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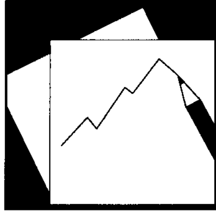

IMF Working Paper

Managing Large-Scale Capital Inflows: The Case of the Czech Republic, Poland and Romania

Ibrahim Chowdhury and Leonor Keller

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Managing Large-Scale Capital Inflows:
The Case of the Czech Republic, Poland and Romania

Prepared by Ibrahim Chowdhury* and Leonor Keller^

Authorized for distribution by René Weber

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Abstract

Many emerging market economies have in the recent past experienced a surge in capital inflows that may threaten their economic and financial stability. The IMF in early 2011 proposed a framework intended to guide Fund advice to policymakers on how to best respond to such inflows, including both macroeconomic instruments and so-called capital flow management measures (CFMs). The paper applies this framework to three countries that have experienced elevated capital inflows after the onset of the 2008 global financial crisis—the Czech Republic, Poland, and Romania. It finds that the evaluation of the macroeconomic criteria as prescribed by the framework does not support the use of CFMs, but instead advocates macroeconomic policies as the first line of defense against large-scale capital inflows. This finding is by and large consistent with the IMF's policy advice given to country authorities in the context of surveillance missions.

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Author's E-Mail Address:ichowdhury@imf.org, leonor.keller@sciences-po.org

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I. INTRODUCTION

The explosive growth of cross-border capital flows over the past decades has been, in part, a consequence of increased macroeconomic stability and policy reforms in developing and emerging economies. It is, however, also a result of the removal of statutory restrictions on capital account transactions. While for the capital-abundant economies investments in capital-scarce economies help diversify risks and earn higher marginal returns, for capital-scarce countries capital inflows permit the smoothing of consumption over time, the development of financial markets, and the funding of productive investments, among other things.[1] The International Monetary Fund (IMF) has long cautioned its members against maintaining or imposing controls on capital flows that would curtail some of these advantages and introduce market distortions, and has encouraged the gradual opening of the capital account to reap the benefits of internationally mobile capital.

In the wake of the global financial crisis that originated in the advanced economies in 2008, many emerging market economies have experienced a surge in capital inflows that can pose a threat to their economic and financial stability. Notwithstanding the IMF's hesitant stance, some of these countries chose to impose restrictive measures, including capital controls, to more effectively manage such inflows and lessen their disruptive impact. Thus, the debate about how to best respond to large and destabilizing capital inflows, long dormant, has recently again risen to the forefront of the economic debate (see, for example, Eyzaguirre et al., 2011; IMF, 2011a; Ostry et al., 2010, 2011; Pradhan et al., 2011).

In 2011, the IMF (2011a) proposed a framework that sets out objective criteria for determining under what circumstances the use of capital flow management measures (CFMs) would seem appropriate. CFMs encompass a number of prudential, administrative, and tax measures designed to counter large and usually rapid capital inflows. When inflows give rise to significant macroeconomic or financial stability concerns, it is reasonable for recipient countries—according to the framework—to utilize CFMs, as long as adequate macroeconomic policies are in place and there is only limited scope left for their further use. Thus, CFMs seem warranted if (i) the exchange rate is not undervalued, (ii) reserves are in excess of adequate prudential levels, and (iii) the cyclical position suggests overheating of the economy and precludes monetary easing, and there is no scope to tighten fiscal policy. In using CFMs, preference should be given to those CFMs that do not discriminate on the basis of residency. The framework also places emphasis on prudential and structural measures to increase the capacity of the economy to absorb capital inflows and strengthen the resilience of the domestic financial system in handling them. It aims to provide a basis for coherent policy advice by the IMF to national authorities.

[1] In accordance with the descriptions in the IMF's sixth edition of the *Balance of Payments and International Investment Position Manual,* the term *capital flows* is defined as "cross-border financial transactions recorded in economies' external financial accounts".

In this paper, we apply the proposed framework to the Czech Republic, Poland, and Romania. These three central and eastern European countries have experienced elevated capital inflows after the onset of the 2008 global financial crisis. We assess whether the conditions have been met for the use of CFMs according to both the judgment-based and the threshold-based illustrative approaches put forward by the IMF. This assessment is then compared with the actual advice that the IMF staff has given to country authorities in the context of bilateral surveillance under Article IV or program missions.

Overall, the evaluation of the macroeconomic criteria under both approaches demonstrates that the conditions for employing CFMs have not been met in the three countries. Instead, the analysis under the framework broadly supports the use of conventional macroeconomic instruments as the first line of defense against large-scale capital inflows. The IMF's policy advice to country authorities provided in the context of its surveillance missions likewise advocates the use of macroeconomic variables, namely allowing the currency to strengthen, building additional reserves, and rebalancing the policy mix. Our findings also underscore the desirability to further refine the framework to provide more effective guidance for IMF staff in their demanding task of prescribing appropriate policies in an efficient, consistent, and evenhanded manner.

The remainder of the paper is organized as follows. Section II reviews the tools available to policymakers for managing large-scale capital inflows, with particular emphasis on CFMs. Section III briefly presents the IMF's proposed framework for managing capital inflows. Section IV contains the three country-specific analyses for the Czech Republic, Poland, and Romania. It reviews the recent capital inflow dynamics, applies the IMF's conceptual approach, and compares the findings with the actual advice provided by the IMF. Section V concludes and provides some suggestions for enhancing the proposed framework to ensure effective policy advice that fits the needs of country authorities.

II. Policy Tools for Managing Capital Inflows

A. Structural Changes

Coping with large capital inflows is less challenging for countries with strong absorption capacities. A country's capacity to absorb foreign capital depends on many factors and in particular on the depth and efficiency of the financial system. Structural reforms that are aimed to foster financial market development play a central role for a country to reap the benefits from capital inflows and prepare against potential risks of unwanted surges of capital inflows. However, structural reforms are usually employed as long-run strategies and thus may be seen as a complement to macroeconomic policies which have a more immediate effect on capital inflows and their consequences.

B. Macroeconomic Policies for Managing Capital Inflows

Macroeconomic policies should play a pivotal role when responding to large and destabilizing capital inflows. Appropriate exchange rate, monetary and fiscal policies should be seen as the first line of defense to address surges in capital inflows. Policymakers should let the domestic currency appreciate if it is undervalued from a multilateral viewpoint. An appreciation may enhance expectations of future currency depreciation, thus effectively diminishing the domestic asset's attractiveness to external investors (see Eyzaguirre et al., 2011).

