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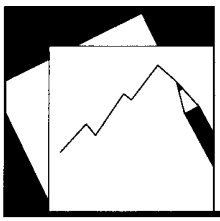

IMF Working Paper

One-Size-Fits-One: Tailor-Made Fiscal Responses to Capital Flows

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Fiscal Affairs Department

One-Size-Fits-One: Tailor-Made Fiscal Responses to Capital Flows

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Abstract

This paper surveys policy responses in recent years to capital inflows in a diverse group of countries that are represented by the Netherlands at the IMF Executive Board. Based on the findings from cross-country empirical literature, the paper distills some guiding principles for policy responses to excessive capital inflows, depending on country-specific circumstances and with a particular focus on fiscal policy. In addition to considering the conventional macroeconomic and structural policy tools, the paper also discusses the role of microfiscal policies in affecting the size and the composition of capital inflows. While conditions in these countries have changed very recently, the policy principles remain salient.

JEL Classification Numbers: F21, H30, H87.

Keywords: Capital Inflows, Fiscal Policy, Micro-Fiscal Measures.

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I. INTRODUCTION

This paper surveys policy responses to capital inflows in a diverse group of countries that are represented by the Netherlands at the IMF and the World Bank Executive Board (the "G-11" countries).[2] [3] Over the past few years and up until the recent financial crisis events, these countries experienced large capital account surpluses. These surpluses were accompanied by sizable current account deficits that exceeded equilibrium levels implied by economic fundamentals in some countries. These imbalances increased over time, with larger current account deficits financed by even larger capital inflows in some countries. At the same time, a number of the economies began to show signs of overheating. While high capital inflows were not initially inconsistent with these countries' low initial levels of capital stock and high returns on investment, in retrospect they came to pose risks to reversal, and hence, macroeconomic stability.

This paper considers whether the rapid increase in capital inflows was consistent with macroeconomic fundamentals in these countries and describes policy measures that were undertaken to manage the inflows. Most countries used available short-term policy tools to address the inflows. In particular, sterilized intervention and capital control measures were among the most common policy responses. Fiscal tightening was undertaken in less than half of the countries, while in some cases fiscal policy was procyclical. The least common response was exchange rate appreciation, reflecting the pegged exchange rate regime in some countries and already large current account deficits in others.

Based on the findings from cross-country empirical literature, the paper proposes some guiding principles for policy responses to excessive capital inflows, depending on country-specific circumstances and with a particular focus on fiscal policy. These recommendations may appear to be less pressing against the backdrop of potential capital flight from emerging markets in the context of the financial crisis. However, imprudent management of capital inflows likely exacerbated the macroeconomic fallout from the financial crisis in some countries. This latest episode of excessive capital inflows resulting in a sudden stop offers a number of important lessons going forward for managing capital flows in ways that would promote economic development, while containing macroeconomic risks.

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[2] This paper was first presented at a meeting of the Netherlands-led IMF and World Bank constituency in Amsterdam, the Netherlands, on June 7, 2008.

[3] The IMF's Netherlands' constituency consists of Armenia (ARM), Bosnia and Herzegovina (BIH), Bulgaria (BGR), Croatia (HRV), Cyprus (CYP), Georgia (GEO), Israel (ISR), Macedonia (MKD), Moldova (MDA), Montenegro (MNE), the Netherlands (NDL), Romania (ROM), and Ukraine (UKR). This paper focuses on the 11 countries (excluding Israel and the Netherlands) that have experienced large capital inflows. In the interest of brevity these countries are labeled G-11 in the text.

In addition to considering the conventional macroeconomic and structural policy tools, the paper also discusses the role of microfiscal policies in affecting the size and the composition of capital inflows. The rest of the paper is organized as follows. Section II reviews recent experience with capital inflows in G-11 countries, including their policy responses. Section III proposes some guiding principles on managing capital inflows, depending on the country's initial conditions and the causes and the nature of the inflows. Section IV concludes.

II. Capital Inflows in the G-11 Countries

A. Recent Experience and Stylized Facts

In the past few years and up until the recent financial crisis, emerging markets as a group experienced large current account surpluses accompanied by strong capital inflows, allowing them to build up sizable reserves (Figure 1, top chart). While this picture is dominated by a few large players, such as China, many other emerging markets experienced a combination of current account and capital account surpluses during 2003–07 (Figure 1, bottom chart).

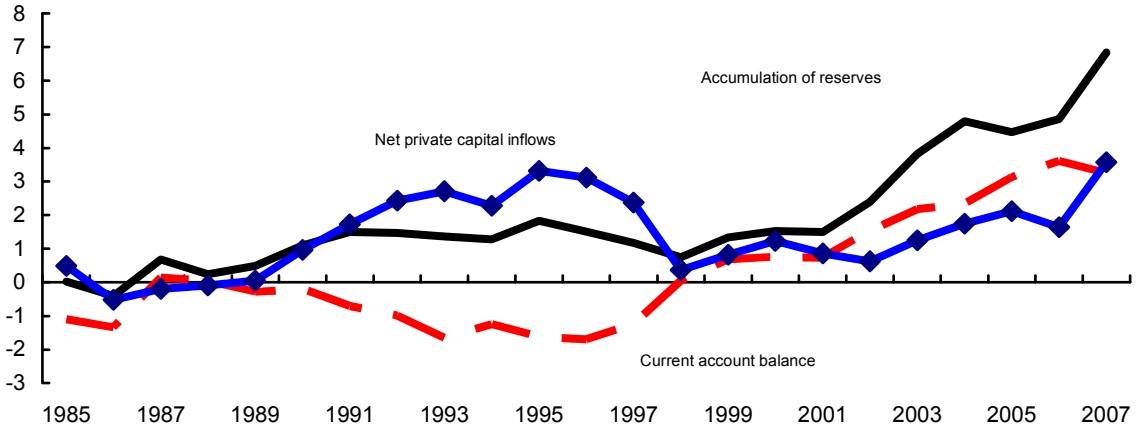
The picture is somewhat different for the G-11 countries. In recent years, most of these countries saw sizable current account *deficits* accompanied by equal or larger capital account surpluses (Figure 2, top chart). These imbalances have increased over the past few years with larger current account deficits financed by even larger capital inflows in some countries (Figure 2, bottom chart). While many countries took measures to respond to the rapid increase in capital inflows, these inflows were not always seen as a cause for concern, because of low initial capital stocks.

Indeed, large capital inflows, even when accompanied by current account deficits, need not always give rise to concern. Such inflows could be a rational market response to high returns on investment, reflecting the scarcity of capital in the recipient country. Capital inflows can be quite beneficial in this situation by making foreign savings available to finance domestic investment, thereby enhancing economic development and growth.

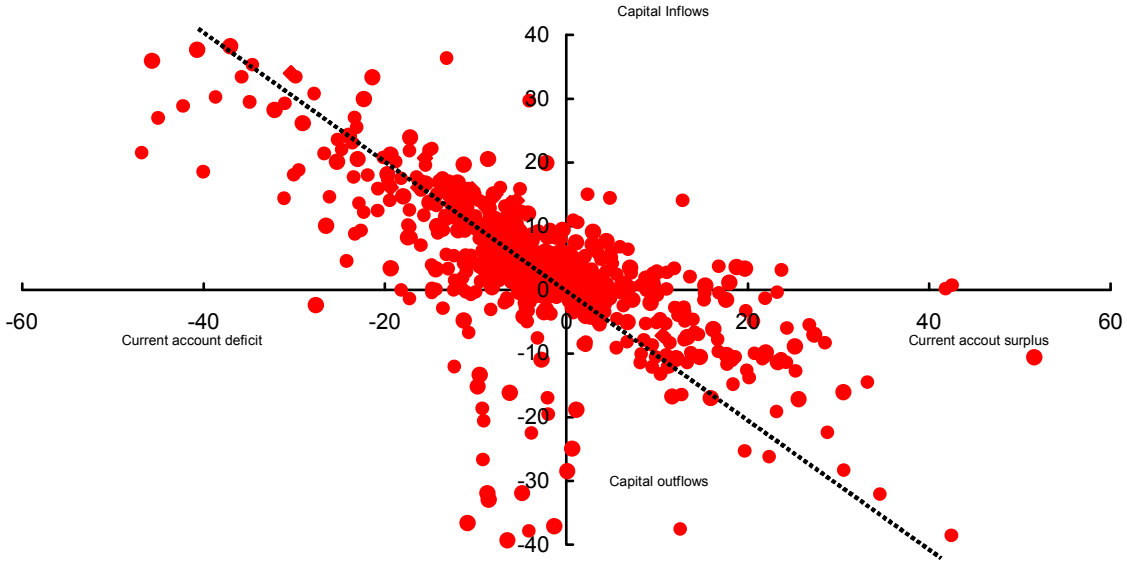
This phenomenon was particularly true for former transition economies—where the initial capital stock prior to market liberalization was low or obsolete. These economies account for a sizable share of the G-11 countries. Indeed, a few years ago, empirical studies estimated that the potential future equilibrium capital inflows for Central and Eastern European countries could exceed their GDP by several times (Lipschitz et al., 2002), while bank credit would rise rapidly relative to GDP from a low base (Cottarelli et al., 2003). Updated estimates of the equilibrium bank credit to the private sector suggested that most G-11 countries still had considerable room to expand, provided that global liquidity conditions remained favorable (Figure 3). Countries in this situation would run equilibrium current account deficits, often accompanied by relatively fast bank credit growth and an equilibrium appreciation of the real exchange rate.

