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Negative Externalities of Financial Dollarization*

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Abstract

Dollarization (usage of a foreign currency in place of a domestic one) is a widely observed phenomenon that historically emerged as a result of extended macro-financial instability and extreme price and nominal exchange rate fluctuations. Complete loss of public confidence in a local currency pushed lenders and borrowers to seek more stable foreign currencies like the US dollar and euro. What is more puzzling though is that in many countries dollarization remained at an elevated level even after taking care of its root cause (i.e. after achieving price stability). There has been several explanations of this phenomenon (the so-called dollarization hysteresis). In this short paper we propose additional explanations in the form of several dollarization-induced negative externalities, including an amplification of credit procyclicality and exchange rate pass-through or a worsening of credit ratings of dollarized economies. We also offer some back-of-the-envelope calculations showing that these externalities could be economically significant (about 1 pp impact on real GDP growth per year) for a small and highly dollarized country like Georgia. These type of market failures underline the importance of prudential policies that internalize negative externalities and, hence, level the playing field for the local currency.

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Keywords: Financial dollarization; Negative externality

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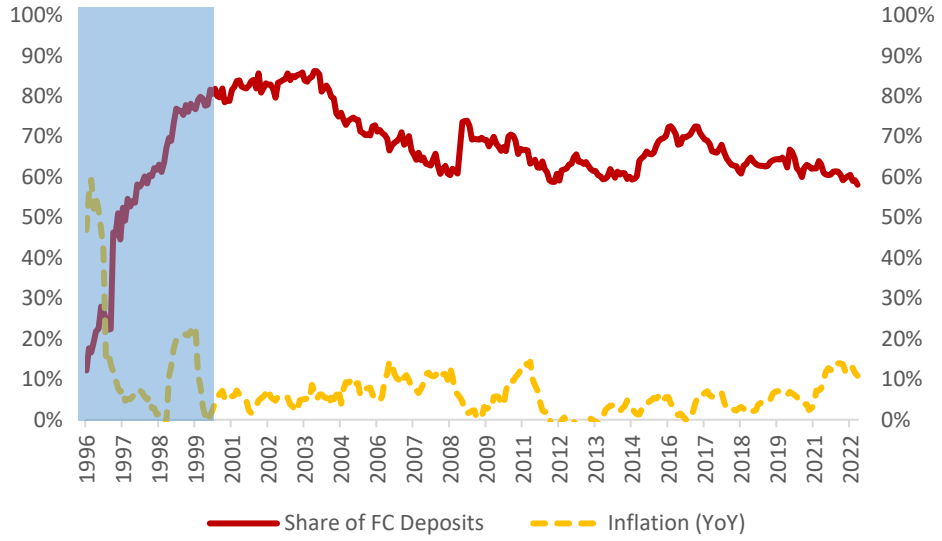
Content

I. Introduction

Historically, dollarization[1] emerged as a by-product of extended periods of macro-financial problems and extreme price and nominal exchange rate fluctuations. Years of high inflation and currency instability diminish public confidence in a local currency, pushing lenders and borrowers to seek more stable foreign currencies like the US dollar and euro (Dalgic, 2018). This was especially prominent in the 1990s, when capital mobility and cross-border capital flows increased access to foreign currencies worldwide and contributed to the rise in global dollarization. The same pattern was observed in Georgia (see Figure 1).

Figure 1: Deposit dollarization and inflation in Georgia



Source: National Bank of Georgia (NBG)

Following the period of macro-financial stability in emerging market economies (EMEs) in early 2000s, dollarization declined. What is puzzling though is that despite these positive developments, that decline was modest (see Figure 1 for the case of Georgia[2]) and the level of dollarization still remained high (it even continued to grow in many EMEs). This phenomenon was described as dollarization hysteresis (Oomes, 2003).

[1] Economists commonly differentiate between three types of dollarization: (1) real dollarization, when a country sets local prices and wages in a foreign currency; (2) payments dollarization, when a country accepts a foreign currency as a form of payment for various transactions and (3) financial dollarization, when domestic residents hold financial assets denominated in a foreign currency. In this paper we will mainly focus on financial dollarization.

[2] Early 1990s is not shown on the figure as it was a period of hyperinflation, preceding the subsequent rise in dollarization.

