

### **Box 3. Institutional Arrangement for Debt Management**

*Good institutional arrangements are laid out in Law and regulation. The implementation of these arrangements exhibits gaps, mainly due to severe staff shortages. In addition, communication could be further improved, and information exchange with the NBRM could be formalized.*

The Public Debt Law established the responsibilities of the MoF in managing public debt. With the MoF, the Public Debt Management Department (PDMD) is responsible for debt management. It is organized according to best practice in a front, middle, and back office. However, until recently the PDMD had been without a department head for about two years, and the department is still understaffed. In particular, the middle office effectively consists of a single individual, which is not adequate to undertake comprehensive debt management analyses.

Communications with investors are taking place, but more pro-active practices could be introduced. Such practices should include the publication of regular reports on the public debt market, as well as constant contacts with the main stakeholders (among which investors, regulators, financial press, and rating agencies). Front or middle office staff could be assigned with these tasks.

The relationship between debt management and monetary policy has been working well but could be improved further. Specifically, while functionally adequate, the information exchange lacks a formalized structure. A high-level debt management committee could be set up and tasked with coordinating strategy and overseeing implementation. In addition, an operational sub-committee could discuss more granular and technical issues regarding issuance coordination. Liquidity issues are managed through the existing liquidity committee, which meets weekly. This committee could improve its functioning if it could work against the background of a clear definition of the optimal level of cash balances.

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Source: IMF, 2011.

**REFERENCES**

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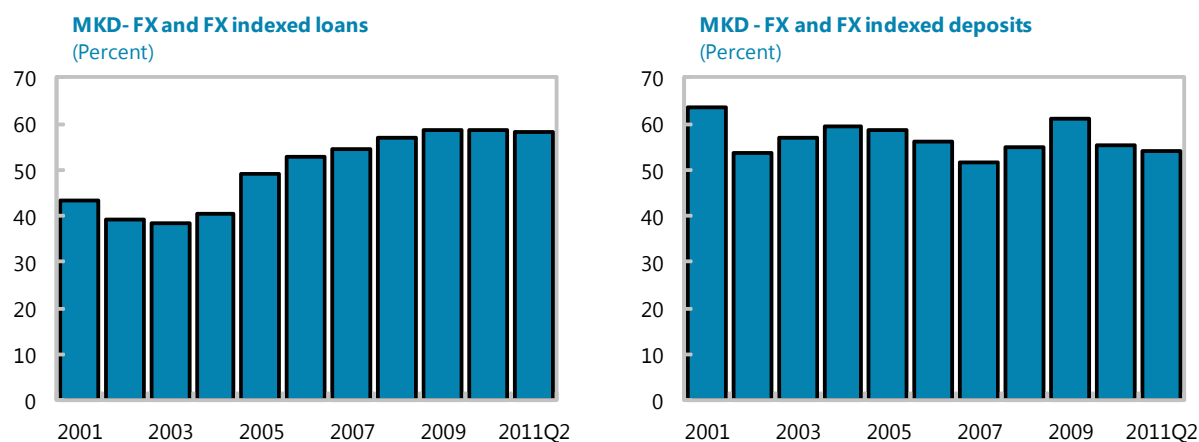
## II. EUROIZATION IN FYR MACEDONIA: CAUSES AND POLICIES IMPLICATIONS <sup>1</sup>

*Macedonia is heavily euroized, similar to other emerging markets in the region. This paper analyzes the main causes of euroization in Macedonia, and discusses prospects for and potential benefits of de-euroization. It argues that de-euroization would provide a useful safety valve but other benefits are more limited due to the de facto exchange rate peg to the euro. Based on cross-country experience, Macedonia is likely to remain significantly euroized for an extended period of time. In our view, an appropriate strategy would be to retain incentives and provide a supportive environment for gradual de-euroization by maintaining prudent macro policies, developing domestic debt markets, and maintaining prudential policies that mitigate FX risks, create incentives to de-euroize, and provide buffers in the financial sector.*

### A. Introduction

1. **The Macedonian economy is highly euroized financially.**<sup>2</sup> Over the last decade, foreign currency (FX) and FX-indexed deposits have accounted for more than 50 percent of total private sector deposits in Macedonia. Loan euroization has increased from around 40 percent at the beginning of the decade to above 55 percent in the last years.

