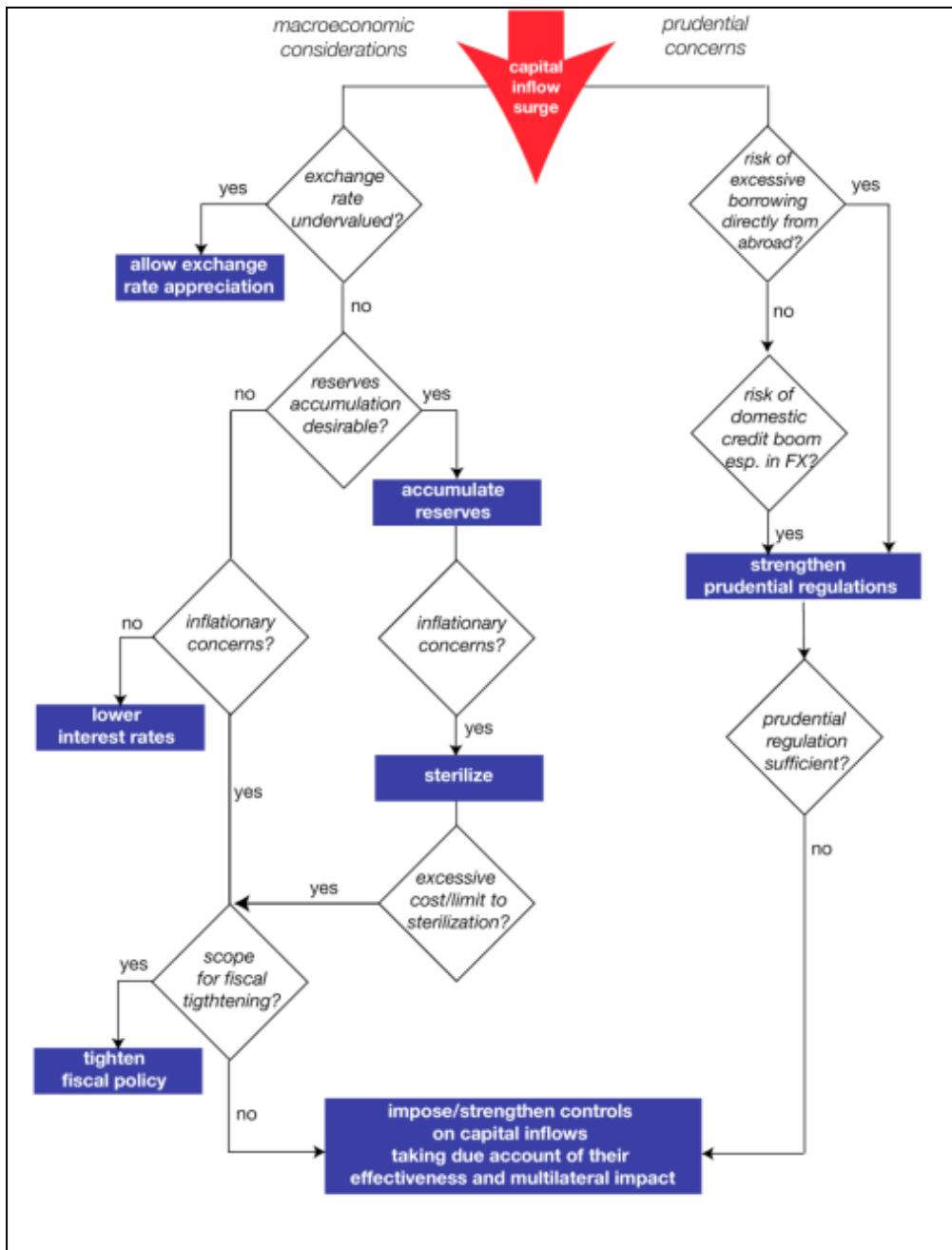
The empirical literature on capital control effectiveness in LICs is still thin. Among the few studies dealing with this issue, it is worth mentioning Binici et al. (2010) who estimate the effects of capital inflow and outflow controls on equity, FDI and debt flows in 74 countries over the period 1995-2005, distinguishing across country income groups (i.e. 11 LICs, 35 high-income countries, and 24 middle-income countries). Their findings show that in the low/middle income group, outflow controls are effective in reducing FDI and equity outflow but not debt flows. Note that in high-income countries also debt outflow controls are effective, probably due to their better institutional ability to enforce controls. Controls on capital inflows, instead, are not effective in reducing capital inflows for whichever asset class (the same result applies to advanced economies). In addition to the above, there are also some studies which have looked at the sub-Saharan African region, where most LICs are located. In particular, Chanda (2005) analyses the effects of capital controls on long-run growth at the regional level. He studies 57 developing countries that implemented capital controls for the period 1975–1995, and finds that the majority experienced negative effects on their growth rates. More strikingly, no sub-Saharan African country in the sample derived a positive effect from capital controls. Asiedu and Lien (2004), using data from 96 developing countries over the period 1970-2000, study the effectiveness of capital controls on FDI distinguishing across developing regions (i.e. sub-Saharan Africa, North Africa and the Middle East, Latin America, East Asia). Their results show that capital controls have no effect on FDI in sub-Saharan Africa. In a similar way they do not affect FDI in North Africa and the Middle East, but have a negative effect on FDI in Latin America and East Asia.