There are several explanations as to why foreign currency (predominantly, USD) borrowing persisted over the years (Mutlu, 2021). First, USD plays a major role in global trade (i.e. dollar invoicing), which incentivizes firms to accumulate foreign currency assets that will hedge them from fluctuations in revenues and costs due to exchange rate volatility. Additionally, hard currencies like USD offer more stable store of value compared to a local currency. Thus, USD savings serve as a hedging mechanism for households, as domestic currency (DC) tends to depreciate during economic downturns. As a result, households have an incentive to switch to foreign currency (FC) deposits, increasing banks' liability dollarization.

We, however, provide additional insight into dollarization hysteresis by describing how costs of financial dollarization can be transmitted not only to the financial market participants that contributed to dollarization, but to the whole economy. In other words, when financial market participants intermediate in FC, the benefits of these actions are primarily enjoyed by those market participants, while the resulting costs are shared by everyone, including those that have no close ties with the financial system whatsoever. This constitutes a significant economy-wide negative externality. What exacerbates the problem then is that, according to economic literature, without policy intervention, products with negative externalities can remain in excess "production" *permanently* (i.e. market failure). In dollarization language, this situation can turn into dollarization hysteresis – i.e. situation where dollarization sticks at excessively high levels even after macroeconomic stabilization.

In this paper we discuss a number of explicit practically-relevant channels of financial dollarization resulting in negative externalities and, where possible, estimate the approximate costs, in terms of GDP, of such dollarization-induced externalities for the economy. More specifically, we discuss (i) how balance sheets of FC borrowers/lenders are affected through exchange rate effects and spread the shock towards the whole economy; (ii) what are the implications for inflation and monetary policy effectiveness; and (iii) what consequences high level of dollarization can have on sovereign credit ratings. Hence, the main section of the paper is divided into three subsections where we review those different types of externalities, while in the concluding section we summarize the issue and provide recommendations for the policy-makers and future research.

II. Dollarization-induced negative externalities

While direct costs and benefits of financial dollarization and required policy actions are widely researched, the literature about the negative externalities of financial

dollarization is relatively scarce. This section tries to provide practically-relevant examples (channels) of such dollarization-induced negative externalities, to motivate more research on this topic. In addition, we try to provide some back-of-the-envelope calculations for the costs of such negative externalities in case of Georgia. These estimates serve two related purposes: to show that these costs are meaningfully high under simple but reasonable assumptions and, therefore, to motivate more thorough future empirical research of these apparently important but less explored costs.

A. Balance sheet effects & credit procyclicality

Small open economies are often subject to exchange rate depreciations which can be caused by a number of reasons, including an external shock or economic fundamentals in the country. While in pre-1990s era depreciation was viewed to have an expansionary effect on an economy through a trade balance channel, today there is evidence that balance sheet effects (in our case, deterioration of economic agent's net worth due to an exchange rate depreciation) can dampen that effect. More specifically, in countries with a high level of liability dollarization, a large depreciation increases the burden of FC denominated debt and as a result, unhedged households and firms have a harder time servicing existing debt or accessing a new one (because net worth of unhedged borrowers is now lower due to their inflated FC debt, while their assets generate income in a domestic currency). Thus, balance sheet effects can dampen the stabilizing impact of exchange rate adjustments during economic shocks. This can have a significant effect on the country's employment level, economic growth and even inflation (Sopromadze et al, 2021).

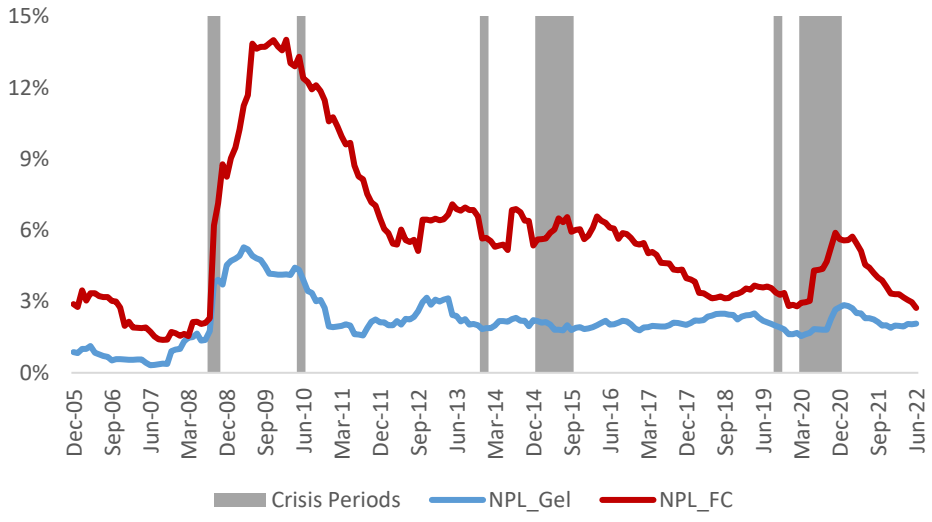
In more extreme cases, these balance sheet effects caused by an exchange rate depreciation can even trigger "corporate and banking crises, exacerbate sudden stops, cause output volatility, and even result in self-fulfilling macroeconomic crises" (IMF, 2021). Thus, dollarization not only has direct costs through credit and liquidity risks for those who lent/borrowed in FC, but it also increases output volatility in the whole economy and can become the reason for banking crisis (significant potential cost for taxpayers or for people with no role in generating dollarization in the first place). Empirical studies confirm that countries with high financial dollarization have more unstable money demand, higher chance of banking crisis after currency depreciation and more output volatility (Yeyati, 2006).