In case foreign exchange reserves are not adequate from a precautionary perspective, reserve accumulation might be a meaningful option. One of the main motivations for intervention is the concern that massive and rapid capital inflows may induce steep exchange rate appreciation in a short period of time, damaging the competitiveness of export sectors and potentially reducing economic growth. Intervention should be sterilized if overheating and inflation concerns are present. Sterilizing inflows, however, incur costs as the return paid on central bank liabilities issued to sterilize domestic liquidity usually exceeds the return earned on foreign reserve assets. Moreover, since sterilization does not lead to a decline in domestic interest rates, it upholds the incentives for continuing capital inflows, and can thus perpetuate the problem.

Countries facing excessive inflows can also respond with monetary policy easing if it is consistent with inflation objectives. However, if the economy is at risk of overheating reducing policy rates may not be a viable option. In this circumstance, fiscal policy, in particular if it is pro-cyclical, could be tightened to reduce domestic demand growth, thereby restraining the current account deficit and easing exchange rate pressures. While implementation lags may limit the scope of fiscal policy, there could be an impact on the exchange rate and thus on capital inflows stemming from the announcement of fiscal tightening.

C. Capital Flow Management Measures

Additional components in the policy toolkit are the so-called capital flow management measures. CFMs encompass a broad range of administrative, tax, and prudential measures that are designed to influence capital flows. They can be further grouped into *residency-based CFMs* and *other CFMs*.

Residency-based CFMs include a variety of measures affecting cross-border financial activity that discriminate on the basis of residency—often referred to as capital controls.[2] Any CFMs

[2]As noted by the IMF (2011a) discrimination is considered to occur when "(i) a measure explicitly differentiates on the basis of residency (of either the parties or assets involved), (ii) this differentiation treats non-resident transactions less favorably, and (iii) the less favorable treatment is not justified by relevant inherent differences in the non-resident transactions. The criterion in (iii) is a narrow concept that provides flexibility to differentiate

(continued…)

in this category discriminate on residency, between residents and non-residents, rather than citizenship, i.e. nationals versus non-nationals, and should not discriminate among different countries as that would impinge on existing Fund jurisdiction. Examples of residency-based CFMs include, for example, taxes on flows from non-residents or unremunerated reserve requirements on such flows. The effectiveness of capital controls has been questioned since capital controls have been found to have little impact on the total volume of inflows (see Habermeier et al., 2011). This said capital controls however may alter the maturity structure and composition of inflows, thereby reducing countries' exposure to risk. Thus, controls can have a beneficial impact for the domestic economy and serve to protect against the more negative effects of capital inflows. However, it is crucial to ensure that capital controls are not just effective in achieving their intended goals, but also efficient, introducing the bare minimum of distortions in the economy. This demonstrates one of the primary concerns surrounding capital controls; they may introduce market distortions and encourage regulatory arbitrage and the circumvention of rules.

Other CFMs are measures that do not discriminate on the basis of residency, but are nonetheless designed to influence capital inflows. This category would typically include a subset of prudential measures differentiating transactions on the basis of currency, such as limits on foreign currency borrowing and currency specific reserve requirements, and other measures typically applied to the nonfinancial sector, such as minimum holding periods and taxes on certain investments.

If a measure is not intended to influence capital inflows it would not fall under the umbrella of a CFM. These non-CFMs typically include prudential measures that do not discriminate by residency and typically, but not always, do not differentiate by currency. [3] They are primarily aimed to strengthen the resilience and soundness of financial institutions and can include, among others, maximum loan–to-value (LTV) ratios, quality and quantity requirements on capital, constraints on domestic credit growth and capital adequacy requirements (Ostry et al., 2011).

When considering CFMs, policymakers have to take into account various design aspects based on country specific circumstances and considerations of effectiveness and efficiency. First, CFMs can be price-based, such as taxes or unremunerated reserve requirements, or quantity-based including limits or outright bans on certain flows. A rule of thumb could be that price-based measures are preferable in general, whereas quantity-based measures may be more appropriate for prudential purposes, particularly when applied to the financial sector, where the presence of information asymmetries und uncertainties makes it more difficult to

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between resident and non-resident transactions only where this is necessary to put the two sets of transactions on an equal footing."

[3] Prudential measures can be further classified as macro- or micro-prudential, where micro-prudential policies are those that focus on ameliorating institutions' resilience to risks or reducing systemic risk. Macro-prudential policies, often based on the micro toolkit, will be exclusively aimed at lessening systemic risk.

calibrate price-based measures (see Ostry et al., 2011). Second, policymakers need to decide whether CFMs should be broad-based or targeted. In the presence of macroeconomic concerns broad-based CFMs should be applied, since it is the aggregate inflow that matters for the exchange rate. For prudential concerns, CFMs targeted at specific forms of inflows but taking into account circumvention possibilities might be preferable. Third, CFMs should be seen as temporary instruments that are scaled back once capital inflows abate.

Monitoring inflows and ensuring compliance with CFMs, and capital controls in general, is likely to be both complicated and costly. There are a number of additional risks associated with the implementation of capital controls in particular. Critics of capital controls argue that their widespread use may impede steps to address global imbalances by allowing country authorities to avoid appreciating undervalued currencies and addressing serious policy problems (Eichengreen, 2001). Moreover, capital controls may be 'contagious' – imposing controls in one country could result in more capital directed towards other countries, encouraging these to adopt similar measures to manage the inflows (IMF, 2011f).[4] And lastly, the expectation of the use of capital controls may discourage investment, in particular if the controls are expected to affect the repatriation of capital from the domestic market. It is to address these risks that a number of international treaties impose limits on the use of capital controls. EU members, for example, may not impose any capital controls, though some safeguards for temporary restrictions are permitted for countries that are not part of the euro area.