Figure 1. Emerging Markets: Selected Indicators

Current account balance, net private capital inflows, and reserves
(in percent of total emerging market GDP)

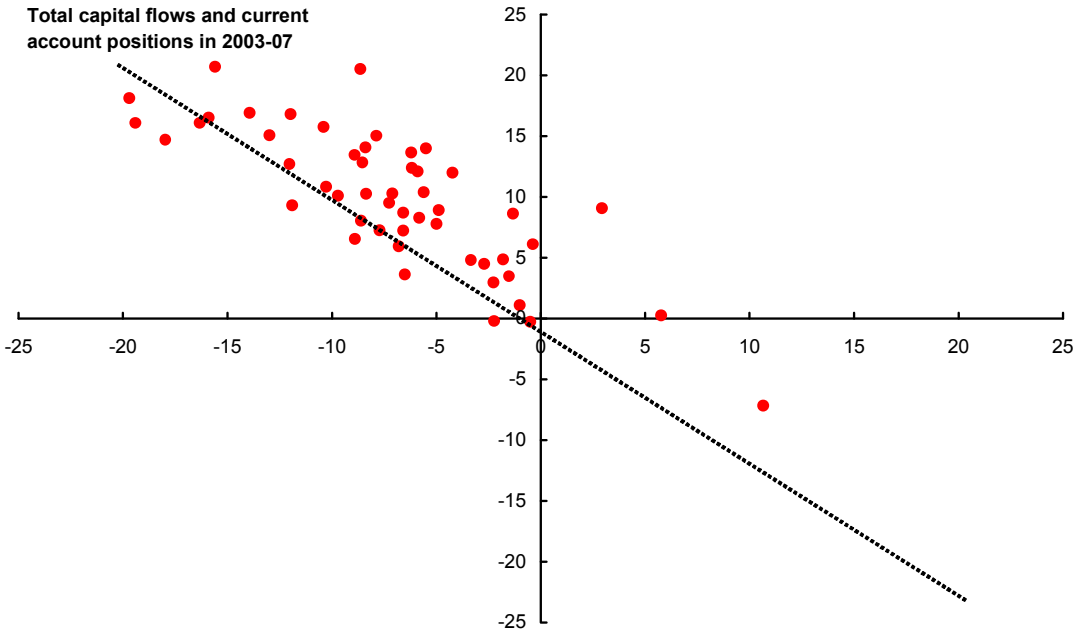


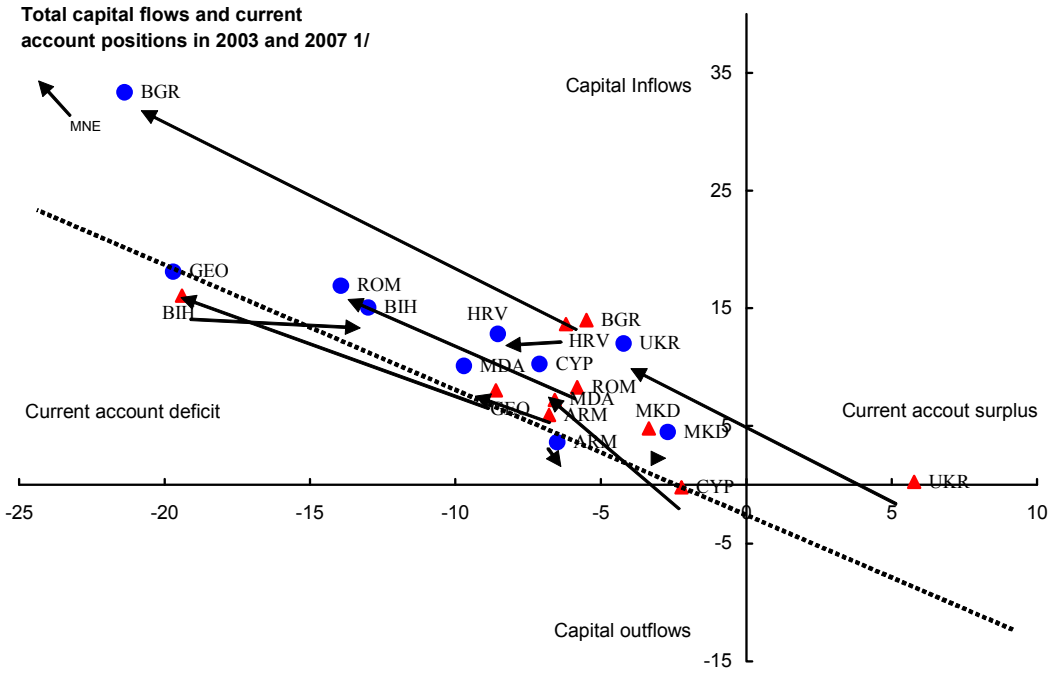
Total capital flows and current account balance, 2003-07
(In percent of GDP)



Source: IMF, World Economic Outlook.

Figure 2. G-11 countries: Total Capital Flows and Current Account Balances, 2003-07
(In percent of GDP)



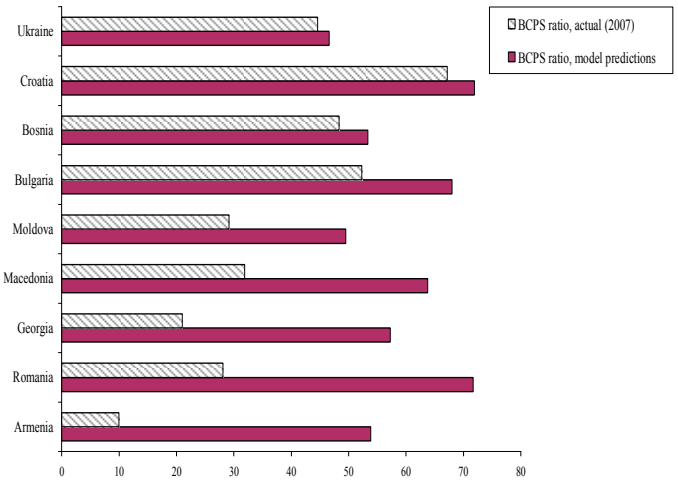


Source: IMF, World Economic Outlook.
1/ Triangles represent 2003 value, circles represent 2007 value.

Nevertheless as recent financial events have confirmed, capital inflows are not without risks:

Overheating. Large capital inflows taking place over short time spans can finance rapid credit expansion, fueling domestic demand and inflation, and bringing about economic overheating. High and rising inflation combined with upward pressures on the nominal exchange rate could result in the real exchange rate overshooting its equilibrium level, giving rise to an unsustainable current account deficit. Moreover, empirical evidence suggests that capital inflows can be procyclical, thus contributing to any existing overheating pressures (Murthy and Phillips, 1996; Kaminsky et al. 2004).

Figure 3. Estimates of the Equilibrium Bank Credit to the Private Sector for G-11 countries 1/
(In percent of GDP)



Source: IMF, *World Economic Outlook*; and IMF staff calculations based on Cottarelli et al. (2003).
1/ Excluding Cyprus and Montenegro.