Another facet of this channel through which a dollarization-induced negative externality can manifest is through generating (more) procyclicality of credit extension. For example, when external inflows improve even if only temporarily, exchange rate starts appreciating in a relatively shallow FX markets. This reduces FX leverage in the

economy (due to valuation/balance sheet effects), which supports further FC lending at home. This can amplify the initial appreciation and, hence, result in even more FC lending. Yet, these two factors (excessive real appreciation and a FX lending boom) are usually precursors of twin banking and currency crises (Tornell & Westermann, 2002), which hurt everyone, not just FC borrowers. On the other hand, if external inflows deteriorate and GDP falls, one may want domestic credit to cushion some of this decline. Yet, that's exactly the time when dollarized agents' leverage suddenly inflates and, hence, limits credit extension not expands it – i.e. credit procyclicality. To summarize, dollarization supports accumulation of risks during good times and amplifies the negative effects of economic shocks during bad times, inflicting cost on all players in the economy.

To provide some perspective on the issue we discuss an example of Georgia, a highly dollarized small open economy. Figure 2 below shows the ratio of FC and DC nonperforming loans (NPL) to gross loans over the years in Georgia. The grey highlighted periods correspond to 'crisis' periods or months with increased currency pressure in Georgia as defined by Pantsulaia et al (2020). As expected, the figure shows that the share of foreign currency NPL to gross loans has been significantly higher compared to the share of local currency (Georgian lari - GEL) NPL over the years, especially during exchange rate pressure periods. Also, while both indicators tend to rise during or soon after the crisis (shown in grey), the rise in foreign currency NPL ratio is consistently and significantly higher, indicating higher risk of FC loans in the dollarized Georgian banking system. This is true even when financial supervision and regulation in Georgia tries to force banks to have significantly stricter credit standards when extending FC loans.