From an international organisation perspective, the International Monetary Fund (IMF) until not long ago had a position broadly against capital controls, and favoured capital account liberalisation. However, in the aftermath of the 2008-09 global financial crisis, the IMF made a U-turn and decided to endorse the use of capital controls under certain circumstances.

According to the new IMF official position, capital controls could be used when countries have little room for economic policies such as lowering interest rates or when sudden increases of capital inflows threaten financial stability. However, the IMF stressed that capital controls should be targeted, temporary and take care of not discriminating between residents and non-residents (IMF 2012c).

The IMF draws on the work done by Ostry et al. (2010), which provides a simple diagram that explains the circumstances under which it is advisable to use capital controls to address both macroeconomic and financial stability concerns (Figure 4). According to Ostry et al. (2010), the economy should be running near its potential, the level of reserves should be adequate, and the exchange rate should not be undervalued. Furthermore, capital controls should be used only as a last resort tool, i.e. once all other measures have failed to contain the effects of a surge in capital inflows. Ostry et al. (2010) also highlight that capital controls should not be used solely to avoid or delay normal economic, trade and exchange rate adjustments.

Figure 4: Managing capital inflow surges: when it is advisable to use capital controls?



Source: Ostry et al. (2010).

Overall, conclusive evidence on the effectiveness or not of capital controls is still lacking. This may be due to the different environments and scenarios that each country faces. Furthermore, a same country can change over time, therefore what works today might not work tomorrow. So probably the answer to the effectiveness of capital controls relies on when and for how long they are applied. Levy Yeyati (2011) puts it in simple words. To the question: “*Are controls effective?*”, he answers “*Yes, as they impose a toll on traffic in and out of domestic markets*”. Now the real issue is “*How effective are capital controls?*”. He explains that this will depend on the cost of the toll (and the volume of traffic). Furthermore, capital controls may be a good tool to moderate the impact of

capital flows, but they should be used in coordination with other macro-prudential tools to prevent asset inflation and overvaluation.

3.4.2 Macroeconomic measures

Evidence on the effectiveness of macroeconomic measures to manage capital flows and cope with their adverse effects is mixed across the different types of policy instruments.

Official foreign exchange interventions are found to be mostly ineffective in managing exchange rate fluctuations (Schadler 2008). This is especially true in developed economies. Indeed, there seems to be consensus that in industrialized countries the impact of interventions on exchange rate is insignificant (Cardarelli et al. 2009)⁶ and if these operations work, effects are rather short lived (see Edison 1990, 1993; Humpage 1988; Obstfeld 1988; among others) and exchange rate volatility tends to increase (Humpage 2003). One of the reasons of such ineffectiveness is that the condition of imperfect substitutability between domestic and foreign assets in industrial economies does not hold (Kawai and Takagi 2008). There are, however, a number of recent studies that by using high-frequency data obtain results which support the effectiveness of interventions in developed economies (Beattie and Fillion 1999; Fatum and King 2005; Fatum and Pedersen 2009).

Research focusing on emerging and developing economies is more limited due to the lack of adequate data, but finds that the impact of official interventions on exchange rate tends to be more effective in these countries than in industrial economies (Ishii et al. 2006). This may be explained by the fact that international financial assets in developing and emerging economies are less substitutable compared to developed countries. Canales-Kriljenko (2003) identifies other four reasons why interventions are more powerful in emerging economies than in industrialized countries. First, in emerging markets operations are not automatically sterilized and therefore they affect the monetary base and, by doing so, the underlying fundamentals of exchange rates. Second, the size of foreign exchange interventions in emerging economies tends to be greater than that in developed countries. Third, due to the lower degree of transparency of financial markets, in emerging economies central banks have an informational advantage and therefore may act strategically to alter expectations of market participants on the future exchange rate path thus leading to a change in net open foreign exchange positions of international agents and affecting the exchange rate. Finally, given that central banks in developing economies are often the supervisory authorities, they may support the effects of official interventions by moral suasion. Among the studies which find that, under certain conditions, official foreign exchange interventions may be effective in emerging and developing countries, it is worth mentioning the works by Tapia and Tokman (2004) on Chile, Egert and Komarek (2005) on Czech Republic, Rhee and Song (1999) on Korea, as well as by Kamil (2008) on Colombia⁷. By looking at Mexico and Turkey, Guimaraes and Karacadag (2004) also find that intervention had a significant effect on the exchange rate level in Mexico, while it had just a short-run decreasing effect on the exchange rate volatility in Turkey. Gersl (2006) shows that the interventions conducted by the Czech National Bank in 2001 and 2002 against the appreciation of the domestic currency had some short-term