III. Policy Framework for Managing Capital Inflows

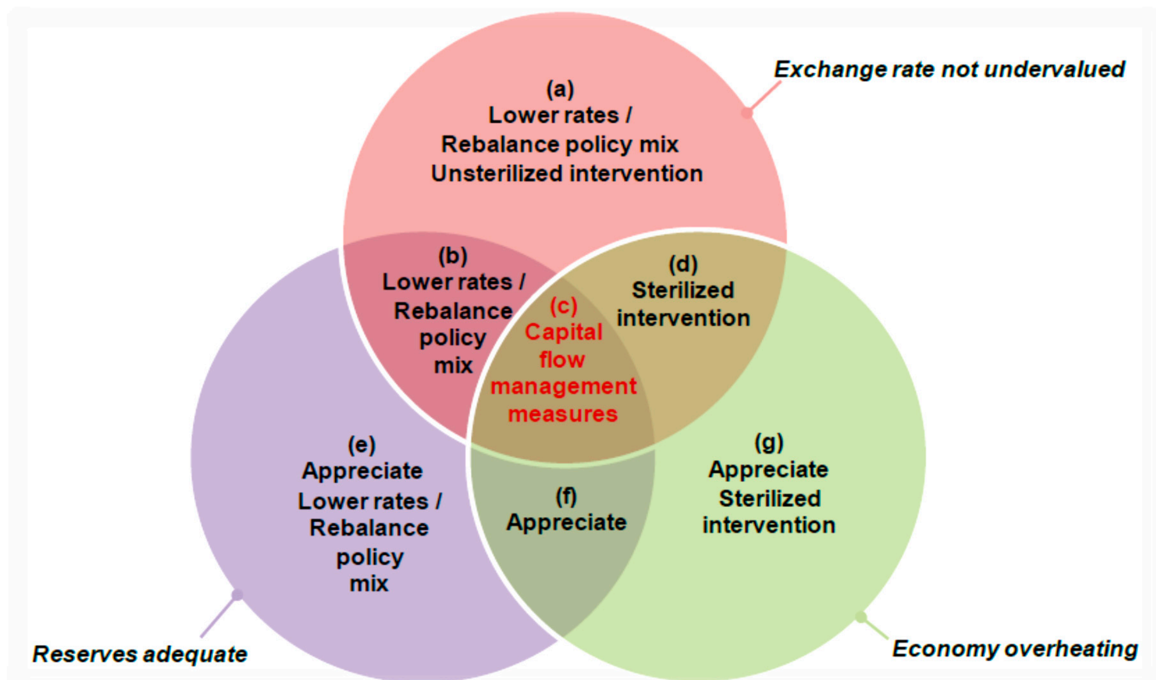
In early 2011, the IMF proposed a policy framework intended to identify the conditions in which the use of CFMs may be necessary and effective, with the intent of streamlining the IMF's approach to capital flows and ensuring consistent and effective treatment of the issue. This framework stresses the importance of using macroeconomic policies as the primary means of addressing capital inflows. As such, it advocates allowing for exchange rate appreciation when it is undervalued, the accumulation of foreign reserves to a reasonable extent, the lowering of policy rates and/or the tightening of fiscal policy as *the first line of defense* against excessive capital inflows[5].

[4] Empirical evidence on the magnitude and direction of multilateral effects of CFMs is inconclusive thus far. The results of a recent study by the IMF (2011f) indicate that CFMs can increase or decrease flows to neighboring countries. In several instances, the results suggest that CFMs did divert flows to other countries, while in other cases the evidence is consistent with investor perception that CFMs could be adopted more widely, reflected in a reduction in flows and equity prices even in neighboring countries.

[5] While this paper focuses on the framework for managing inflows, the IMF (2012) recently suggested a policy framework for managing capital outflows. Ostry et al. (2010) note that relaxing controls on outflows may also have an impact on aggregate net inflows, and hence on the exchange rate and other macroeconomic variables. The direction of that impact, however, remains unclear. On the one hand, liberalizing capital outflows can reduce net inflows as some of the inflows are offset by outflows. On the other hand, Ostry et al. (2010) argue that greater assurance concerning the repatriation of capital may make the country an even more attractive destination for foreign investors.

CFMs should be used only in cases where “(a) the exchange rate is not undervalued on a multilateral basis in relation to medium-term fundamentals, (b) reserves are in excess of adequate precautionary levels or sterilization costs are excessive, and (c) the economy is overheating (where the inflation outlook is not benign or there is a developing credit or asset price boom) precluding monetary easing” (see IMF, 2011a). *The second line of defense* against excessive capital inflows should then be CFMs that do not discriminate on the basis of residency, as they effectively target the risks associated with inflows without introducing excessive distortions and incentives for circumvention by non-residents. CFMs discriminating on the basis of residency would serve as *the third and final line of defense*, and be implemented only in cases when all other options have been exhausted or excluded.

Figure 1: Policies to Cope with Capital Inflows



Notes: Each circle represents cases where the relevant condition is met. For example, the top most circle ("Exchange rate not undervalued") represents cases where the exchange rate is assessed to be broadly in line with fundamentals or overvalued. The intersection of all three circles (the area marked "c")—where use of capital flow management measures may be appropriate—reflects cases where the exchange rate is not undervalued, reserves are judged to be adequate, and the economy is overheating. Other intersections similarly represent other confluences of factors. For example, the top left intersection (area "b") represents cases where the exchange rate is not undervalued, reserves are judged to be adequate and the economy is *not* overheating (since the case is outside the "Economy overheating" circle). Areas of no intersection represent cases where one of the circles—but not the other two—is applicable. For example, the bottom right area ("g") represents cases where the economy is overheating, the exchange rate is assessed to be undervalued, and reserves are judged to be inadequate. "Lower rates / Rebalance policy mix" refers to loosening monetary policy; to the extent that fiscal policy is tightened, there would be more room to lower policy rates.
Source: IMF (2011a).

When applying this framework the IMF (2011a) distinguished between two illustrative approaches, a judgment-based approach and a threshold-based approach. Under both approaches an assessment is made concerning exchange rate valuation, reserve adequacy, and economic overheating. It should be noted that an assessment of whether the first-line macroeconomic policy response in a particular country has been adequately deployed to warrant use of CFMs needs to be grounded in country-specific information and circumstances.

Under the judgment-based approach the exchange rate criterion is judged to have been met, where country desks assessed the exchange rate to be overvalued or broadly in line with fundamentals. The overheating criterion is considered to have been met where desks assessed the output gap to be closed or closing rapidly. Lastly, country teams assessed the reserve adequacy criterion based on their own judgment on the relevant metrics for their countries.

Under the threshold-based approach, consistent numerical thresholds are applied to assess exchange rate valuation, reserve adequacy, and economic overheating instead of desk judgment. The common thresholds as outlined by the IMF (2011a) are as follows:

- Reserves are judged to be adequate if the ratio of reserves to the sum of short-term debt (residual maturity) and the current account deficit exceeded 100 percent.