**Figure 1. FYR Macedonia: Loan and Deposit Euroization**



Source: NBRM.

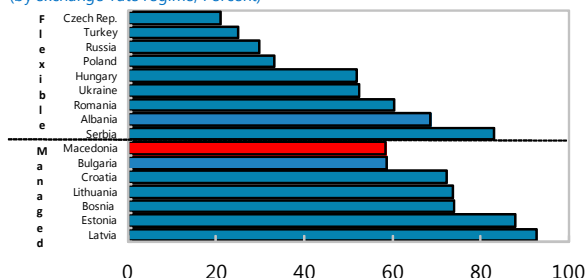
2. **High euroization is common in emerging Europe, with countries having fixed exchange rate regimes generally more euroized.** Emerging Europe, in general, has a higher

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<sup>2</sup> The term “euroization” denotes the use of any foreign currency, not just euro. Financial euroization is commonly measured as resident financial institutions’ holdings of foreign currency denominated assets (loans) or liabilities (deposits) from households and nonfinancial corporations.

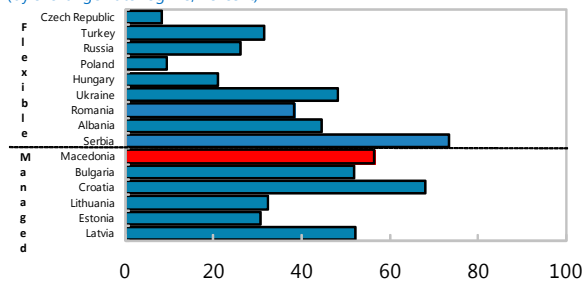
degree of euroization (about 60 percent on average) than other regions. For example, FX lending in emerging economies accounts only for 25–30 percent of total loans in Latin America and 5–10 percent in East Asia. Also, countries with fixed exchange rate regimes tend to be more euroized than those with flexible regimes (see Figure 2). In terms of loan euroization, Macedonia is the lowest among pegs, at above 55 percent, for the past few years, slightly below the regional average. In terms of deposit euroization, however, Macedonia is one of the most euroized even among pegs.

**Figure 2a. Loan Euroization, 2009**  
(by exchange rate regime; Percent)



Sources: IFS, FSI, National Bank of Serbia and NBRM.

**Figure 2b. Deposit Euroization, 2009**  
(by exchange rate regime; Percent)



Sources: IFS, FSI, National Bank of Serbia and NBRM.

3. **A high degree of loan euroization is usually perceived as a policy challenge.** As discussed below, euroization poses balance sheet risks to the economy, as borrowers in FX but with income and assets denominated in local currency are vulnerable to sudden shifts in the exchange rate. As a result, currency risk could turn into indirect credit risk. In addition, high euroization reduces the effectiveness of monetary policy transmission as the central bank may affect local currency rates through its policy rate, but has little effect on foreign currency rates.

4. **This paper assesses the causes of the high degree of euroization in Macedonia and discusses policy implications, drawing from other countries' experiences.** The first section reviews the empirical and theoretical literature on the roots of FX lending. The second section analyzes possible causes for Macedonia. Finally, the last section discusses policy implications for Macedonia, based on the costs and benefits of de-euroization and lessons from cross-country experiences.

## B. Causes of Loan Euroization

### Main Causes Identified in the Literature

5. **Empirical studies have found that loan euroization decreases with exchange rate volatility.**<sup>3</sup> The finding holds across exchange rate regimes and within floating regimes. This is in line with what we observe in the SEE region (Figure 2a). Also, inflation volatility tends to be associated with higher levels of FX borrowing. Moreover, loan euroization is lower the

<sup>3</sup> See Zettelmeyer, Nagy and Jeffrey (2010) for a survey of the empirical literature on loan euroization.

higher the credibility of macroeconomic policy and institutions, the higher the interest rate differential, the higher the financial development (e.g., credit to GDP) and the higher the foreign (and domestic FX) funding of bank credit.