Figure 2. NPL to total gross loans in crisis periods

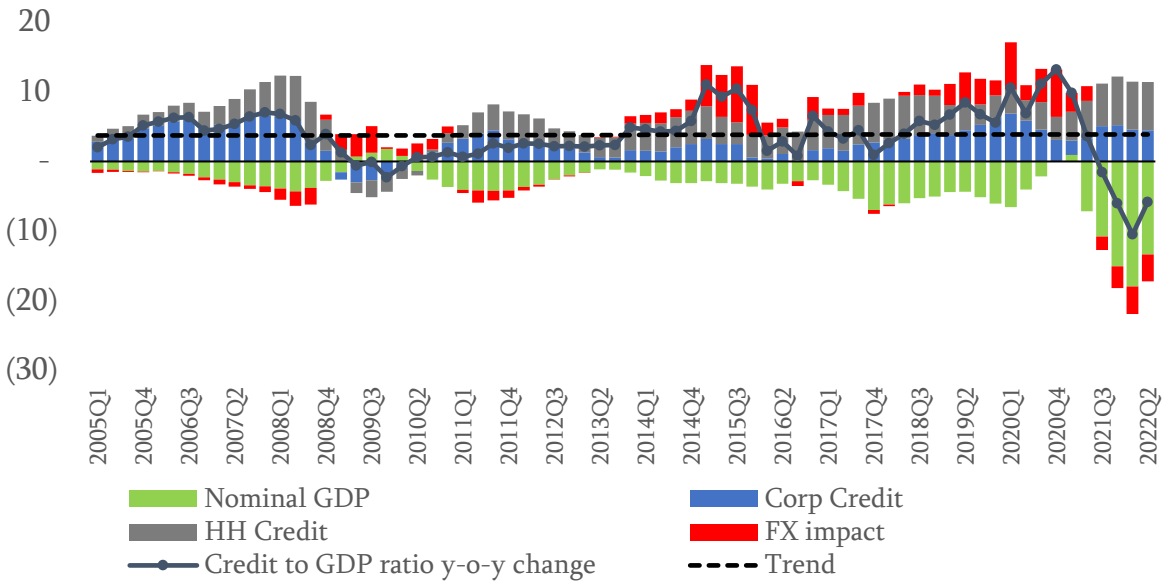


Source: NBG

The effect of dollarization on increasing debt burden for unhedged borrowers during an exchange rate depreciation is even more visible in the share of restructured loans by currency. Since the pandemic, there has been a rise in debt restructuring for both DC and FC denominated loans in Georgia. However, companies with FC debt had a significantly higher vulnerability[3] following the depreciation and as a result, afforded significantly less spending in the economy.

Finally, exchange rate effects due to dollarization can also quickly inflate credit-to-GDP ratio, which limits the amount of new loans that could be issued in the economy. Lower new credit extension on the other hand translates into lower GDP. Figure 3 shows the effect of exchange rate volatility on the growth rate of credit-to-GDP ratio (red bars). Absence of dollarization would have resulted in this exchange rate effect being zero and there would have been a chance of extending new credit to reach the same level of credit-to-GDP.

Figure 3. Effect of exchange rate on credit-to-GDP ratio



Source: NBG

More specifically, in 2014-2021 this dollarization induced balance sheet effect (created by unexpected exchange rate depreciation) was 2.5% of GDP *on average*. Assuming a (conservative) credit multiplier of 0.5, an impact on GDP growth in 2014-2021 could have

[3] After the pandemic struck, almost every third FC borrower had difficulty servicing its debt in Georgia, while it was only about 1 in 10 for DC borrowers.

been about 1.3 percentage points (pp) on average. Of course, we should acknowledge that without dollarization we would also not have had FX depositors who benefited from the depreciation by about same magnitude. However, depositors have lower propensity to consume out of windfalls relative to debtors who usually deal with higher debt repayment costs fully through cutting consumption. Assuming that depositors propensity to consume is half of that of debtors, then the net effect on GDP growth becomes 0.6 pp. If only those 8 years are taken into consideration, this means that the level of real GDP today would have been 5% higher than it is now.

We acknowledge the caveat that if FC credit would have been in DC, this would mean more interest payments (as DC interest rates are higher) and, therefore, those cost-savings due to taking the exchange rate effect out could have been lower. In one extreme, if Uncovered Interest Rate Parity (UIP) holds in every period, then the exchange rate effect would have been completely replaced by the effect due to interest rate differential with no change in credit-to-GDP. However, a strong case can be made that exchange rate depreciation since 2014 has been unanticipated, contrary to UIP. Also, the credit multiplier we use for our rough estimate is relatively conservative. Finally, we don't add extra costs of dollarization due to higher NPL in FC, which usually implies more risk aversion from banks and, hence, stricter credit standards for all new loans (including DC loans). Still, even with that caveat in mind, 0.6 pp higher real GDP growth *per year* is too significant to dismiss.

B. Monetary policy & exchange rate pass-through

Empirical evidence has shown that high level of financial dollarization weakens the effectiveness of monetary policy. Felices and Tuesta (2013) showed that in countries with higher dollarization aggregate supply is more vulnerable to external shocks and central banks are less effective in stabilizing inflation: as foreign currency overtakes the financial transactions, changes in domestic interest rate have less effect on the aggregate credit market. As a result, countries with a high level of financial dollarization require more aggressive monetary policy (DC interest rate) reactions to inflationary pressures (Fabris and Vujanovic, 2017) – i.e. penalizing DC borrowers to deal with the risk created by FC borrowers (hence, negative externality).