- The economy is considered to not be overheating when (i) the year-on-year CPI inflation rate averaged less than 3 percent over the last two years, or less than 10 percent in 2010 and declined from the average level of 2009; and (ii) bank credit did not rise by more than 5 percent of GDP in the last year.

- The exchange rate assessment is based on an average of the CGER estimates where available.[6] The exchange rate is assessed to be not undervalued if the average estimate for misalignment was above zero percent.

It should be kept in mind that different metrics and approaches may well be more suitable to assess the macroeconomic criteria. For example, a recent paper by the IMF (2011b) illustrates that a variety of analytical approaches can be informative in assessing reserve

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[6] CGER (the Consultative Group on Exchange Rate Issues) is a methodology for assessing the consistency of exchange rates with medium-term fundamentals, within a multilaterally consistent setup and is comprised of three complementary approaches. The *macroeconomic balance approach* calculates the difference between the current account balance projected over the medium-term at prevailing exchange rates and an estimated equilibrium current account balance; the *equilibrium real exchange rate approach* estimates an equilibrium real exchange rate for each country as a function of medium-term fundamentals; and the *external sustainability approach* calculates the difference between the actual current account balance and the balance that would stabilize the net foreign asset position of the country at some benchmark level (see IMF, 2006).

adequacy. To gauge whether an economy is overheating, estimates of output gaps might be more instructive. Lastly, in specific cases certain exchange rate assessment methodologies may be less relevant than others, so the average misalignment estimate may not be the most appropriate (see IMF, 2011a).

In the following Section, the judgment-based and threshold-based methodologies are applied to assess which policies may be best recommended to address large capital inflows in the three central eastern European counties. To assess the macroeconomic criteria under the judgment-based assessment we refer to the IMF's policy advice to these countries given in the context of bilateral surveillance under Article IV and program missions.

IV. COUNTRY-SPECIFIC ANALYSIS – THE CZECH REPUBLIC, POLAND AND ROMANIA

To apply the framework as a means of determining the particular instances in which the IMF would endorse the implementation of CFMs, three central and eastern European economies which were experiencing large capital inflow episodes after the global financial crisis – the Czech Republic, Poland and Romania – were selected for a close analysis. To facilitate the analysis, we employ a terminology previously used by the IMF (2011a) to define capital inflow episodes. According to this terminology an episode of inflows refers to a drawn-out period of large capital inflows. On the basis of this definition the IMF (2011a) identified more than 150 episodes of capital inflows for 48 countries over the past 20 years. For the three countries in this analysis the IMF (2011a) found that the most recent episode of capital inflows started in the second quarter of 2009 in the Czech Republic and Poland, and in the third quarter of 2009 in Romania. The cut-off date for our analysis is chosen according to the date of the IMF staff assessment, which was March 2011 for the Czech Republic, and June 2011 for Poland and Romania.

During this two year episode average quarterly net capital inflows amounted to 9.2 percent and 7.5 percent of GDP in Poland and Romania, while in the case of the Czech Republic, average quarterly net inflows were recorded at 5.3 percent of GDP (see Figure 2). These inflows were of sizeable nature when compared to inflows to other emerging market economies. For example, the IMF (2011a) illustrated that during the same inflows episode net capital inflows as a percent of GDP ranged from 1.9 percent in Korea and 2.6 percent in Indonesia, to 6.6 percent in South Africa and 6.9 percent in Turkey.

Compared to past capital inflows episodes, portfolio flows have assumed a much larger role, this time, dominating direct investment and other investment flows in the Czech Republic and Poland (see Figure 3 and 4). Portfolio flows also picked up in Romania although other investment flows continue to account for more than half of total inflows. The increase in the prevalence of portfolio inflows, and their short-run nature, may lead to an increased vulnerability of these economies to rapid and significant changes in capital inflows. A reversal to outflows would be particularly harmful if coupled with a weaker macroeconomic outlook, changes in global risk aversion or the deterioration of public finances.

A. The Czech Republic

As outlined in the IMF staff report for the 2011Article IV Consultation the Czech economy weathered the global crisis relatively well, with the recovery underway since mid-2009. The government formed in mid-2010 outlined a comprehensive medium-term policy agenda anchored in fiscal consolidation, which has already yielded credibility gains. Monetary policy remained supportive, inflation pressures were fairly subdued until the recent surge in commodity prices, and the banking sector was stable. Owing to the rebound in economic activity that began in 2009, capital inflows resumed but their composition changed with debt flows now exceeding equity flows including FDI. The IMF (2011c) observed that in light of the low Czech yields, capital inflows seemed to be driven by the Czech Republic's strong fundamentals.

The Czech economy underwent significant fiscal consolidation in 2010, involving measures such as a one percentage point increase in the VAT, increased excise and real estate taxes, a number of expenditure cuts, and an expansion in the base for social security contributions, while a reduction in their rates was postponed. Additional ad hoc expenditure cuts and freezes were also imposed to compensate for the underperformance of corporate income taxes and social security contributions. The IMF advised the Czech authorities to define additional fiscal consolidation measures beyond 2011 to support the government's medium-term fiscal targets and preserve market credibility.

The IMF staff further noted that despite an accommodative monetary policy stance, inflationary pressures remained subdued with headline CPI inflation largely remaining below the 2 percent target since mid-2010. The Czech National Bank (CNB) maintained the two-week repo interest rate at the record low level of 0.75 percent, after cumulative cuts of 325 basis points between August 2008 and May 2010. The koruna has been appreciating since the beginning of 2009 but according to IMF staff remained broadly in line with fundamentals. The IMF recommended maintaining an accommodative monetary policy stance until the sizeable negative output gap narrows considerably, unless a spike in inflation expectations or a faster reduction in labor market slack necessitate earlier action.

IMF Policy Recommendations – Applying the Framework

The judgment-based exercise indicates that the Czech Republic does not qualify for CFMs. Since the IMF staff viewed the exchange rate to be broadly in line with fundamentals, the exchange rate criterion is considered to have been met. IMF staff further noted that on the basis of the composite new IMF Reserve Adequacy Metric (RAM), which takes into account developments in exports, broad money, and external liabilities, the Czech Republic has adequate reserves. The framework further deems that a country should not make use of CFMs if the economy cannot be considered to be overheating. The overheating criterion is judged to have been met when the output gap is closed or closing rapidly. Since the IMF

report observed that the sizable negative output gap is expected to narrow only marginally in 2011 and forecast to close around 2014, the overheating criterion is not fulfilled.