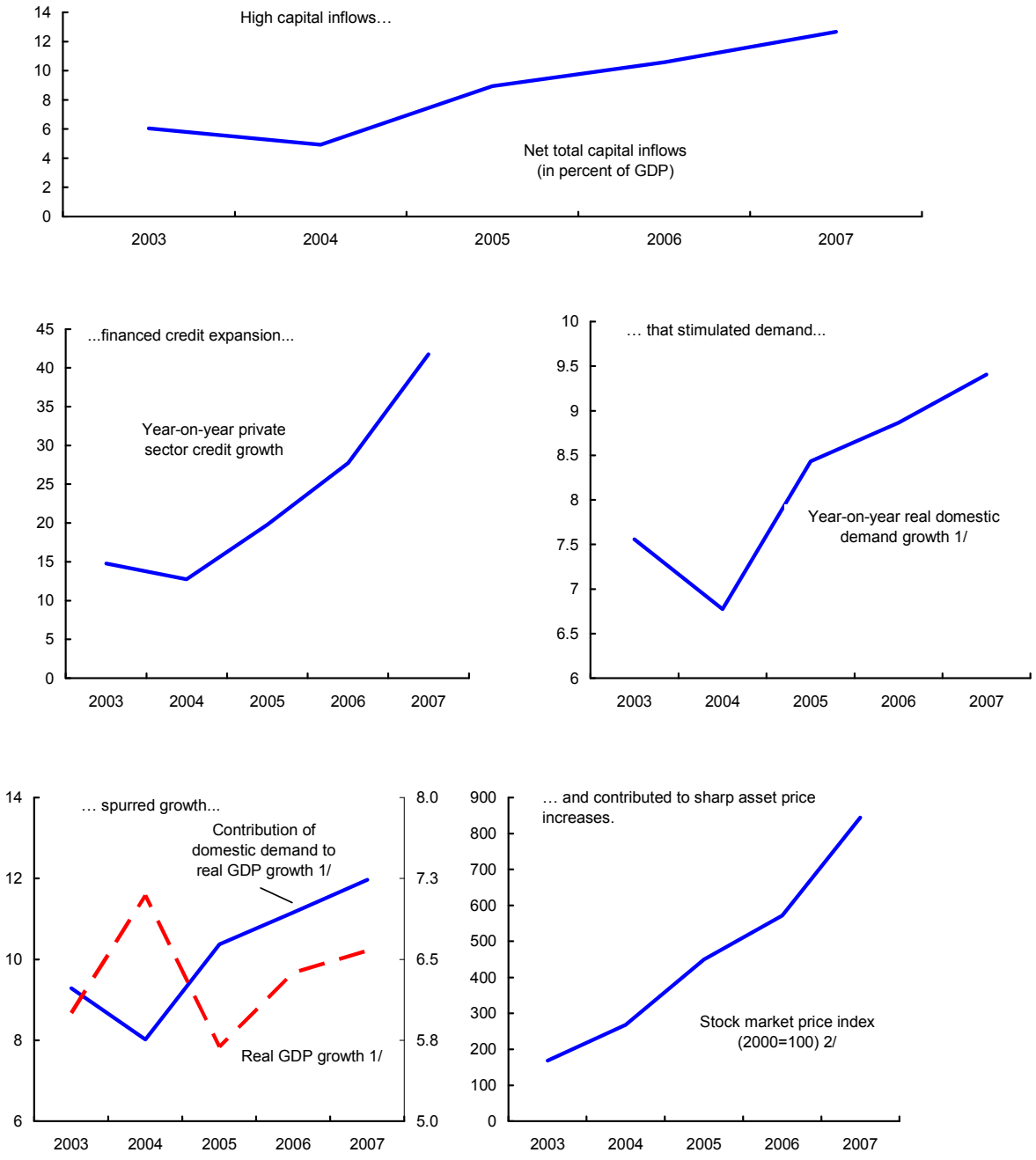
Indeed, signs of overheating emerged in some G-11 countries in the period leading to the financial crisis. Large capital inflows in these countries as a group were accompanied by fast credit growth—often linked to foreign borrowing or borrowing from foreign-owned local banks—strong domestic demand, and booming stock markets (Figure 4). And while inflation remained subdued in some countries, it picked up to double digits in others (Bulgaria, Georgia, Moldova, and Ukraine).

Estimates of equilibrium current account balances for G-11 countries (excluding Montenegro) show current account deficits exceeding their equilibrium levels implied by economic fundamentals in a number of countries (Figure 5). For example, current account deficits in Cyprus, Romania, Bulgaria, Georgia, and Bosnia and Herzegovina exceeded their equilibrium estimates by 4–8 percentage points of GDP. This may have been an indication of an overvalued exchange rate, undermining competitiveness and heightening external vulnerabilities. Current account balances appear to have been broadly in line with fundamentals in Armenia, Croatia, Macedonia, and Moldova. Although in Ukraine, judging by this measure, there was room for exchange rate appreciation at end-2007, this assessment has been overtaken by the recent shocks to Ukraine's current account, including a significant decline in steel prices—Ukraine's main export—and an increase in imported gas prices paid to Russia.

Financial instability. Capital inflows can fuel credit booms and asset price bubbles and trigger related financial sector vulnerabilities. Rapid expansion of credit can be associated

with credit quality weakening, which can be further exacerbated by currency and maturity mismatches on banks' and corporate balance sheets. A sudden correction of asset prices could bring about demand contraction through negative wealth effects and a credit crunch as

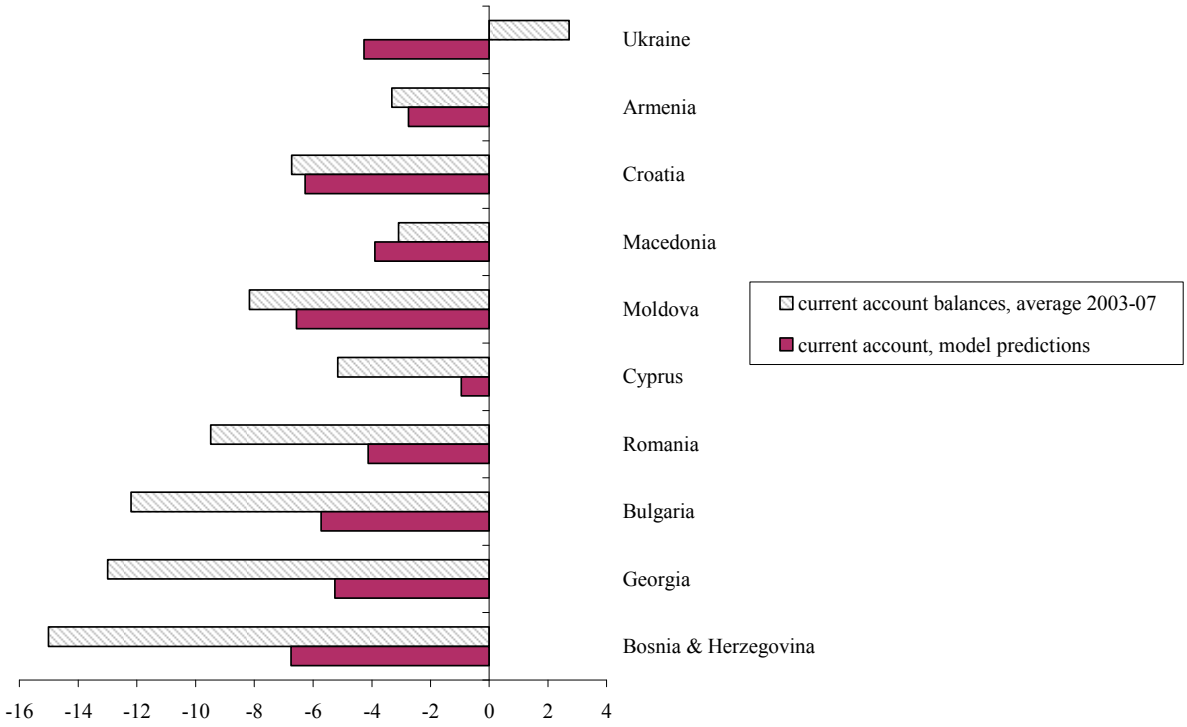
Figure 4. G-11: Financial Developments, 2003-07



Sources: IMF, World Economic Outlook; IMF, International Financial Statistics; Thomson Datastream; and IMF staff estimates.
1/ Excludes Georgia and Montenegro.
2/ Excludes Armenia, Bosnia and Herzegovina, Georgia, Macedonia, Moldova, and Montenegro.

credit institutions adjust their balance sheets. Declining asset prices could cause banks to cut back on lending as they absorb losses and try to reduce their leverage. The resulting higher interest rates and lower domestic demand could trigger economic downturn. Indeed, many of these risks have materialized quite rapidly in emerging market economies as the global financial crisis has continued to unfold.