**6. The multiple root causes of loan euroization identified in the theoretical literature can be classified into demand and supply-driven causes.** Demand side explanations may be grouped in three categories as follows:

- Interest rates on FX-loans are lower than on local currency loans due to devaluation/depreciation risk. Borrowers might not understand, or might underestimate or excessively discount the risks associated with borrowing in FX. In that case, they would opt for the apparent cheapest option, ignoring the risk factor. The outcome is suboptimal both from an individual and social point of view. To address this problem, supervisors in Austria, Hungary, Latvia and Poland, for example, have pushed banks to disclose exchange rate risks to clients, with the assumption that under better information borrowers will reduce their demand for FX loans.
- Borrowing in FX may be an individual and social optimal decision in an environment lacking credible macroeconomic policies or institutions. For example, borrowing in FX could be the less risky strategy in an environment in which inflation is hard to predict. Borrowers commit to a nominal payment in the future (which includes an expected inflation risk premium). Residents' incomes are generally denominated in local currency but adjusted with inflation. When inflation is more volatile than exchange rate fluctuations, borrowing in FX may be preferable as it helps borrowers hedge against inflation risk.
- Residents may choose to borrow in FX because they do not expect to fully bear the costs associated with a depreciation-related insolvency (moral hazard). This would be the case of explicit or implicit government guarantees to borrowers. Moreover, borrowers may not fully internalize the collective benefits of borrowing more in local currency (externality), i.e., when foreign exchange exposures aggravate the risk or severity of a crisis but individual borrowers do not take into account the impact of their decision on collective risks. As a result, euroization could be optimal from an individual point of view but yield a suboptimal social outcome.

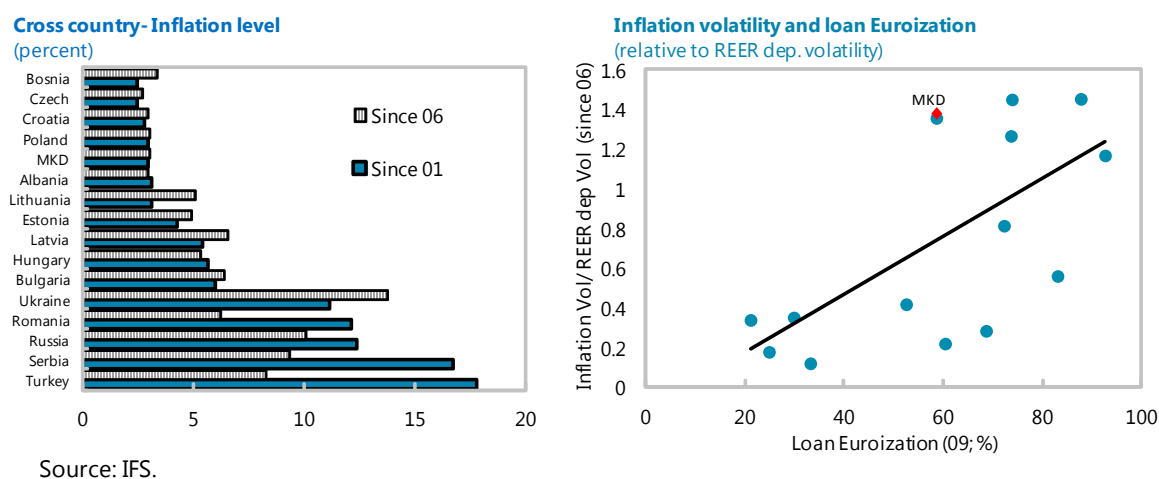
**7. On the supply side, banks may price FX loans to make them more attractive relative to national currency loans to match the currency structures of their assets and liabilities.** This could be the result of regulatory requirements or of bank aversion to assume currency risk directly. This explanation is relevant when bank liabilities are biased towards FX (e.g., high euroization in deposits or FX funding from abroad). Rosenberg-Tirpak (2008) and Luca-Petrova (2007) document this finding for new member states of the EU and transition economies, respectively.