The threshold-based exercise likewise does not advocate the use of CFMs as the Czech Republic only meets the criteria on reserve adequacy but does not fulfill the remaining two criteria. Czech reserves covered approximately 144 percent, well above the threshold of 100 percent, of the sum of short-term debt at residual maturity and the current account deficit. Using the CGER approach, the 2011 Article IV Consultation found estimates of REER misalignment to range from -10 percent under the external sustainability approach to +11 percent using the equilibrium real exchange rate approach. The average estimate of REER misalignment was -2 percent and pointed to a small undervaluation of the real exchange rate. Lastly, we find that the Czech Republic did not show symptoms of overheating as both overheating criteria fell short of the respective thresholds. The year-on-year CPI inflation rate averaged 1.2 percent over the past two years, well below the 3 percent threshold. Bank credit rose by 4.5 percent of GDP in the last year, less than the 5 percent threshold.

Despite the large capital inflows to the Czech economy the outcome of the analysis under the IMF's framework cannot justify the use of CFMs, especially since the economy may not be considered to be overheating. Instead the framework recommends giving primacy to macroeconomic policies in responding to inflows, including exchange rate appreciation and monetary policy easing. The IMF staff suggested that in the case of significant capital inflows, the appropriate policy response would be to allow the koruna to appreciate further, and—if needed—lower policy interest rates. The staff advice is therefore consistent with the outcome under the framework, advocating the use of macroeconomic policies as the first line of defense against increasing capital inflows.

B. Poland

In 2011, the Polish economy returned to stronger growth, driven primarily by domestic demand. As inflation increased significantly reflecting higher commodity prices, a VAT hike and second-round effects, monetary policy was tightened starting in early 2011. Substantial fiscal consolidation measures are being implemented in 2011-2012, though additional fiscal consolidation will be needed to put government debt firmly on a downward path. Reflecting Poland's strong fundamentals, capital inflows into Poland were substantial in 2010. Most inflows were directed towards government securities as a result of the government's increased financing need.

The Polish government introduced several amendments to the *Public Finance Act* of 2009 in 2011. These resulted in a temporary expenditure rule, limiting the rate of growth of discretionary expenditure, a freeze of the wage fund in nominal terms, reduced expenditure on less effective labor market programs, a VAT rate increase by 1 percent for three years and increased excise taxes. Eligibility for early retirement was tightened and the contributions transferred by the social insurance institution to the open pension funds were decreased. The

IMF (2011d) forecast that these policies and tax buoyancy would lower the deficit, but further permanent measures amounting to slightly over 1 percent of GDP were recommended to ensure medium-term targets are reached. These include limiting tax reliefs and exemptions, tightening pension indexation and streamlining public administration employment.

The 2011 IMF staff report on Poland (see IMF, 2011d) noted that core inflation was expected to continue to rise, particularly as a result of improving labor market conditions and tightening capacity constraints. The policy interest rate remained constant throughout 2010, but was then raised multiple times from 3.5 percent starting in January 2011 to 4.5 percent in June 2011, as headline inflation increased above the target band set by the National Bank of Poland. The IMF staff suggested that policy rates be increased further to bring inflation back to target over the policy horizon. In particular, it noted that capacity constraints, inflationary expectations, labor markets developments and exchange rate movements, would need to be accounted for when determining the exact magnitude and pace of tightening monetary policy.

IMF Policy Recommendations – Applying the Framework

The judgment-based exercise indicates that there is some room for conventional macroeconomic policy adjustment to respond to inflows before CFMs should be considered. According to staff analyses in the 2011 Article IV consultation (see IMF, 2011d) the real exchange rate of the zloty was broadly aligned with fundamentals. Even though reserves were found to exceed several metrics of reserve adequacy, staff recommended additional reserve accumulation arguing that reserves fell short of debt at remaining maturity plus the current account deficit. This view was not shared by the National Bank of Poland which found reserves to be more than adequate on most measures and thus saw little need for additional reserve accumulation. Lastly, a strong rebound in capacity utilization, a closed output gap, and high inflationary pressures signaled signs of overheating. To address large inflows, the judgment-based assessment calls for additional reserve accumulation and some appreciation of the zloty.[7]

Under the threshold-based approach, Poland does not meet the criteria for employing CFMs. In fact, the assessment illustrates that Poland meets only the criterion on overheating, but does not fulfill the remaining two criteria on reserve adequacy and exchange rate assessment. The ratio of reserves to short-term debt plus current account deficit stood at 71 percent in 2010 and was projected at 84.1 percent for 2011, considerably less than the envisaged threshold of 100 percent. According to staff's exchange rate assessment in the context of the 2011 Article IV Consultation estimates of REER misalignment varied from -7 percent under the equilibrium real exchange rate approach to +5 percent under the macrobalance approach.

[7] In the presence of inflationary concerns, the resulting increase in the money supply stemming from the accumulation of reserves could be sterilized.

The average estimate for misalignment was -2 percent. Accounting for Poland's balance of payment revisions continued to point to a mild undervaluation of the zloty. Turning to the overheating criteria, year-on-year CPI inflation rate averaged 3.1 percent over the last two years and the increase in bank credit was equal to 6.8 percent of GDP in the last year. As the framework sets limits of 3 and 5 percent, respectively, it can be argued that the Polish economy showed signs of overheating. From a macroeconomic policy standpoint, some appreciation of the exchange rate would be warranted since it is slightly undervalued. In addition, given the shortfall in reserves, further reserve accumulation would be desirable.

The IMF staff's recommendations by and large coincided with those suggested under both methodologies of the IMF's capital inflows framework. The IMF staff recommended that substantial capital inflows be countered with a more gradual tightening of monetary policy and accelerated fiscal consolidation. Furthermore, the IMF staff proposed some appreciation of the exchange rate as it was not found to be overvalued which would help to ease inflationary pressure and additional reserve accumulation, in particular in light of Poland's recent decision to convert part of its EU funds on the foreign exchange market. Targeted macro-prudential measures, specifically measures to tighten bank lending standards, could also be implemented as a complement to the adjustments in macroeconomic variables. Arguably, these measures could be considered CFMs if their purpose is to directly influence the volume and composition of capital inflows.[8]

While the Polish authorities shared the IMF staff's view on exchange rate appreciation and acceleration of the already-envisaged fiscal adjustment, they did not see the need for additional reserve accumulation. Besides, the authorities planned to implement a number of foreign-exchange related prudential measures.[9] As these measures were arguably planned in response to the substantial inflows, it can be argued that Poland was already making use of the "second line of defense."