Figure 5. Estimates of the Equilibrium Current Account Balance for G-11 Countries 1/
(In percent of GDP)



1/ Calculation of equilibrium current account balances is based on the pooled regression results in Rahman (2008).

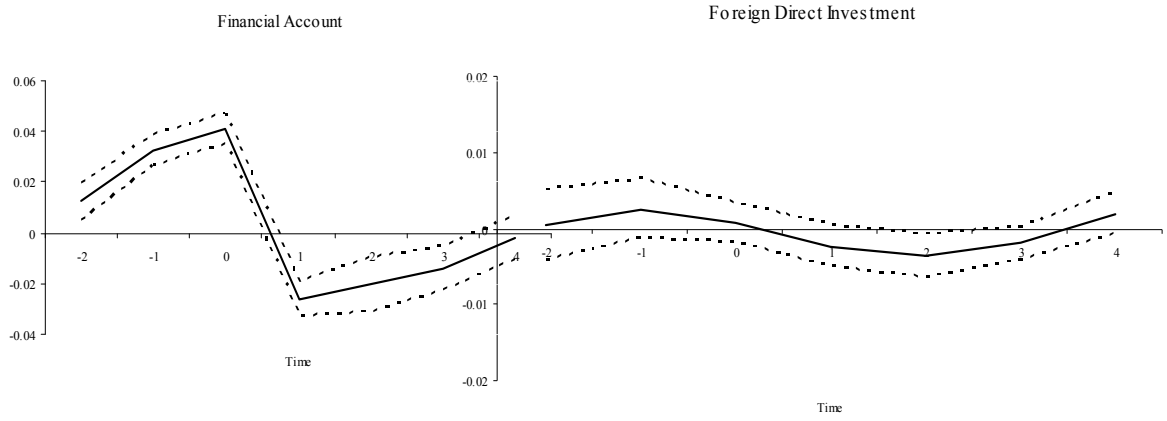
Sudden stops. Capital inflows can also pose the risk of an abrupt reversal, possibly resulting in severe recession. A sudden stop may be met by reserve losses, exacerbating the country's financial vulnerability, and/or by a contraction in the current account deficit brought about by the decline in aggregate demand, resulting in a loss of output and employment (Calvo and Reinhart, 2000). The external shocks associated with the financial crisis make sudden stops a clear and present risk in many emerging markets.

The last two risks underscore the importance of the composition of gross capital inflows. In particular, the prevailing view in the literature is that a high share of FDI in total inflows is a comfort factor primarily because FDI is less likely than other inflows to be unwound quickly in response to changes in market sentiment. Indeed, a recent empirical study that looked at the composition of all financial flows around sudden stops in crises during 1980–2004 found that FDI flows have been remarkably stable (Figure 6 from Becker et al., 2007). In addition,

when world interest rates increase, there is no immediate and direct impact associated with FDI on the payments to be made abroad. Finally, FDI helps boost domestic production, often in the tradable goods sector, and facilitates knowledge and technology transfer that can improve a country's competitiveness.

From this perspective, the countries in the G-11 fared relatively well. Figure 7 shows current and capital account balances of these countries in 2007 including and excluding FDI. Current account deficits are much smaller excluding FDI and are still covered by other types of capital inflows in most countries, although in some cases this favorable position reflects one-off privatization receipts. Nevertheless, it has to be noted that FDI is not without risks and has shown significant volatility in a few isolated, but important, cases (e.g., Russia in the aftermath of the 1998 crisis). Even if not reversed, a slowdown or a stop in FDI flows can further undermine domestic confidence and asset prices with negative repercussions for economic growth and employment.

Figure 6. Composition of Financial Flows Around All Sudden Stops, 1980-2004 (in percentage points of GDP)

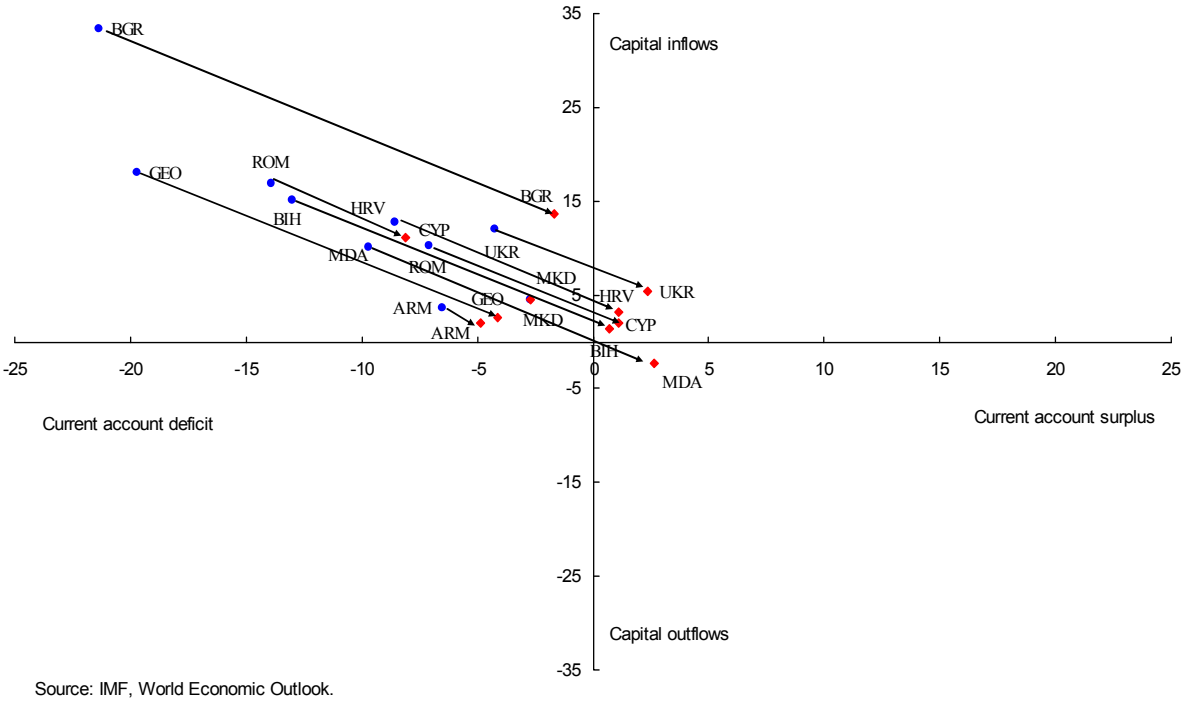


Source: *Balance of Payments Statistics*, International Monetary Fund.

Note: The behavior of different types of flows is illustrated in "sudden stop" time, with t=1 being the year the sudden stop occurred. The solid line represents the average across episodes for each type of financial flow. The dotted lines are one standard error bands. Sudden stops are reversals in the financial account by more than 5 percentage points of GDP. The sample is restricted to instances in which all six subcomponents of the financial account are available for at least a 5-year period around the sudden stop year. The sample consists of 33 episodes: Argentina (2001); Barbados (1992, 2002); Brazil (1983); Chile (1991); Cote d'Ivoire (1983, 1996), Croatia (1998); Czech Republic (1996); Estonia (1998); Korea, Rep. (1997); Latvia (2000); Lithuania (1999); Mauritius (2001); Mexico (1995); Namibia (1991, 1999); Panama (2000); Peru (1998); Philippines (1997); Russian Federation (1998); Senegal (1982); Slovenia (1998); Swaziland (1993); Thailand (1982, 1997); Togo (1992); Turkey (1994, 2001); Ukraine (1998); and Venezuela (1980, 1989, 2002). For each type of financial flow, the entire available sample of countries and years is first regressed on a full set of country and year fixed effects to remove country-specific means and global trends from the data.