⁶ Cardarelli et al. (2009) analyse 109 episodes of large net private capital inflows to 52 advanced (and developing) countries over the period 1987–2007, and find that sterilized intervention is ineffective in resisting nominal exchange rate appreciation in the case of persistent influx of capital.

⁷ Tapia and Tokman (2004), Egert and Komarek (2005), and Kamil (2008) find that interventions can be effective when they are consistent with the actual policy stance. Rhee and Song (1999), instead, show that official interventions tend to be less effective the more open capital markets are.

impact on the exchange rate level but contributed to increase volatility. A significant although small or short-lived impact on the exchange rate level of 2001 and/or 2002 interventions in the Czech Republic has also been found by Disyatat and Galati (2007) and Scalia (2008). For additional and detailed descriptions of country experiences we refer the interested reader to Sarno and Taylor (2001) and Brause (2010).

Looking at differences in the effectiveness of sterilized and unsterilized interventions, Craig and Humpage (2001) argue that sterilized interventions are generally ineffective, while unsterilized interventions may influence the exchange rates even though they conflict with price stability. This is confirmed by episodic evidence in Uganda (Adam 2009). Indeed, in 1999 and 2003 Uganda experienced an appreciation in the equilibrium real exchange rate due to a surge in official and private capital flows that prompted the Bank of Uganda to adopt sterilized interventions, which, however, resulted to be ineffective. On the other hand, in 2007 the Bank of Uganda responded to a new wave of sharp private capital inflows with an unsterilized intervention which was successful in influencing the exchange rate but created inflationary pressures (Deléchat et al. 2008). The use of unsterilized interventions in Tanzania and Zambia in 2007 produced similar results (Deléchat et al. 2008).

In addition to the above, it is important to highlight that official foreign exchange interventions are also found to be ineffective in reducing the inflows of private capital. Indeed, a side effect of these operations is represented by the increase in the level of domestic interest rates that encourage further capital inflows (see Goldstein 1995; Montiel 1999; Kawai and Takagi 2008; among others). Moreover, sterilized interventions not only increase the volume of capital inflows but they also affect their composition by increasing the share of short-term and portfolio flows (Reinhart and Calvo 1999, among others). The adverse impacts of interventions on the volume and composition of capital flows is proved by experiences of Brazil, Chile, Colombia, the Czech Republic, and Malaysia in the 1990s (Calvo et al. 1994; Reinhart and Calvo 1999; Montiel and Reinhart 1999). In addition to these economies, Montiel and Reinhart (1999) find that in the early 1990s sterilized interventions increase the volume of total capital flows through short-term capital (while portfolio flows and FDI remain unaffected by sterilization) and significantly alter the compositions of flows by reducing the share of FDI in total flows and increasing the share of short-term and portfolio flows also in Mexico, Philippines, Sri Lanka, Thailand, Argentina, Costa Rica, Egypt, Indonesia, as well as in LICs such as Kenya and Uganda.

Moving to exchange rate flexibility Kawai and Takagi (2008) stress that the effectiveness of this policy tool depends on the width of the exchange rate fluctuation band. If the band is narrow, the disincentive for speculative inflows will be limited and vice versa. Nevertheless, Reinhart and Reinhart (1998) and Montiel (1999) argue that empirical evidence (in Latin American and Asian emerging economies) is inconclusive on whether increased exchange rate volatility stemming from greater exchange rate flexibility may discourage speculative short-term capital inflows. Two recent studies, however, show that greater exchange rate flexibility may be effective in overcoming two drawbacks of capital inflow surges: the real exchange rate appreciation associated to a loss of competitiveness, and the increase in domestic credit which is a source of financial fragility. In particular, Combes et al. (2011), using a sample of 42 developing countries (including emerging economies, LICs, and countries from the main developing regions) over the period 1980-2006, show that a more flexible exchange rate is effective in dampening the real appreciation stemming from capital inflows. Interestingly, this result holds for the whole sample but it is also

robust for the low-income countries sub-sample. The finding is also robust to the use of different measures of exchange rate flexibility. On the other hand, Magud et al. (2012) analyse the impact of exchange rate flexibility on credit market in 25 emerging economies in Asia, Europe and Latin America during period of large capital inflows, and find that greater exchange rate flexibility may be a useful policy tool to curb the effects of capital inflows on domestic credit.