[8] The IMF staff's call for targeted macro-prudential measures as a response to substantial capital inflows indicates that even if macroeconomic considerations do not warrant the imposition of prudential measures, financial-stability concerns might. A main concern from the financial stability perspective is that large capital inflows may lead to excessive borrowing and foreign currency exposure, possibly fueling domestic credit booms and asset bubbles (see Ostry et al., 2010).

[9] In an effort to counteract foreign currency risks, the Financial Supervisory Authority planned important regulatory amendments, including introducing a 50 percent limit for the share of exposures open to FX risk in the entire bank's portfolio of retail credit exposures financing real estate; recommending to limit the borrower's exposure to FX risk by ensuring conformity of the currency of exposure with the currency of income used for repayment; introducing the obligation to identify reliable sources of financing long-term credit exposures, that finance the real estate, adequately to the currency of the exposure (NBP, 2010).

C. Romania

As reported by the IMF (2011e) Romania's economy resumed growth in 2011 following a severe downturn in 2009 and 2010.[10] Headline inflation increased with rising food and energy prices and core inflation also edged higher. Difficult fiscal consolidation measures undertaken in 2010 resulted in a lower budget deficit. The currency appreciated and capital inflows picked up with official financing remaining the main source of inflows, while FDI continued to remain weak. The IMF expected capital inflows to improve further with FDI rebounding and portfolio inflows also recovering.

Inflationary pressures in Romania have been high, in part as a result of global food and energy prices increases and the high share of food in the CPI. The year-on-year CPI inflation rate in May 2011 was recorded at 8.4 percent, well above the inflation target (3 percent ± 1ppt) set by the National Bank of Romania (NBR). Core inflation, excluding VAT effects, has also risen in part due to price increases of processed foods. After significant easing in 2010, monetary conditions started to tighten owing to the appreciation of the leu. The central bank kept the policy rate on hold at 6.25 percent since May 2010.[11] The IMF staff report suggested that the NBR should be prepared to tighten monetary policy in the coming months to achieve its 2012 inflation target.

On the fiscal side, the IMF (2011e) noted that higher than anticipated tax revenues and lower current and capital expenditures led to an improvement in Romania’s fiscal deficit. While the government was on track to reach its 2011 fiscal deficit target, the IMF report deemed further adjustments necessary to achieve the 2012 fiscal deficit target. In this context, the report called on the authorities to resist possible tax cuts and expenditure hikes.

IMF Policy Recommendations – Applying the Framework

Under the judgment-based assessment Romania would not be eligible for the use of CFMs. An assessment of the real effective exchange rate at end-2010 did not suggest significant exchange rate misalignment and showed that the exchange rate was broadly in line with fundamentals. While Romania’s reserves coverage was well above standard rules of thumbs – i.e., the 3-months-of-imports and 100 percent short-term debt, the IMF staff saw some room to accumulate additional reserves. Judged by the output gap, the Romanian economy could not be considered to be overheating. In 2010 the Romanian economy endured a large negative output gap which staff projected to widen further in 2011 and close only by 2016. According to the judgment-based exercise further reserve accumulation and exchange rate

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[10] The IMF’s Executive Board approved a 24-month SDR 3,090.6 million Stand-By Arrangement in March 2011. The authorities are treating the arrangement as precautionary.

[11] Between May 2009 and May 2010 the central bank reduced its policy rate by 325 basis points from 9.5 percent to 6.25 percent. Further reductions of a total of 50 basis points in the policy rate occurred after the cut-off date of our analysis in November 2011 and January 2012.

appreciation would be a suitable response to counter excessive capital inflows. Further currency appreciation would also help to contain the strong inflationary pressure.

The threshold-based assessment likewise does not advocate the operation of CFMs. According to the exchange rate assessment conducted in the course of the first review under the Stand-By Arrangement (see IMF, 2011e) the average misalignment of the real effective exchange rate was +2.1 percent indicating that the exchange rate was slightly overvalued. The estimated magnitude of misalignment ranged from a minuscule undervaluation of -0.1 percent under the external sustainability approach to a modest overvaluation of +5.2 percent using the macroeconomic balance approach. The findings on reserve adequacy allow for two interpretations. On the one hand, reserves could be judged to be adequate since they covered 99 percent of the short-term debt and the current account deficit and are meticulously close to the 100 percent threshold. On the other hand, a strict application of the threshold for reserve adequacy would point to the need to further accumulate reserves. Lastly, an assessment of the criteria on overheating, which is based in terms of both inflation and credit growth, illustrates no compelling evidence of overheating in the Romanian economy. The year-on-year CPI inflation rate averaged at almost 6 percent in 2009 and 2010 (and was projected at 6.8 percent for 2011), thus exceeding the 3 percent threshold set in the framework by a wide margin. However, credit growth in the previous year stood at 2.8 percent of GDP and fell short of the 5 percent threshold. To conclude, the threshold-based exercise allows for a number of observations. First, since the real effective exchange rate is assessed to be somewhat overvalued, a further appreciation of the leu might not be warranted. Second, while the Romanian economy is not found to be overheating, high inflationary pressures prevent an easing of the monetary policy stance to respond to large capital inflows. Finally, given the rather marginal difference with respect to the threshold for reserve adequacy, and bearing in mind that reserve coverage was well above standard rules of thumbs, it is open to question to what extend a further build up of reserves is warranted.

In light of the resurgence of portfolio investments witnessed in the first quarter of 2011, the Romanian authorities were concerned about large destabilizing capital inflows, which could potentially complicate the pace of monetary tightening. While the IMF staff acknowledged the authorities' concerns, they felt that the greatest threat to the Romanian economy was soaring inflation. Based on the balance of payments projections for 2011 to 2013 outlined in the IMF staff report (see IMF, 2011e), capital inflows to Romania were expected to increase in the coming years.[12] These increases in inflows would be coming at a time when, as demonstrated above, inflation continues to remain above the band limit and credit to the

[12] Foreign direct investment, in billions of Euros, is projected to increase from 4.1 in 2011 to 5.1 by 2013. In the mean time, net portfolio inflows are expected to decline moderately but remain positive during this time period. The currently negative balance on other investments is expected to turn positive in 2012 and increase further to Euros 6.0 billion in 2013.

private sector continues to increase. The projections seemed to provide grounds for the authorities' concerns over the potential impact of increasing inflows. The authorities' strategy for discouraging short-term capital inflows comprised maintaining the large spread around the policy rates for interbank rates and allowing for greater exchange rate fluctuations to introduce further uncertainty in returns. The IMF proposed to absorb capital inflows with additional reserve accumulation.