As noted above, the sectoral destination of FDI inflows also matters for boosting economic productivity. Table 1 shows the composition of the stock of FDI in selected G-11 countries. These countries have benefited from FDI inflows into manufacturing and services, including financial intermediation, transport and communication, and utilities, which are likely to enhance the future productivity of these economies. However, a sizable portion of the inflows has also gone into nontradable sectors, such as the real estate, construction, and trade, and may have contributed to unsustainable asset price increases in some of these countries.

Figure 7. G-11: Current Account Balance and Total Capital Inflows, 2007 1/ 2/
(In percent of GDP)



Source: IMF, World Economic Outlook.
1/ Circles represent current account balance and total capital flows. Rhombuses represent current account balance and total capital flows net of FDI.
1/ Excluding Republic of Montenegro.

B. Policy Response to Capital Inflows

How did the G-11 countries respond to high capital inflows? Table 2 provides a detailed breakdown of macroeconomic, prudential, and supervisory measures that were recommended in these countries by the IMF and identifies the policy measures that were actually adopted. Figure 8 shows the relative frequency of recommended and adopted policy measures.[4]

[4] Note that while the frequencies of adopted and recommended policy responses could be the same for a given set of measures in Figure 8, the composition of countries could be different. For more detailed information, refer to Table 1.

The most common response was to carry out sterilized intervention and to strengthen financial supervision and prudential regulation. These measures were largely aimed at containing possible financial sector vulnerabilities arising from rapid foreign-financed credit expansion. While the IMF supported the introduction of marginal reserve requirements for excessive credit growth in some countries, a number of countries went beyond that advice by placing ceilings on credit growth and on lending to households.

The least common response was nominal exchange rate appreciation, reflecting the pegged exchange rate regime in some countries. The IMF recommended increased nominal appreciation in 3 out of 9 countries that have not adopted the Euro, but large current account deficits could have rendered exchange rate appreciation a less desirable policy tool in some countries. Correspondingly, sterilized intervention was frequently used to mop up excess liquidity and contain pressures for exchange rate appreciation.

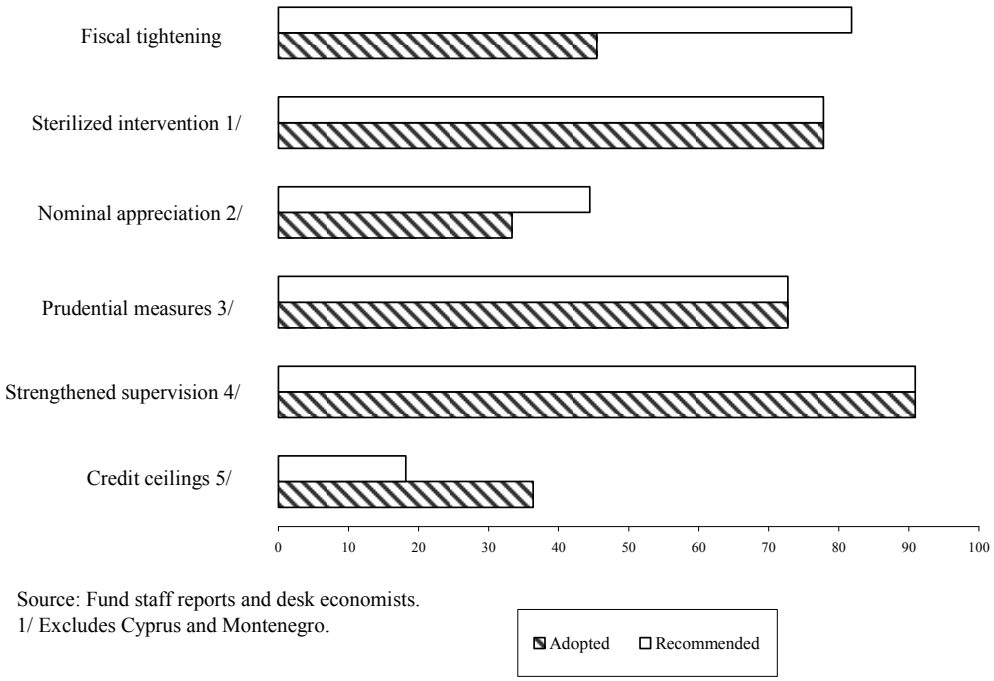
Table 1. Composition of FDI Stock in Selected G-11 Countries 1/

	Bulgaria	Croatia	Macedonia	Romania
	(In percent of total stock)			
Manufacturing FDI	18	24	38	34
Nonmanufacturing FDI	82	76	62	66
Basic services	40	49	40	34
Financial intermediation	18	37	13	22
Transport and communication	18	12	20	8
Utilities	4	1	7	4
Other	42	27	21	32
Trade	13	10	8	12
Hotels and restaurants	1	2	2	...
Real estate and construction	26	4	4	6
Others	2	10	8	13

Source: National bank websites; and Fund staff calculations.

1/ Latest available year: Bulgaria (2007), Croatia (2008Q1), Macedonia (2006), Romania 2006).

Figure 8. Recommended and Adopted Policy Response to Capital Inflows
(In percent of G-11 countries, 2003-2007)



Source: Fund staff reports and desk economists.
1/ Excludes Cyprus and Montenegro.

1/ At least one of the following measures is adopted: raising policy rates, broadening reserve requirements, reserve accumulation, and sterilization. Excludes Cyprus and Montenegro.
2/ Excludes Cyprus and Montenegro.
3/ At least one prudential measure listed in Table 2 is adopted.
4/ At least one supervisory measure listed in Table 2 is adopted.
5/ At least one of the following measures is adopted: risk-based capital charge or marginal reserve requirement for excessive credit growth; credit limits for HH lending; and ceilings on credit growth. The IMF recommended a marginal reserve requirement for excessive credit growth in Moldova and Montenegro.

While fiscal tightening was recommended in 9 out of 11 countries, it was undertaken in just three countries. Where fiscal restraint was recommended it was mainly aimed at reducing current account pressures (Bulgaria, Croatia, Montenegro, Romania) and containing economic overheating (Georgia, Ukraine). Fiscal tightening was intended to play a supportive role in tackling inflation and reducing external vulnerabilities in Moldova and Armenia. In Cyprus, fiscal policy was geared toward meeting Maastricht criteria and adopting the Euro. In some countries where fiscal retrenchment was not implemented, the authorities were more sanguine than IMF staff about the risks emanating from rising external imbalances. They also pointed to large social and infrastructure needs that constrained the use of fiscal policy for managing domestic demand. In other cases, broadly sustainable fiscal positions and fragile political environments made it politically difficult to implement fiscal tightening.

Table 2. G-11: Fund Policy Advice in Response to Capital Inflows 1/

Policy tool	ARM	BIH	BGR	HRV	CYP	GEO	ISR	MKD	MDA	MNE	NLD	ROM	UKR
Macroeconomic measures													
Fiscal tightening	☑		☐	☑	☑	☐			☐	☐		☐	☐
Monetary tightening		CB	CB		EU			EU		EU			
Raising policy rates	☑					✔			☑			☐	☐
Increasing/broadening reserve requirements		✔	☑	☑								✔	✔
Allow nominal appreciation	☐	CB	CB	✔	EU			EU	☑	EU		☑	☐
Limit nominal appreciation		CB	CB		EU	☑		EU		EU			
Reserve accumulation						☐			☑				
Sterilize reserve accumulation	☑					☑			☑				☐
Prudential and administrative measures													
Raise or differentiate risk weights or min. capital adequacy ratio			✔	✔		✔		☐		☑			☑
Stregthen loan loss provisioning		☐	✔	✔	☐	✔		☐		☑		☐	☑
Raise risk weight of, provisioning for, or limit exposure to, FX risk		☑	✔	✔		☐						☑	☑
Risk-based capital charge or marginal reserve requirement for excessive credit growth			✔	✔					☐	☑			
Mandatory loan-to-income or loan-to-value limits			✔		✔							✔	
Credit limits for HH lending										✔		✔	
Ceiling on credit growth				✔						✔			
Supervisory and market development measures													
Stregthen monitoring improve risk management, expand stress testing	☑	☑	☑	☑	☑	☐		☑	☑	☑		☑	
Expand cross-border supervisory coordination		☑	✔	☑					☐	☑		✔	
Improvements in credit registry	☑	✔	☑	☑		✔		☑	☐	☑		☑	
Stregthenening of property rights	☑					☐				☑		☑	
Capital market development for alternative funding sources and/or hedging	☑			☐					☐	☑		☑	
Transparency/moral suasion	☑		☑	✔		☐			☑	☑		☑	

Source: IMF staff reports.
1/ ☐ measure recommended, ✔ measure adopted. CB -- currency board; EU -- high euroization, peg to the euro, or adoption of the euro.