Among all the macroeconomic measures used to respond to surges in capital inflows, there seems to be consensus that fiscal tightening is the most effective policy tool, although it is difficult to implement (see Section 3.1.2). Notwithstanding this, the empirical work on the effects of fiscal restraint in episodes of large capital inflows is rather limited, probably due to the fact that few governments adopted this policy measure to respond to large capital inflows (Kaminsky et al. 2004). Among the studies which support the effectiveness of fiscal tightening in limiting appreciation and increasing growth during and after periods of capital inflow surges respectively, it is worth mentioning the following ones. Lopez-Mejia (1999) reports that fiscal tightening implemented during inflow periods in Chile (1989-95), Malaysia (1989-95), Indonesia (1990-95), and Thailand (1988-95), led to remarkable benefits in terms of real depreciation of the exchange rate and larger increases in economic growth. By examining over 90 episodes of large inflows, Schadler (2008) also finds that fiscal restraint exerts a significant effect in constraining real appreciation and augmenting post-inflow episode growth. A similar result is also obtained by the IMF (2007). Moreover, Cardarelli et al. (2009) analyse 109 episodes of large net private capital inflows to 52 advanced and developing countries over the period 1987–2007, and find that fiscal tightening helps reduce upward pressures on both aggregate demand and the real exchange rate and facilitates a soft landing in the aftermath of inflow periods. Looking at LICs, Deléchat et al. (2008) report that in Zambia expenditure restraint helped to respond to the 2007 capital inflows surge, mitigating pressures on aggregate demand and the exchange rate.

3.4.3 Structural measures

Episodic evidence suggests that the easing of restrictions on capital outflows is ineffective in responding to the adverse effects of surges in capital inflows since it actually stimulates further net inward flows. Bartolini and Drazen (1997) report that in Italy, Spain, and New Zealand, liberalizations of capital outflows were accompanied by sharp increases in net capital inflows in the mid to late 1980s. A similar situation was experienced by Uruguay in the mid-1970s. The removal of capital outflow controls led to rapid and massive inflows of capital also in Britain since 1979, as well as in Colombia, Mexico, and Egypt in the 1990s (Laban and Larrain 1997). Measures to liberalize capital outflows in Chile during the 1990s, as well as in Malaysia and Thailand were ineffective as well (Laban and Larrain 1997; Reinhart and Reinhart 1998). In order to explain these phenomena, Laban and Larrain (1997) argue that the removal of outflow controls (defined as a reduction in the minimum capital repatriation period for foreign investment) reduce the degree of irreversibility of the decision to invest in a given country. This, in turn, makes investors more willing to invest in that country since it is easier to get their capital out in the future. As a consequence, net capital inflows are likely to increase. In addition to this, Bartolini and Drazen (1997) highlight that the removal of outflow controls not only provides greater flexibility for current allocation of capital, but it also signals that imposition of controls is less likely to occur in the future thus making investment more attractive to forward-looking investors.

Regarding the effectiveness of financial regulation, we do not go into details on this issue here, which is extensively addressed in a companion paper by Spratt (2013) on financial regulation, growth and stability. Nevertheless, it is worth highlighting some key messages which stem from the existing literature. In particular, the evidence on the effectiveness of prudential regulation in managing the risks from inflows is still scarce and controversial. For example, few studies provide a broad cross-country evidence of which regulatory and supervisory policies work best to promote financial stability. Among these, it is worth to mention Barth et al. (2004) who assess the effectiveness of the following practices in a sample of 107 countries: (i) regulatory restrictions on bank activities and the mixing of banking and commerce; (ii) regulations on domestic and foreign bank entry; (iii) regulations on capital adequacy; (iv) deposit insurance system design features; (v) supervisory power, independence, and resources; (vi) loan classification stringency, provisioning standards, and diversification guidelines; (vii) regulations fostering information disclosure and private-sector monitoring of banks; and (viii) government ownership. Ostry et al. (2012) also analyse the effects of foreign currency (FX)-related prudential measures and domestic prudential measures on a sample of 51 emerging market economies over the period 1995-2008.

Evidence on whether regulatory and supervisory practices in the developed world will succeed in countries with different structural characteristics, stage of development and institutional capacities is missing. As mentioned in Section 3.1.3, the implementation of the developed country model of prudential regulation and supervision is particularly challenging in developing countries, especially in LDCs, since disclosure of financial information is inaccurate, skilled personnel is scarce, and political interference in public administration is pervasive. A number of proposals for improving prudential systems in LDCs have been put forward (e.g. strengthening capital requirements, tightening lending restrictions, financial restraint, intervention rules, autonomy and accountability of regulators, market-based approaches to regulation), but the efficacy of these approaches is largely unproven (Brownbridge and Kirkpatrick 2000).