## Assessing Loan Euroization in FYR Macedonia

8. **In this section we review for Macedonia the four possible causes of loan euroization described in the previous section.** We conclude that all explanations contribute to euroization in Macedonia, albeit to different degrees.

9. **Inflation and real exchange rate depreciation volatility appear to play a role behind the level of euroization in Macedonia.** For emerging Europe, De Haas (2010) finds that higher exchange rate depreciation volatility discourages FX lending and Zettelmeyer-Nagy-Jeffrey (2010) document that FX lending is more prevalent in countries with higher inflation volatility. While the successful exchange rate peg has helped Macedonia attain a low level of inflation, inflation volatility is not low when compared to other countries in the region. Exchange rate volatility, on the other hand, has been low as a result of the peg. Therefore, the rational choice would be to take the smaller risk, i.e., the exchange rate risk, and hence use FX in financial transactions.

**Figure 3. Inflation level and volatility.**



10. **Expectations of inflation volatility and institutional credibility also play crucial roles.** Expectations of inflation volatility may differ from observed inflation volatility, as people tend to have long memories of past hyperinflation episodes, even if the current regime has managed to reduce inflation levels and volatility significantly. In the case of Macedonia, though more than a decade has passed since the hyperinflation episode in 1993, there is evidence that people still see the euro as a better store of value (OeNB Euro Survey, 2007).

11. **The stability of the exchange rate peg is crucial for the health of the financial system and borrowers might be counting on an implicit government guarantee.** Regulation in Macedonia requires that banks' net open FX position does not exceed 30 percent of their own funds. Therefore, there is no significant currency mismatches on the banks' balance sheets. However, there is significant *indirect* credit risk, as many borrowers of FX loans are not hedged. Loans to naturally hedged companies account for only

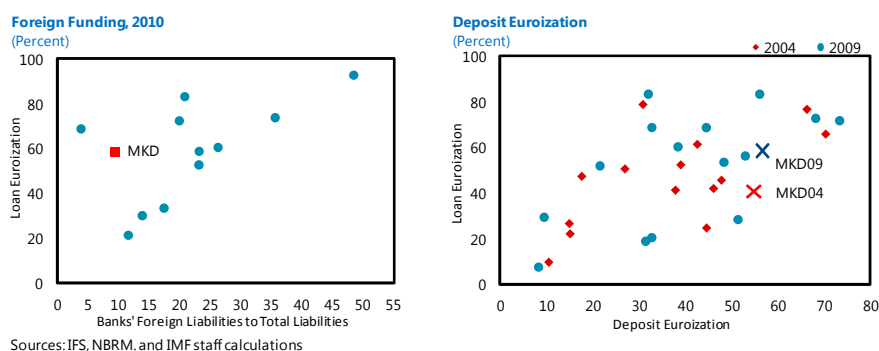
9.9 percent of total FX and FX-indexed loans. In the tail risk event of a large depreciation, the consequences for the financial system would be so dramatic that borrowers may expect the government to take extraordinary measures to maintain the peg at all costs, or in the event of depreciation, to alleviate the costs of depreciation-related insolvencies.

**12. Borrower myopia does not seem to be a strong reason behind loan euroization.**

Under this hypothesis, borrowers prefer to borrow cheaper FX loans in spite of the higher currency risk. The explanation that borrowers might not understand, underestimate or excessively discount the risks associated with borrowing in foreign currency conflicts with the high degree of *deposit* euroization in Macedonia. In spite of the higher returns offered by local currency deposits, residents choose to keep a large share of their deposits in FX, showing an understanding of the currency risks.

**13. On the supply side, deposit euroization is prevalent, contributing to high loan euroization.** It has been documented that banks' need to match the currency structure of their assets and liabilities plays a role behind FX lending. In the case of Macedonia, foreign currency funding from abroad is limited. However, deposit Euroization ranks amongst the highest in the region. In addition, FX deposits appear to be very sensitive to residents' perceptions of macroeconomic risk.

Figure 4. Funding sources currency denomination.