In a number of countries, fiscal policy was procyclical. Over the past few years, real public spending growth exceeded real GDP growth in G-11 countries as a group (Figure 9, top panel), while some countries relaxed their fiscal stance (Figure 9, bottom panel). In particular, during 2003–07, for ten of the G-11 countries for which estimates of structural balances—fiscal deficits adjusted for cyclical factors—are available, these balances improved in only three cases (Bosnia and Herzegovina, Croatia, and Cyprus), in two other cases they remained broadly unchanged (Bulgaria and Macedonia), and in the remaining five they deteriorated (Armenia, Georgia, Moldova, Romania, and Ukraine). Procyclicality of

fiscal policy is not unusual in countries experiencing capital inflows. In fact, empirical evidence suggests that periods of capital inflows are often associated with expansionary macroeconomic policies (Kaminsky et al., 2004). It can also be argued that effective spending on infrastructure in some of these countries could have positive longer-term economic benefits by improving competitiveness and boosting economic growth.

III. Tailoring Policy Response to Country-Specific Circumstances

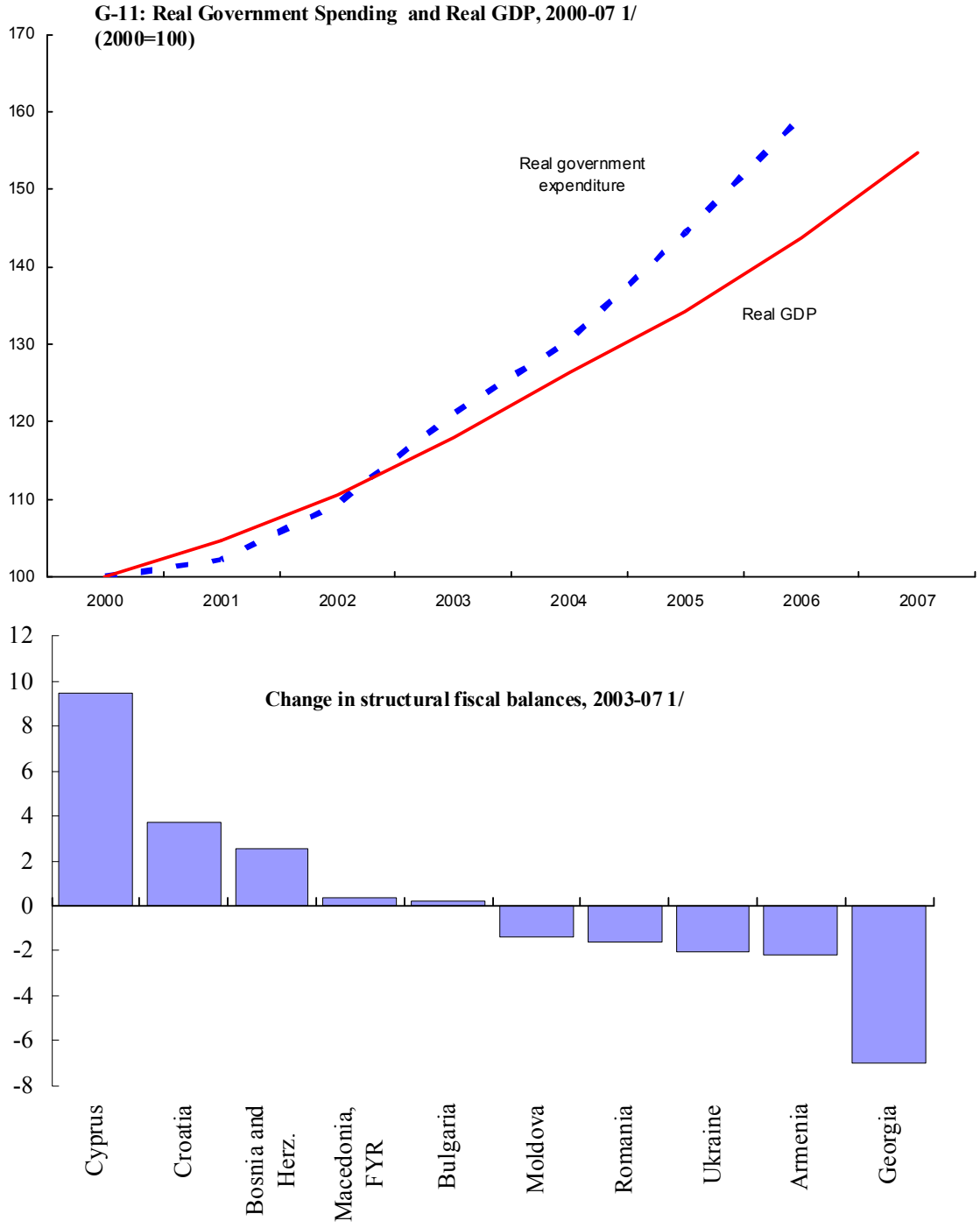
Appropriate policy responses to capital inflows depend on a country's initial conditions, and in particular on its current account and fiscal positions. The causes and the composition of the inflows also matter for tailoring policy responses. As discussed above, an equilibrium market response to the demand for investment in countries with low initial levels of capital stock does not necessarily warrant a policy reaction. However, in a number of G-11 countries, capital inflows have been associated with rising demand and inflationary pressures and have been accompanied by current account deficits that appear to be no longer in line with economic fundamentals. In these countries, an appropriate mix of monetary, fiscal, and structural policy measures might have reduced potential risks associated with large capital inflows.

While the right policy mix needs to be tailored to country-specific circumstances, a number of guiding principles can be identified, depending on the causes and nature of the excessive capital inflows. In particular, when designing a policy package it is important to understand whether the inflows are temporary or persistent.

- Temporary inflows are usually driven by ad hoc factors, including speculative inflows—sometimes as a result of herd behavior. If unopposed, such inflows would actually move the country away from equilibrium. Other one-off inflows, such as privatization receipts, could be relatively benign, especially when deposited with the central bank or used to repay external debt.

- Persistent excess inflows are usually caused by an underlying disequilibrium, including that induced by policies. Fiscal policy that is too loose can result in higher interest rates and stronger domestic demand, which could attract capital inflows and weaken current account balances. Monetary and exchange rate policies can also play an important role in attracting excessive capital inflows, including as a result of exchange rate misalignment.

Figure 9. G-11 Countries: Fiscal Stance



Sources: IMF, World Economic Outlook; and IMF staff calculations.
1/ Excluding Republic of Montenegro.

While in practice it may be difficult to distinguish between temporary and persistent inflows, a few metrics may be useful for this purpose. First, as discussed above, the composition of capital inflows is important, with a high share of FDI indicating a potentially more sustainable capital account position. Second, monitoring the terms and the use of foreign credit and developments in domestic asset prices could also provide clues on the nature of and the risks posed by the inflows, highlighting the importance of effective data collection and monitoring. Adverse developments should, of course, trigger a policy response.

A. Managing Temporary Capital Inflows

Temporary inflows can be addressed by two kinds of short-term tools: sterilized intervention or capital control and prudential measures. Sterilized intervention is aimed at limiting the liquidity effects of foreign exchange purchases of the central bank. This is usually achieved by selling domestic securities or increasing the reserve requirements by the central bank. Modern capital controls are usually realized by placing reserve requirements on some or all capital inflows (as was done in Chile in 1990, and more recently in Thailand in 2006). Other prudential measures include raising minimum capital-adequacy ratios for financial institutions; strengthening loan-loss provisioning; placing limits on foreign currency exposure; and introducing ceilings on short-term external borrowing or credit growth.[5] Fiscal policy is not a particularly effective tool for managing temporary private inflows, because it is not sufficiently flexible in responding to short-term developments in a timely manner.