V. Conclusions and Potential for Enhancing the Framework

Table 1 summarizes the findings of the paper regarding the applicability of CFMs, based on macroeconomic criteria, in the countries under scrutiny—the Czech Republic, Poland, and Romania. The two conceptual approaches under the framework generally lead to similar assessments, with both the judgment-based and threshold-based exercises calling for macroeconomic policies as a response to large-scale capital inflows. The policy prescriptions that are derived under the framework do generally not support the use of CFMs in the three examined countries. In many respects, this result is not surprising given the stringent eligibility criteria for the application of CFMs. They require that the exchange rate is not undervalued, reserves are in excess of adequate prudential levels or sterilization costs are too high, and the economy is overheating, precluding monetary policy easing, and there is no scope to tighten fiscal policy.

The IMF's policy advice to country authorities provided in the context of its surveillance missions likewise focused on the main macroeconomic variables that are also delineated in the IMF's framework as the first line of defense against capital inflows: in all three cases, exchange rate appreciation was encouraged; reserve accumulation was advised for Poland and Romania; monetary policy rate decreases were proposed for the Czech Republic, where inflationary pressure was not a concern; accelerated fiscal consolidation was suggested for Poland. It must be noted, however, that occasionally policy responses were proposed that were not feasible, or implementable, from a domestic political point of view. A concrete example is the IMF's call for additional reserve accumulation in Poland, which was not supported by the Polish authorities. It is noteworthy that the IMF did not explicitly endorse the use of CFMs per se for any of the countries.

Table 1: Synthesis of Country Assessments and Fund Advice

		Czech Republic	**Poland**	**Romania**
IMF Framework Judgment-based Approach	*Exchange Rate*	Aligned	Aligned	Aligned
	Reserves	Adequate	Not Adequate	Not Adequate
	Overheating	No	Yes	No
	CFMs warranted?	**No**	**No**	**No**
IMF Framework Threshold-based Approach	*Exchange Rate*	Slightly undervalued	Slightly undervalued	Slightly overvalued
	Reserves	Adequate	Not Adequate	Adequate/ Not Adequate
	Overheating	No	Yes	No
	CFMs warranted?	**No**	**No**	**No**
IMF Staff Advice	*Traditional Macroeconomic Policies*	Allow for further exchange rate appreciation; lower policy rates	Some appreciation acceptable; monetary policy could be more gradually tightened; accelerate fiscal adjustment; additional reserve accumulation desirable	Some appreciation acceptable; scope to accumulate additional reserves
	CFMs	**–**	**Targeted macro-prudential measures**	**–**

The IMF (2011a) rightly emphasized that the framework is intended to adapt based on experience of its application. A comparison of the illustrative judgment- and threshold-based assessments as set out in the framework for each of the countries assessed as well as across countries provides some insights on how the framework might be refined to provide more effective guidance for IMF staff in their demanding task of prescribing appropriate policies in an efficient and evenhanded manner. Taking the threshold-based approach as the basis, it may

be reasonable to further tailor the criteria by defining the thresholds more flexibly and relying on a broader list of variables, in particular to assess signs of overheating and reserve adequacy. This said, the most problematic aspect of tailoring thresholds is that the analysis becomes more complex and raises questions of evenhandedness. In contrast, the judgment-based approach is perhaps more suitable as it builds on the IMF's existing in-depth country specific knowledge and regular dialogue with the authorities. However, it could still make use of some thresholds or other, more specific criteria. For example, IMF staff could be encouraged to make a judgment-based assessment considering how the country measures up against a range of thresholds.

To conclude, any framework—whether judgment-based, threshold-based, or a well-defined composite of the two—must balance the strengths of the two approaches, allowing for IMF staff's judgment while ensuring that advice is consistent across countries. This paper tried to provide some input into the current discussion, based on three topical case studies. It may contribute to the work on a consolidated and generally acceptable operational framework.