**14. In Macedonia, the authorities have put in place several safeguards and incentives to reduce the risk of euroization and build buffers.** These include differential reserve requirements, limits on net open FX positions, and prudential requirements that require banks to assess and control indirect FX risk (Box 1).

### C. Policy Implications for FYR Macedonia

**15. While de-euroization would bring benefits, these are more limited in a fixed exchange rate regime such as in Macedonia than in a more flexible regime.** In general, the literature has identified the following main benefits of financial de-euroization:

- *Avoiding loss of seigniorage.* If there is a high degree of currency substitution (use of euro banknotes), then the loss of seigniorage could be large. Although data are not

available on seigniorage, there is little evidence of significant currency substitution. Therefore, de-euroization is unlikely to affect seigniorage much.

- *Improving the effectiveness of monetary policy.* As monetary policy could have a direct impact only on the local currency rates, a high degree of euroization would

#### **Box 1. Regulation of FX-Induced Credit Risk in the NBRM's Supervisory Framework**

*Macedonia has in place a number of prudential regulations that act as incentives against euroization, mitigate risks, or create buffers.*

**Differential reserve requirements.** Reserve requirements are 10 percent on denar deposits, 13 percent on FX deposits, and 20 percent on FX-indexed deposits.

**Net open FX position:** A bank's aggregate net open FX position at the end of any business day should not exceed 30 per cent of the banks' own funds. The FX position includes both FX and FX-indexed assets and liabilities.

**Capital adequacy:** The additional capital requirements for currency risk are calculated by multiplying the sum of the absolute amount of the net position in gold and the bank's aggregate FX position, by 8%.

**Identification of unhedged FX borrowers:** A bank should have a system to assess and monitor the compliance of a client's FX position. In particular, banks should:

- Monitor and assess the borrower's FX claims and liabilities structure by currency and maturity;
- Stress test the borrower's cash flows in terms of their capability to repay liabilities to the bank following a depreciation of denar against the currency in which the loan is denominated, or indexed, at least on an annual basis;
- Determine an adequate amount of collateral, in line with the assessment of the borrower's creditworthiness and its capacity to repay its debt following a depreciation of denar;
- Determine a quantitative limit on the amount of each FX or FX-indexed loan to residents, as well as a quantitative limit on the share of the FX and/or FX-indexed credit exposure of residents in the bank's total credit exposure;
- Assess the influence of exchange rate fluctuations on the bank's loan portfolio, by stress tests or other types of simulation, at least once a year, if the bank's FX and FX-indexed loans to residents exceed 15 percent of its total credit to residents, net of the bank's FX deposits and the FX or FX-indexed investments of securities issued by the Macedonian government.

A client is considered to have a hedged FX position if its expected FX inflows, FX and FX-indexed claims cover at least 80 percent of its total expected FX outflows, FX and FX-indexed liabilities.

**Documentation of FX exposure:** A Bank's credit file has to contain all relevant data available to the bank for determining a client's identity, creditworthiness, regularity of settling its liabilities and collateral quality, including approval and monitoring exposures which are part of the retail credit portfolio and analysis of the borrower's exposure to foreign exchange rate risk.

- limit the effectiveness of monetary policy transmission. However, given Macedonia's exchange rate regime (i.e., a peg to the euro), which has served Macedonia well in the

last decade and has been seen as the most important policy anchor (not only for monetary policy, but also as a disciplining tool for fiscal policy), the amount of monetary policy autonomy is limited.<sup>4</sup> Therefore, under the current exchange rate regime, there may not be much gain in this area even with zero degree of euroization.

16. ***Reducing balance sheet risks.*** This would be the main benefit of de-euroization in Macedonia. Direct or indirect currency exposure on banks' balance sheets renders the banking system vulnerable to large exchange rate movements. From an individual banker's perspective, this risk is small as Macedonia is firmly committed to maintaining the exchange rate peg, and even if devaluation happens in a tail risk event, the state is likely to provide support to the banks to contain losses. However, on an aggregate level, such balance sheet risks deprived Macedonia a "safety valve"—that is, to use exchange rate flexibility as a shock absorber in a tail risk scenario. Although such crisis scenario seems unlikely at this point, reducing balance sheet risks would allow the "safety valve" to be available.