- **Sterilized intervention.** This tool can be effective in resisting exchange rate overshooting associated with temporary capital inflows by containing both the nominal appreciation and inflation. However, sterilized intervention can be costly, since the financial return on reserves tends to be lower than the interest paid on domestic debt, and is unlikely to be sustainable over long periods of time (Hauner, 2005; Dieterich, 2008).[6] Nevertheless, recent studies (IMF, 2007a) find that episodes of short-term capital inflows (those with duration of less than two years) typically featured stronger sterilized intervention, more limited real exchange rate appreciation, and better post-inflow growth performance, although the direction of causality among these phenomena is difficult to establish from a statistical perspective. Indeed, one can identify cases in which countries managed to contain real appreciation through sterilized intervention for quite some time (e.g., Hungary in the 1990s and China until recently). In the case of China, captive capital markets allowed limiting sterilization costs.

[5] For a more detailed discussion of the use of prudential regulations, including by some G-11 countries, see Dieterich (2008).

[6] Hauner (2005) estimates quasi-fiscal costs associated with sterilized intervention in Emerging Europe and the countries of the Middle East and Central Asia in the range of 0.5-0.6 percent of GDP per year (Hauner, 2005).

- **Capital control measures.** Other common means to manage temporary capital inflows include capital controls, credit ceilings, and other prudential regulation. The consensus in the literature is that while these tools can temporarily change the composition of inflows by lengthening their maturity, they do not appear to affect the size of the inflows (Forbes 2003; Montiel and Reinhart 1999). Moreover, these tools may become less effective over time as markets adapt and find ways to circumvent them. Finally, good governance and adequate administrative capacity are important preconditions for the effectiveness of any capital control measures (Kawagi and Takagi, 2004).

Sterilized intervention and capital controls were used relatively frequently in the G-11 countries. While these measures are better utilized to address temporary factors, in retrospect, capital inflows to some of these countries appear to have been caused by more persistent underlying disequilibria. A more desirable policy response in such situations would have been to address the cause of the imbalance. The specific type of response would then depend on the nature of the imbalance. The next section discusses these imbalances.

B. Responding to Persistent Capital Inflows: The Role of Fiscal Policy

While in any given country there could be multiple causes of imbalances, this section focuses on three common causes of excessive capital inflows: loose fiscal policy, an undervalued exchange rate, and an unsustainable current account deficit.[7] Both macro- and microeconomic policy responses are considered with a particular focus on the role of fiscal policy. Where past fiscal policy is at the root of external imbalances, it should also be a primary tool in correcting them. On the other hand, when excessive capital inflows are attracted by exchange rate misalignment, the role of fiscal policy should be more nuanced.

Macroeconomic policy response

Loose fiscal policy. Fiscal policy will have to play a key role in correcting imbalances when an inappropriate fiscal stance is the main cause of the inflows. Empirical evidence suggests a strong causality between a debt-financed fiscal expansion and capital inflows (Murthy and Phillips, 1996, Kaminsky et al. 2004). A loose fiscal policy can result in excess demand, an excessive current account deficit (the twin deficit situation), and high interest rates attracting capital inflows. In this case, fiscal policy should be tightened to reduce economic overheating and contain excessive capital inflows.

Cross-country experience with excessive capital inflows and the associated economic overheating underscores the importance of avoiding procyclical fiscal policies. As discussed

[7] For a broader taxonomy of causes and responses to excessive capital inflows see Ghosh et al. (2008). This paper employs a similar approach, but with an added emphasis on fiscal policy, including the micro-fiscal policy response.

earlier, procyclical policies, although potentially damaging, are not uncommon during episodes of capital inflows. Expansionary fiscal policies have also been present in some G-11 countries in recent years (Figure 9).

The risks of procyclical policies should not be underestimated. Procyclical fiscal policies can lead to a perverse spiral in which capital inflows, regardless of their cause, contribute to a temporary revenue boom, easy financing conditions, increased public spending, overheating, and higher interest rates that attract even more capital inflows.[8] The risk is that the real exchange rate will become overvalued, causing a loss of competitiveness and an unsustainable current account deficit.[9] Fiscal policy may need to be tightened to reduce external imbalances just as output falls, further exacerbating output contraction. In other words, a procyclical fiscal policy during good times may necessitate a procyclical fiscal response during bad times, amplifying the business cycle, damaging long-term growth prospects, and undermining fiscal sustainability (Balassone and Kumar, 2007).

Recent empirical research presented in the IMF's World Economic Outlook (WEO) provides further evidence supporting the importance of avoiding procyclical fiscal policies during episodes of capital inflows.[10] The study concludes that strong increases in government spending during the inflow period are typically associated with hard landing, while lower spending leads to lower real appreciation, thereby reducing the risk of exchange rate overshooting. The study also finds that lower spending is more effective in mitigating financial and economic risks when capital inflows are accompanied by current account deficits—a situation faced by most G-11 countries.

However, the task of calibrating fiscal policy in response to capital inflows may be complicated by the difficulty in assessing the macro-fiscal stance. As discussed above, capital inflows are often associated with overheating and may bring about cyclical increases in tax revenues.[11] When such revenue increases are matched with spending increases, the conventional measure of the fiscal stance—the overall balance—may not register the underlying fiscal expansion. This underscores the importance of analyzing fiscal indicators that are adjusted for cyclical factors, including structural balances (Balassone and Kumar, 2007).

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[8] While it can be argued that the composition of expenditure matters for competitiveness, with public spending on infrastructure potentially boosting economic growth in the longer term, these considerations would need to be carefully weighted against the potentially high costs of overheating, especially in economies with low absorption capacity and weak public financial management systems.

[9] Froot and Rogoff estimate that an unanticipated increase in government consumption equal to one percent of GNP results in a 4 percent appreciation in the real exchange rate (Froot and Rogoff, 1991).

[10] For further details see Chapter 3 in the IMF, 2007a.

[11] Automatic stabilizers are relatively small in some G-11 countries, because of low level of taxation and its limited progressivity—five of the eleven countries follow a flat tax approach.

An undervalued exchange rate accompanied by a current account surplus. Capital inflows can be caused by an undervalued exchange rate under a pegged or managed exchange rate regime. Similarly, the inflows may be caused by the attempt to run an independent monetary policy under a pegged exchange rate (for example, when interest rates abroad fall or when they are high domestically because of higher inflation). In this case capital inflows are attracted by expectations of future appreciation and will continue until the inconsistency in the monetary and exchange rate policies is removed.

The right policy response would be to allow the exchange rate to appreciate. A fiscal tightening does not seem to be very helpful—in fact, depending on the circumstances, a fiscal expansion may be needed to support aggregate demand when the exchange rate appreciates. While few G-11 countries fall into this category (with most countries running a current account deficit), a few countries could benefit from a more flexible exchange rate policy. Indeed, the exchange rate was allowed to appreciate in two out of the four cases where such a recommendation was made by the IMF.

An overvalued exchange rate accompanied by an excessive current account deficit. If the inflows are financing a current account deficit in the presence of an overvalued exchange rate, the right solution is to allow the exchange rate to devalue. While a fiscal tightening can help to contain the current account deficit and to induce further depreciation through lower interest rates and inflation, the role of fiscal policy in resolving this particular imbalance is limited. First, prices and wages typically exhibit downward rigidities, reducing the impact of fiscal policy on real exchange rate.[12] And second, it may be politically difficult to tighten fiscal policy when the fiscal accounts are sound otherwise. However, it can be argued that the fiscal tightening can help to reduce the existing imbalance and ease pressures on the exchange rate. Handling an overvalued exchange rate is especially difficult for countries with a formal peg. Indeed, the last orderly step depreciation was undertaken in the early 1990s. After that, step depreciations have typically caused a "rush-to-the-exit" and an exchange rate overshooting.

Micro-fiscal policy response

In addition to adjusting the overall macro-fiscal stance, a number of complementary micro-fiscal measures can be taken to correct external imbalances. These measures include expenditure policy, tax policy, and debt management strategy.