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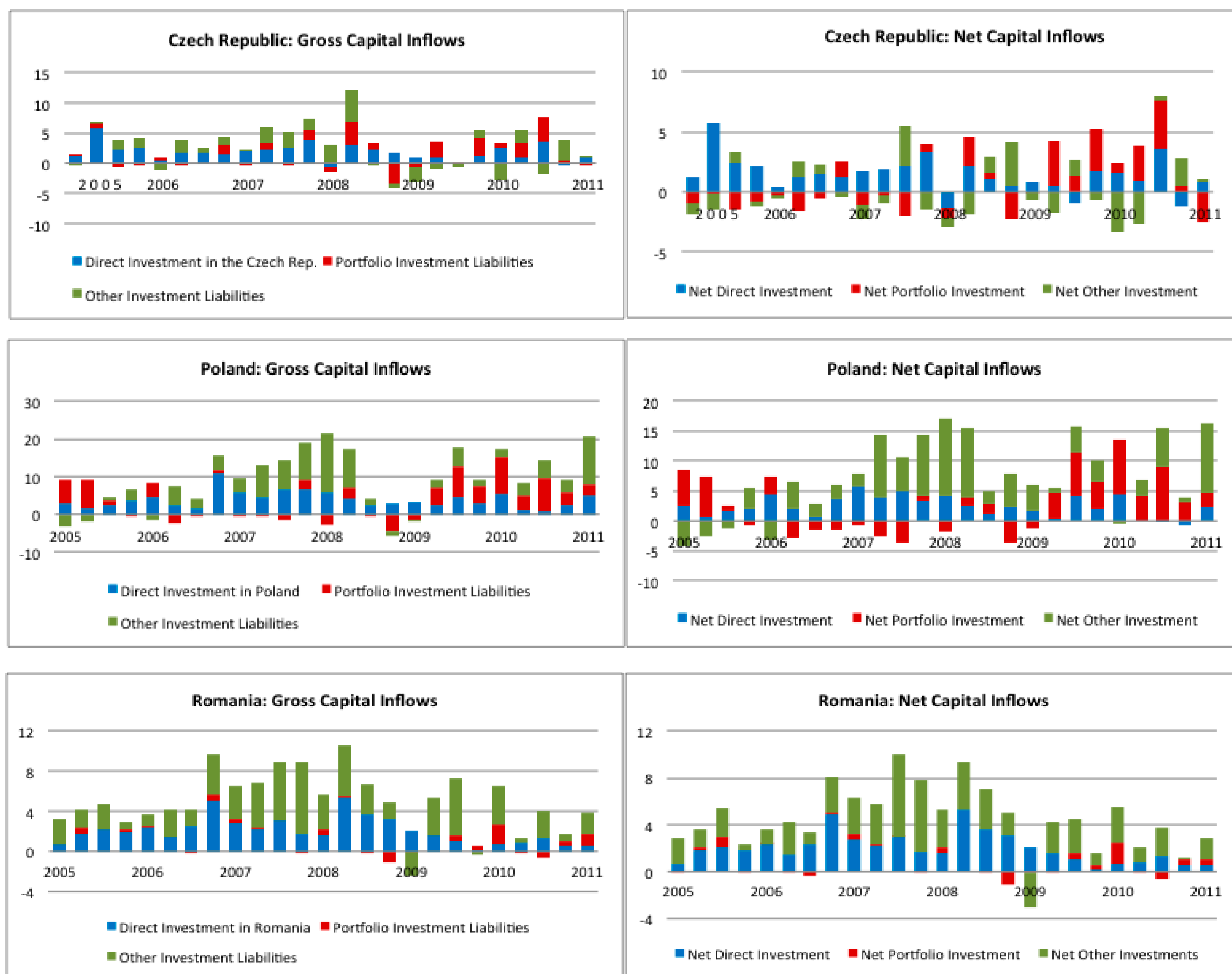
Figure 2: Gross and Net Capital Inflows (in USD billions)



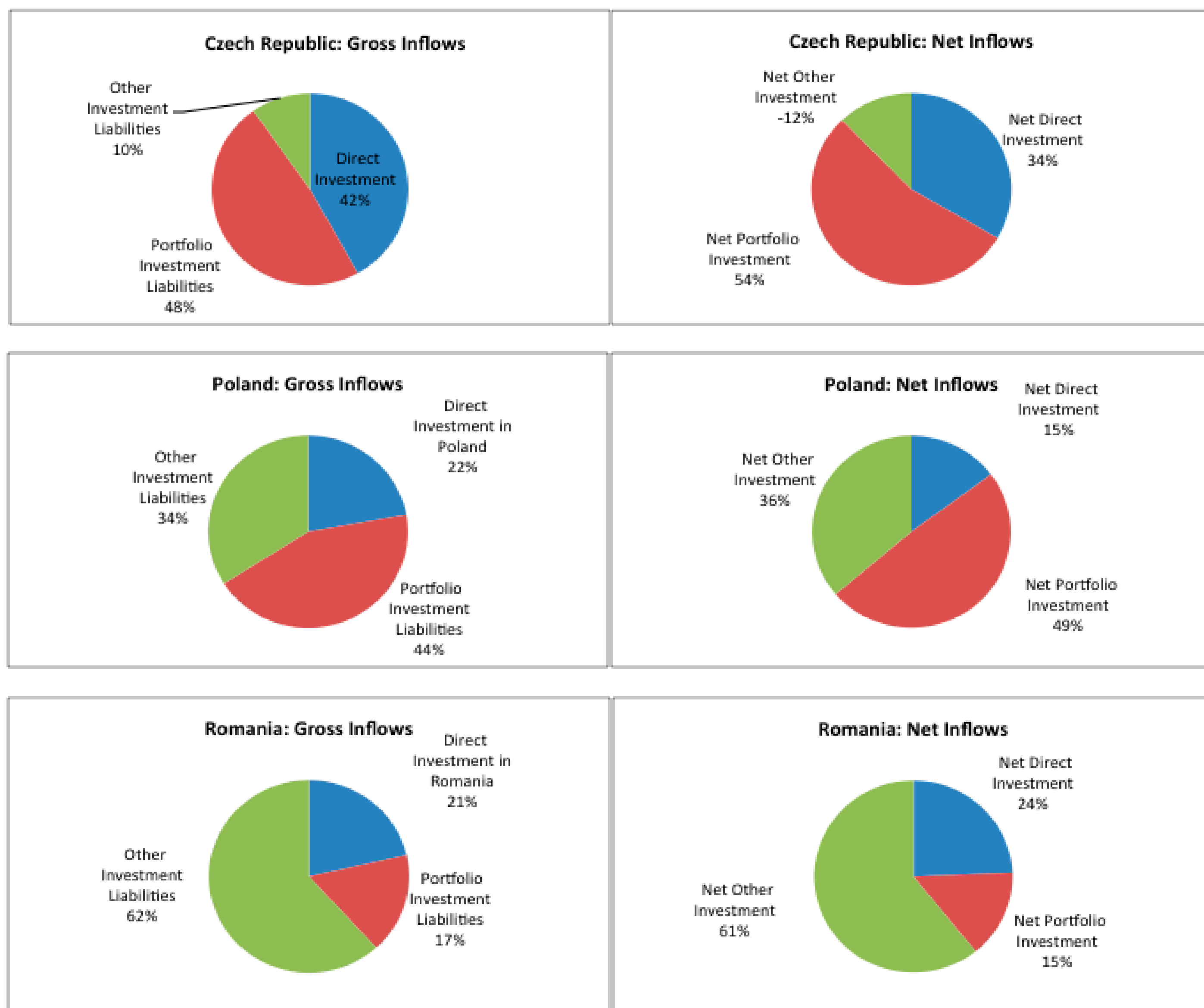
Sources: CNB, IMF, NBP.

Gross inflows are defined as the sum of inward FDI, portfolio liabilities and other investment liabilities. *Net* inflows are defined as the sum of the balances of foreign direct investment, portfolio and other investment.

Figure 3: Gross and Net Portfolio Inflows (in USD billions)

Sources: CNB, IMF, NBP.

Figure 4: Composition of Gross and Net Capital Inflows



Sources: CNB, IMF, NBP.
Composition of *gross* and *net* inflows over the period 2009 QIII – 2011 QI.