17. **Cross-country experiences suggest that progress towards de-euroization will take time to achieve.** A few lessons could be drawn from past successful cases of de-euroization:

- ***In general, countries that managed to de-euroize successfully tend to have flexible exchange rate regimes.*** Exchange rate volatility makes the foreign exchange risk more apparent, providing disincentive to euroization. Credible fixed exchange rate regimes, on the other hand, may be seen as an implicit guarantee and hence could encourage euroization. The four successful cases of de-euroization identified in Reinhart, Rogoff, and Savastano (2003)—Chile, Israel, Mexico, and Poland—all have flexible exchange rate regimes.<sup>5</sup> Given Macedonia's strong commitment to the exchange rate peg, it could be more difficult to de-euroize rapidly. Macedonia's long-term commitment to join the EU and eventually the euro area adds credibility to the exchange rate regime and make a move towards more exchange rate flexibility less likely.
- ***De-euroization needs to be underpinned by macroeconomic stability, and supported by public debt management and development of domestic financial market.*** For example, Israel, Chile and Poland all started their de-euroization process by bringing down inflation, gradually stabilizing the economy, and liberalizing the financial sector and the capital account. Macedonia has been able to achieve macro stability under the exchange rate peg and prudent fiscal policy in recent years, and managed to weather the global crisis relatively well. Active public debt management and

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<sup>4</sup> For detailed discussions on the effectiveness of monetary policy in Macedonia under the peg, see Selected Issues Paper "*Monetary Policy in Macedonia*", 2012.

<sup>5</sup> The successful cases are identified based on the following criteria: deposit euroization falls by at least 20 percentage points and remains below 20 percent.

development of domestic financial market are important policies to support de-euroization. Issuing local currency-denominated public debt can de-euroize the government's balance sheet, lengthen the domestic currency yield curve and foster domestic debt market. Macedonia was making progress in this area until the global crisis, and then moved in the opposite direction by relying more on foreign-currency denominated public debt.<sup>6</sup> Finally, developing a deep and liquid domestic financial market would increase the choice of local currency-denominated securities and may contribute to the decrease in FX-denominated assets (e.g., FX deposits). Encouraging the development of the domestic investor base, such as pension funds, would likely support demand for longer-term local currency instruments and markets.

- ***De-euroization could be a long process and may last after macro stability has been achieved.*** The public tends to have long memories of past crisis episodes, and hence may continue to regard local currency as more risky. Also as the public has become accustomed to using foreign currency in financial transactions and does not internalize the negative externality of using FX to the whole economy, de-euroization does not happen automatically even if successful macro stabilization has increased the attractiveness of the local currency. For example, Chile continued to experience indexation (to FX) even after it managed to stabilize the economy in the 1990s and later adopted inflation targeting and allowed the peso to float freely in 1999.
- ***Prudential regulation should remain in place to address euroization.*** This will help to ensure management of FX risks, provide buffers, and create soft incentives for de-euroization. Macedonia could also consider enhancing such prudential policies with measures taken by other countries, including (i) higher liquidity requirements on foreign currency deposits (Angola and Uruguay) or foreign currency loans (Croatia); (ii) higher capital and provisioning requirements on foreign currency loans, especially to unhedged borrowers (Angola, Honduras, and Vietnam); and (iii) lower loan-to-value ratio to improve buffers on foreign exchange denominated loans (Hungary).

## D. Conclusions

18. **This paper analyzes the main causes of euroization in Macedonia.** High loan euroization in Macedonia appears to be driven by inflation volatility, including both current volatility and memories of past hyperinflation episode, low exchange rate volatility and potential implicit guarantees perceived under the exchange rate peg, together with larger demand and supply of euros as Macedonia becomes more integrated to the region in trade and financial flows.

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<sup>6</sup> For assessment and recommendations on how to development domestic debt market, see Selected Issues Paper “Debt Market Development in FYR Macedonia”, 2012.