In addition to this, empirical and episodic evidence on the effectiveness of prudential measures in overcoming the drawbacks arising from surges in capital inflows is mixed. For example, Habermeier et al. (2011) look at experiences of 13 emerging markets between 2000 and 2008, and find that prudential measures were successful in reducing credit growth in countries such as Croatia, Korea and India, but not in other economies such as Colombia, Uruguay, and Romania. Moreover, they are rarely found to reduce appreciation pressures (e.g. in Croatia) and net inflows (only in Peru). In several countries, prudential measures were also ineffective in stopping equity or real estate price increases (see the case of Vietnam, India, Romania and Croatia). Evidence on the effectiveness of prudential measures in reducing foreign currency lending is also controversial. While Ostry et al. (2011) and Ostry et al. (2012) find that prudential policies were successful in achieving this objective, Habermeier et al. (2011) highlight that in a few cases such as in Korea such policies were ineffective in decreasing foreign currency lending. On the other hand, there is some evidence that prudential measures are effective in enhancing resilience during the times of crisis (see Ostry et al. 2011 on the 2008-09 global financial crisis; Ostry et al. 2012; Williamson and Mahar 1998).

Concluding remarks

Over the last few years, the debate on private capital flows and their management has regained momentum. This paper surveys the literature on the following private capital flows-related issues, with a focus on low-income countries: (i) impact on growth; (ii) risks; (iii) capital account management tools; and (iv) effectiveness of different policy measures. Overall, the analysis confirms conventional wisdom according to which private capital flows (i.e. FDI, portfolio investment, cross-border bank lending), in some cases and under certain conditions, may carry important opportunities, but they are also a significant source of risks. Therefore, it is important to develop adequate and effective capital account management policy tools.

The survey reveals that the empirical evidence on the growth benefits of private capital flows as well as on the effectiveness of the existing capital account management measures (i.e. capital controls, official foreign exchange intervention, exchange rate intervention, fiscal tightening, financial reforms, and easing restrictions on capital outflows) is still controversial, and further investigation is needed. Moreover, the studies focusing specifically on LICs are still very scarce. Indeed, most of the existing studies looking at the developing world have a focus on emerging economies. In a few cases, there are works looking at broad samples of developing countries which include few LICs or at regions (e.g. sub-Saharan Africa) and country groups (e.g. LDCs) where the majority of LICs are located. However, this is not enough to get results on the basis of which it is possible to draw LICs-specific conclusions.

Looking in detail at the key findings of the literature survey in each of the four categories of issues mentioned above, it is worth highlighting that there are relatively a few studies on the growth impacts of FDI flows in LICs (in particular cointegration and causality analyses), but much less work has been done on the growth benefits of other types of private capital flows, especially bond flows and international bank lending. This is particularly worrying since bond flows are becoming an increasingly important part of private capital flows in a number of sub-Saharan African low-income economies. Moreover, given that portfolio investment has been found to be much more volatile than FDI in LICs, it is important to identify the threshold beyond which the risks associated to high volatility of portfolio investment flows offset the growth benefits.

Second, most of the analyses on risks of private capital flows in LICs are based on sporadic episodic evidence and stylized facts, while empirical studies are extremely scarce or even nonexistent. This is particularly true with respect to financial stability risks and risks of capital flow reversal/sudden stop. In light of the recent 2008-09 financial crisis that has led to significant portfolio investment flow reversals in some LICs (e.g. Kenya and Uganda), it becomes imperative to conduct more quantitative studies on these issues, as well as to monitor regularly the composition and volatility of private capital flows at the country level.

Third, compared to emerging market economies, the evidence on the types of capital account management tools that have been used in LICs over time is

extremely limited and in many cases out of date. Therefore, much more detailed information on the use of the different types of capital account management policy measures in LICs is needed. Moreover, it is important to analyse in depth the issues that might arise in implementing specific capital account management tools in LICs. Indeed, the conducted survey highlights that in sub-Saharan Africa there is limited availability of eligible funds for implementing transfers of public sector deposits from commercial to central banks; fiscal tightening is problematic in the presence of huge needs for social and infrastructure spending; the implementation of prudential regulation and supervision used in the developed world is difficult due to inaccurate disclosure of financial information, scarce skilled personnel, and pervasive political interference in public administration; and the easing of restrictions on capital outflows is challenging in the presence of significant concerns on capital flight.