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[12] Theoretical research backed by empirical evidence from OECD countries suggests that in the presence of price and wage rigidities, a decrease in government spending on wages reduces the real wage and increases profitability, output, and employment in the tradable goods sector. The effect on wages and profitability is bigger under a flexible, than under a fixed exchange rate regime, because in addition to lower labor costs, the traded sector also benefits from the induced nominal exchange rate depreciation (Lane and Perotti, 2003).

Expenditure policy affects the external account primarily through the composition of spending. A shift in expenditure composition between tradables and nontradables can affect the external current account and capital inflows that finance it. For example, a reduction in government spending on nontradables can reduce domestic inflation and slow real exchange rate appreciation, mitigating the risks of exchange rate overshooting and economic overheating endemic to the periods of capital inflows (Schadler, 1993). On the other hand, a reduction in government purchases of imports tends to directly strengthen the external current account and would be appropriate during periods of capital outflows (Heller, 1997).

When it comes to adjusting the composition of spending in response to economic overheating, public sector wage policy is key in containing demand pressures and second round effects on inflation because of possible feedback to private sector wages. Pressures to increase public sector wages may be particularly strong when capital inflows feed a sharp increase in asset prices. Moreover, public sector wage increases are usually difficult to reverse. Empirical evidence from OECD countries suggests that a reduction in government spending on wages is associated with an expansion in the traded output and employment and improves the level of profitability in the traded goods sector (Lane and Perotti, 2003). In contrast, during the recent episode of capital inflows, some G-11 countries channeled additional spending to pension and public sector wage increases (Romania, Ukraine).

Tax policy can have powerful effects on capital inflows through three main channels:

- First, empirical evidence suggests that capital inflows, including FDI, are sensitive to taxation. For example, recent studies conclude that the level of corporate income taxation affects capital account and current account flows (Alworth and Arachi, 2007; Keen and Syed, 2006).

- Second, the structure of taxation can sometimes adversely affect the size and the composition of inflows. For example, generous depreciation allowances combined with full deductibility of interest payments under a corporate income tax may favor investment financed by borrowing, rather than retained earnings or equity. Indeed, in some non G-11 central European countries, the differential yield of debt-financed investment versus equity-financed investment was as large as two percentage points. When domestic savings are insufficient to finance investment, such tax incentives can contribute to an investment boom financed by external borrowing.

- Third, a taxation bias in favor of nontradable activities can fuel asset price bubbles and overheating. For example, low taxation of the real estate sector may contribute to an asset price bubble, spurred by credit growth financed by capital inflows. Indeed, low taxation of real estate is common in Central and Eastern Europe, including in some G-11 countries. Other relevant features of tax systems that may have the same effect are the deductibility of mortgage interest and housing subsidies—introduced in many countries to promote home ownership.

These considerations underscore the need to carefully assess any new tax initiatives against their possible impact on capital inflows and their contribution to macroeconomic imbalances. Indeed, it has been noted that price-based capital controls are essentially taxes and can be distortionary. Fiscal tightening carried out by increasing distortionary taxes may inhibit growth prospects and precipitate a crisis (Calvo, 2003). Even removing a tax distortion can have undesirable short-term effects on the economy. Thus it is best to avoid distortionary tax measures since the cost of correcting the resulting imbalances may be much higher than the perceived short-term benefit from introducing the distortion.

Debt management can be a useful tool in managing capital inflows. In particular, the decision whether to borrow domestically or abroad has direct implications for capital inflows. However, increased access of foreign investors to domestic markets has made this channel less relevant over the past few years. Nevertheless, prudent financial management during capital inflow episodes—retiring expensive debt, reducing the reliance on foreign currency-denominated debt, lengthening maturities, and building up a financial buffer—can considerably reduce external vulnerabilities, including the potential costs of a sudden reversal.

In practice, it is challenging to differentiate among various causes of excessive inflows and even more difficult to correctly assess the underlying investor sentiment. This could lead to wrong policy responses. Indeed, recent empirical studies find that 15 percent of the past large inflow episodes completed between 1987 and 2004 ended up in a crisis (Schadler, 2008). This is a high percentage, especially when taking into account the high costs of financial crises. What can be done to avoid the dangerous imbalances?

C. Mitigating the Risks of Excessive Capital Inflows

Confronted with the difficulty of identifying and addressing the cause of the inflows, policymakers should consider "adaptation" policies: taking pre-emptive steps to protect the economy from possible side-effects of inflows, including the risk of sudden reversal. Some of the most effective policy actions aim at improving competitiveness and reducing financial sector vulnerabilities.

Improving competitiveness. Structural reforms, including investing in education and training, strengthening property rights, and reducing the cost of doing business can boost productivity and reduce the adverse effect of exchange rate appreciation on competitiveness. Increasing the productivity of public expenditure by boosting the share of spending on infrastructure could further improve private sector competitiveness, but needs to be consistent with the country's absorptive capacity and public financial management constraints. These reforms help to sustain the appreciation caused by capital inflows. Some of these reforms are being undertaken by the G-11 countries (Table 2).

Reducing financial sector vulnerabilities. Strengthening the supervision of financial sector institutions can mitigate balance sheet risks and improve the quality of credit at a time when high capital inflows contribute to rapid credit growth. Well functioning financial markets are also associated with lower risk of sudden reversals. Indeed, a recent Global Financial Stability Report (GFSR) prepared by the IMF presents evidence that the volatility of inflows is reduced by targeted development of financial markets.[13] Encouragingly, a number of the G-11 countries introduced policies to improve risk management in the financial system, to strengthen supervision, and to further develop capital markets (Table 2).

IV. CONCLUSION

The economic fallout associated with the unfolding financial crisis has underscored the importance of effective management of capital flows. Many emerging markets, including some of the G-11 countries, have been severely affected by the loss of investor confidence and the ensuing capital outflows. In the short term, the negative impact of financial contagion is likely to be felt in most countries. However, experience from earlier financial crises suggests that countries with prudent macroeconomic policies in place prior to the crisis are more likely to weather the crisis better and recover sooner than countries that allowed macroeconomic imbalances to persist.

This paper considered policy responses to excessive capital inflows, depending on country-specific circumstances. Such inflows were particularly pronounced prior to the crisis in emerging markets, including most of the G-11 countries. Appropriate policy action would depend on the nature and the cause of the inflows. While sterilized intervention and capital controls can be useful in dealing with inflows caused by temporary factors, these instruments are costly and ineffective in addressing persistent capital inflows associated with the underlying economic imbalances, experienced by some G-11 countries. Such imbalances should be addressed by fiscal and monetary policy tools, including exchange rate policies.

A fiscal tightening cannot resolve all problems associated with excessive capital inflows. In particular, when exchange rate misalignment is the main cause of the inflows, fiscal policy can at best play a supportive role. Such a role may be further limited in countries where there is no fundamental need to adjust, making it politically difficult to justify running tighter fiscal positions. Moreover, a need to preserve the core allocative and redistributional functions of public policy may limit the extent of feasible fiscal adjustment, especially when fiscal space is limited in the first place. Finally, fiscal strengthening improves market confidence, particularly in the countries with high debt burden, and may even attract more capital inflows (IMF, 1995).

[13] See IMF GFSR, October 2007, Chapter 3 for further detail.

Nevertheless, a fiscal adjustment is unavoidable in some circumstances. For example, fiscal prudence is critical when a country is running an excessive current account deficit. A fiscal tightening can also help to contain overheating associated with capital inflows. In the same vein, procyclical fiscal policies should be avoided, because they exacerbate economic imbalances. Moreover, a cautious fiscal policy during good times leaves room for a fiscal expansion during bad times, including in response to a sudden reversal.

When it comes to analyzing the cause of the inflows, it is important to consider not only the macro-fiscal stance, but also the possibility that the inflows were attracted by micro-fiscal distortions, particularly those arising from tax policy. Cross-country experience suggests that it is best to avoid the tax structures that can induce excessive capital flows, rather than trying to deal with the aftermath of suboptimal policy choices. In a similar vein, an early response to capital inflows, including taking preventive measures, such as structural reforms and improved financial sector supervision, can go a long way in averting serious macroeconomic imbalances.

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