Finally, the evidence on the effectiveness of capital account management tools in LICs is extremely limited. Further investigation is needed in particular on the effectiveness of capital controls (also in light of the new guidelines of the IMF) since among the different country income groups, LICs appear to account for the highest shares of capital inflows and outflows subject to controls, and in sub-Saharan Africa there are still countries with significant restrictions on capital flows. Therefore, future studies should look at the effects in LICs of capital controls (at both the aggregate and country level) on the volume, composition and volatility of various types of private capital flows. It is also particularly relevant to gather additional evidence on the effectiveness of outflow controls in LICs since data reveals that in these economies their use is more widespread than that on inflows. Moreover, given that the 2008-09 global financial crisis has raised some doubts on the effectiveness of the sophisticated prudential regulation and supervision used in the developed world to promote financial stability, further investigation is needed on which regulatory and supervisory policies may work best in LICs taking into account their country-specific characteristics. In particular, 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 analysing their respective advantages and disadvantages.

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Appendix

Table A1: Summary of studies on the impact of private capital flows on growth in LICs

Author(s) (Year)	Country coverage	Time horizon	Methodology	Findings
Seetanah & Khadaroo (2007)	39 SSA countries	1980-2000	Cross-section analysis, pooled OLS analysis, GMM	Positive and significant impact of FDI on growth
Deléchat et al. (2009)	44 SSA countries	2000-07	Cross-country multivariate regression	Positive and significant impact of FDI on growth
Toulaboe et al. (2009)	14 LICs	1978-2004	OLS regression	Positive and significant impact of FDI on growth
Adefabi (2011)	24 SSA countries	1970-2006	2 Stages Least Square approach	Positive and significant impact of FDI on growth
Ndambendia and Njoupuognigni (2010)	36 SSA countries	1980-2007	Mean group (MG), pooled mean group (PMG), dynamic fixed effect (DFE)	Positive and significant impact of FDI on growth
Abdullahi (2012)	15 SSA countries	1990-2009	Panel data (OLS, fixed effect, random effect)	Positive and significant impact of FDI on growth

Sukar et al. (2007)	12 SSA countries	1975-1999	OLS (pool effects), fixed effects, and random effects	FDI has marginally significant positive effect on economic growth
Dabla-Norris et al. (2010)	52 LICs	1974-2008	GMM panel data	FDI has no significant impact on growth in the whole sample, but is significant and positively associated with growth in the non-fuel exporting countries sub-sample
Lumbila (2005)	47 SSA countries	1980-2000	Seemingly Unrelated Regression (SUR) weighted least squares	Positive impact of FDI on growth which is enhanced by developed infrastructure, lower country risk, and stable macroeconomic environment
Adams (2009)	42 SSA countries	1990-2003	Panel data fixed effect	FDI has no significant positive impact on growth
Naudè (2004)	45 SSA countries	1970-1990	OLS and LAD cross-section regressions, GLS-random effects, fixed effects as well as the dynamic GMM-estimator	FDI has no significant positive impact on growth in OLS and LAD cross-section regressions, but it becomes significant when GLS-random effects, fixed effects and the dynamic GMM-estimator are used
Adhikary (2011)	Bangladesh	1986-2008	Time series analysis	Positive and significant impact of FDI on growth; one-way causality from FDI to growth
Iftikhar (2012)	Bangladesh	1975-2009	Time series analysis	One-way causality from FDI to growth
Rahman (2009)	Bangladesh	1976-2006	Time series analysis	No causal long-run relationship between FDI and growth
Dhakal et al. (2007)	Bangladesh	1980-2001	Time series analysis	No causal long-run relationship between FDI and growth
Shimul et al. (2009)	Bangladesh	1973-2007	Time series analysis	No causal long-run relationship between FDI and growth, but short-run dynamic relation
Hossain & Hossain	Bangladesh	1972-2008	Time series analysis	No causal long-run relationship between FDI and growth, but short-

(2012)				
				run dynamic relation
Obwona (2001)	Uganda	1975-1991	Time series analysis	Positive impact of FDI on growth
Esso (2010)	10 SSA including LICs such as Congo, Kenya and Liberia	1970-2007	Time series analysis	Long-run relationship between FDI and growth in Kenya and Liberia; one-way causality from FDI to growth in Kenya; one-way causality from growth to FDI in Liberia; no long-run relationship between FDI and growth in Congo.
Adnan (2011)	Liberia	1975-2009	Time series analysis	Positive long-run relationship between FDI and growth
Tekin (2012)	Benin, Togo, Burkina Faso, Gambia, Madagascar, Malawi	1970-2009	Time series analysis	One-way causality from FDI to GDP in Benin and Togo. One-way causality from GDP to FDI in Burkina Faso, Gambia, Madagascar and Malawi
Ahmed et al. (2011)	Ghana, Kenya, Nigeria, South Africa, Zambia	1991-2001	Time series analysis	Only in Kenya FDI has a negative impact on growth
Lamine & Yang (2010)	Guinea	1985-2008	Time series analysis	One-way causality from GDP to FDI
Rusuhuzwa & Baricako (2009)	Burundi and Rwanda	1985-2008	Time series analysis	FDI has no significant impact in both countries
de Vita & Kyaw (2009)	126 developing countries distinguishing between low, lower-middle, and upper-middle countries	1985-2002	GMM panel data	In LICs: FDI has a negative and significant impact on growth; portfolio investment has no significant impact on growth
Choong et al. (2010)	16 LICs	1988-2006	GMM panel data	FDI, portfolio investment and foreign debt have a negative and significant impact on growth, but this impact becomes positive and

				significant in the presence of a well-developed financial sector
Brambila-Macias & Massa (2010)	28 SSA countries	1980-2007	Dynamic OLS methodology (DOLS)	FDI and cross-border bank lending have a significant and positive impact on growth, while portfolio equity flows and bonds flows have no growth impact
Brambila-Macias et al. (2011)	All African countries (SSA and North Africa), distinguishing between (1) all African economies; (2) all African economies except the SANE (South Africa, Algeria, Nigeria and Egypt); (3) oil countries; (4) non-oil countries	1995-2007	GMM panel data	FDI and cross-border bank lending have a significant and positive impact on growth in the whole sample, and the impact of FDI is larger than that of cross-border bank lending. Cross-border bank lending has a negative and significant impact on growth in the oil countries sub-sample

Source: Author's elaboration on different sources.

Table A2: Types of capital controls in African countries

Country	Debt		Equity and FDI	
	Inflows	Outflows	Inflows	Outflows
Angola*	<i>Bonds:</i> --	<i>Bonds:</i> --	<i>Shares:</i> --	<i>Shares:</i> --
	<i>Money Market securities:</i> --	<i>Money Market securities:</i> --	<i>FDI:</i> Effective May 1999: - minimum of \$60,000 for FDI - up to \$25,000: central bank clearance required - above \$25,000: government approval required	<i>FDI:</i> Citizens allowed to invest abroad
	<i>Derivatives:</i> --	<i>Derivatives:</i> --		
Benin*	<i>Bonds:</i> --	<i>Bonds:</i> --	<i>Shares:</i> --	<i>Shares:</i> --
	<i>Money Market securities:</i> --	<i>Money Market securities:</i> --	<i>FDI:</i> Reporting required only for statistical purposes	<i>FDI:</i> Subject to approval; maximum of 75% may be financed by foreign loans.
	<i>Derivatives:</i> --	<i>Derivatives:</i> --		
Botswana	<i>Bonds:</i> non-residents max 20% of government bonds	<i>Bonds:</i> no controls, listing requirements	<i>Shares:</i> controls	<i>Shares:</i> no controls

	<i>Money market securities:</i> non-residents not allowed to purchase central bank securities	<i>Money market securities:</i> no controls		<i>FDI:</i> no controls
			<i>FDI:</i> no controls	
	<i>Derivatives:</i> no controls	<i>Derivatives:</i> no controls		
Cameroon ¹	<i>Bonds:</i> controls	<i>Bonds:</i> controls	<i>Shares:</i> controls on issuing, advertising, and sale of foreign securities of more than CFAF 10 million	<i>Shares:</i> controls
	<i>Money market securities:</i> controls	<i>Money market securities:</i> controls	<i>FDI:</i> no controls if below CFAF 100 million	<i>FDI:</i> no controls if below CFAF 100 million
	<i>Derivatives:</i> not applicable	<i>Derivatives:</i> not applicable		
Chad ¹	<i>Bonds:</i> not regulated	<i>Bonds:</i> controls	<i>Shares:</i> not regulated	<i>Shares:</i> controls
	<i>Money market securities:</i> controls on sale or issue by residents abroad	<i>Money market securities:</i> controls	<i>FDI:</i> no controls if below CFAF 100 million	<i>FDI:</i> no controls if below CFAF 100 million
	<i>Derivatives:</i> controls on sale or issue by residents abroad	<i>Derivatives:</i> controls		
Comoros*	<i>Bonds:</i> --	<i>Bonds:</i> --	<i>Shares:</i> --	<i>Shares:</i> --

	<i>Money Market securities:</i> --	<i>Money Market securities:</i> --	<i>FDI:</i> Controlled	<i>FDI:</i> Subject to approval on underlying transactions
	<i>Derivatives:</i> --	<i>Derivatives:</i> --		
Congo, Dem. Rep. *	<i>Bonds:</i> --	<i>Bonds:</i> --	<i>Shares:</i> --	<i>Shares:</i> --
	<i>Money Market securities:</i> --	<i>Money Market securities:</i> --	<i>FDI:</i> Subject to license from central bank	<i>FDI:</i> Subject to license from central bank
	<i>Derivatives:</i> --	<i>Derivatives:</i> --		
Ethiopia*	<i>Bonds:</i> -- <i>Money Market securities:</i> -- <i>Derivatives:</i> --	<i>Bonds:</i> -- <i>Money Market securities:</i> -- <i>Derivatives:</i> --	<i>FDI:</i> Foreigners can hold up to 100% of share in any ventures, excluding banking, insurance, and transport; Investment restricted in some sectors; tax incentives for FDI.	<i>FDI:</i> --
Country	Debt		Equity and FDI	
	Inflows	Outflows	Inflows	Outflows
Gabon*	<i>Bonds:</i> --	<i>Bonds:</i> --	<i>Shares:</i> --	<i>Shares:</i> --
	<i>Money Market securities:</i> --	<i>Money Market securities:</i> --	<i>FDI:</i> Minimum national shareholding of 10% of capital	<i>FDI:</i> Must be declared at MOFBP
	<i>Derivatives:</i> --	<i>Derivatives:</i> --		

Ghana	<i>Bonds:</i> non-residents allowed to invest in securities with more than three years maturity	<i>Bonds:</i> controls, except for residents purchasing bonds abroad	<i>Shares:</i> no controls	<i>Shares:</i> controls for non-residents' sale or issue locally
	<i>Money market securities:</i> controls on non-residents purchasing domestically	<i>Money market securities:</i> controls on non-resident sale or issue domestically	<i>FDI:</i> controls	<i>FDI:</i> no controls
	<i>Derivatives:</i> no controls	<i>Derivatives:</i> controls on non-resident sale or issue domestically		
Kenya*	<i>Bonds:</i> --	<i>Bonds:</i> --	<i>Shares:</i> --	<i>Shares:</i> --
	<i>Money Market securities:</i> --	<i>Money Market securities:</i> --	<i>FDI:</i> No controls	<i>FDI:</i> No controls
	<i>Derivatives:</i> --	<i>Derivatives:</i> --		
Mauritius	<i>Bonds:</i> no controls	<i>Bonds:</i> no controls	<i>Shares:</i> controls on shares not listed on the stock exchange	<i>Shares:</i> no controls
	<i>Money market securities:</i>	<i>Money market securities:</i> no controls	<i>FDI:</i> sectoral control in	<i>FDI:</i> no controls

	no controls		the sugar industry	
	<i>Derivatives:</i> no controls	<i>Derivatives:</i> no controls		
Mozambique	<i>Bonds:</i> controls	<i>Bonds:</i> controls	<i>Shares:</i> controls	<i>Shares:</i> controls
	<i>Money market securities: controls</i>	<i>Money market securities: controls</i>	<i>FDI:</i> controls	<i>FDI:</i> controls
	<i>Derivatives:</i> controls	<i>Derivatives:</i> controls		
Namibia	<i>Bonds:</i> controls on resident sale or issue abroad	<i>Bonds:</i> controls on resident purchase abroad of more than N\$2 million	<i>Shares:</i> controls on resident sale or issue abroad	<i>Shares:</i> control on resident purchase abroad of more than N\$2 million
	<i>Money market securities: controls on resident sale or issue abroad</i>	<i>Money market securities: controls on resident purchase abroad of more than N\$2 million</i>	<i>FDI:</i> no controls	<i>FDI:</i> controls
	<i>Derivatives:</i> controls on resident sale or issue abroad	<i>Derivatives:</i> controls on resident purchase abroad of more than N\$2 million		
Nigeria ²	<i>Bonds:</i> no controls ²	<i>Bonds:</i> no controls	<i>Shares:</i> no controls	<i>Shares:</i> no controls

	<i>Money market securities:</i> controls on resident purchases abroad		<i>FDI:</i> no controls, only registration	<i>FDI:</i> no controls
	<i>Derivatives:</i> no controls	<i>Derivatives:</i> no controls		
Seychelles ³	<i>Bonds:</i> no controls	<i>Bonds:</i> controls	<i>Shares:</i> no controls	<i>Shares:</i> no controls
	<i>Money market securities:</i> no controls	<i>Money market securities:</i> no controls	<i>FDI:</i> no controls	<i>FDI:</i> controls
	<i>Derivatives:</i> no controls	<i>Derivatives:</i> no controls		

Sources: IMF (2008); Ndikumana (2003).

Notes: 1 Movements of capital within the CEMAC are not subject to exchange controls. 2 This information is not based on the AREAER, but on reporting from other sources. 3 Even though there are no legal controls, the country does not have free availability of foreign exchange for capital account items. 4 Capital transactions between WAEMU countries are unrestricted. * Data are as of 1999. MOFBP = Ministry of Finance and Budget Planning. ZIC = Zimbabwe Investment Center.



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