Another aspect of monetary policy that is affected by a dollarization-induced externality is exchange rate pass-through to inflation. Studies indicate this pass-through is significantly higher in dollarized economies (e.g. Reinhart et al, 2003). As a result, in dollarized economies public expects that in the event of an exchange rate depreciation, the monetary authority/government will intervene to limit this depreciation ("fear of floating"). This perceived guarantee factors in the decision-making of various actors,

including the financial system, borrowers and depositors, and pushes dollarization above its optimal level. Recent empirical evidence confirms that in countries with higher dollarization, the exchange rate volatility passes through to inflation more strongly. More specifically, Sopromadze et al (2021) showed that exchange rate pass-through can be twice as large in small dollarized countries, compared to non-dollarized ones. When domestic producers are unhedged, exchange rate depreciation increases their debt-service costs, which pushes overall prices up. The paper concludes that liability dollarization of domestic producers can change the optimal monetary policy reaction to USD exchange rate volatility and call for additional tightening of monetary policy during the negative shocks to effectively control inflation – again penalizing DC borrowers to deal with the extra-inflation induced by FC borrowers. See also Yeyati (2021). This is a clear example of a negative externality of dollarization which needs to be addressed through public policy.

In terms of a Georgian example, because of this particular externality, in 2014-2021 the National Bank of Georgia had to tighten monetary policy more than it would have had in case of lower level of dollarization. Again, what's more, the resulting tighter financial conditions increase the cost of borrowing not for those directly contributing to financial dollarization, but for economic agents who borrowed in DC (since monetary policy rate affects only DC interest rates). According to the above mentioned empirical study by Sopromadze et al (2021), contemporaneous exchange rate pass-through to consumer prices is around 0.32 percent in dollarized countries, while it is almost twice less in non-dollarized ones. Considering that the exchange rate against USD in Georgia depreciated by about 9% on average per year in 2014-2021, the above pass-through estimates would suggest that inflation in Georgia would have been about 1.3 pp lower *each year* if there had been no dollarization[4]. This high inflationary environment obviously translated into tighter monetary policy than would have been necessary in case of no dollarization. Based on standard Taylor rule parameters, 1.3 pp extra inflation roughly results in a real interest rate increase equal to 0.7 pp, which translates into tighter credit conditions, unfavorable investment opportunities and, consequently, lower real economic activity in the country. Even assuming that 1 pp increase in real interest rate reduces real GDP by only 0.25 pp, the estimated decline in Georgian real GDP, due to dollarization, would then be about 0.2 pp *per year*. Hence, over the period of these last 8 years cumulatively, the level of real GDP today, only for this particular reason described in this subsection, would have been about 2% higher than it is now if dollarization had been low.

[4] This type of counterfactual statements obviously require a general equilibrium model. However, general equilibrium effects, theoretically, could even strengthen our point, since lower inflation would have required lower nominal depreciation for the same amount of real depreciation. Lower nominal depreciation, in case of Georgia, is usually associated with lower inflation expectations as well, possibly leading to even lower inflationary pressures in case of no dollarization.

C. Sovereign credit ratings

The third channel through which the negative externality of dollarization can manifest in practice (affecting the entire economy) is through worsened credit ratings of dollarized economies. Credit rating agencies play an important role, as their ratings influence foreign investments in rated countries. Stronger ratings imply lower sovereign risk premia and, hence, allow domestic borrowers, including financial institutions, corporations and governments, to increase liquidity and access international markets at a lower cost. Studies indicate that higher credit ratings are associated with lower five-year credit default swap spreads, which measure a market price of creditworthiness (GFSR, 2010).

Credit ratings are based on various quantitative and qualitative measures. Financial dollarization is one of these factors contributing to the final rating. All major international credit rating companies like Fitch Ratings, Standard & Poor's, and Moody's Investors Service have long been indicating that a high level of dollarization represents one of the major risks to the Georgian economy as it causes uncertainties related to economic resilience, reduces the effectiveness of monetary policy and increases banking sector risks. For example, Moody's recent report stresses that expected tightening of US monetary policy would slow down capital inflow in EMEs, causing economic slowdown and currency depreciation. As a result, asset quality of dollarized banks will deteriorate and the banks will experience credit losses (mainly caused by unhedged borrowers) and pressures on liquidity and profitability (Moody's, 2022). As a result of these risks, credit ratings of dollarized EMEs will most likely be lower than if they were less dollarized. This translates into deteriorated access to credit and higher costs of borrowing (Elkhoury, 2008) for all market participants in these countries, even those that didn't generate dollarization. Thus, negative credit ratings (partly) caused by financial dollarization are, indeed, a source of negative externality for the entire economy.

While existing studies have looked into the determinants of sovereign credit ratings, they have not effectively quantified the effect of financial dollarization on them. However, based on various reports by major credit rating companies, it is clear that dollarization is an important part of sovereign credit ratings. Also, there are empirical studies that have estimated the effect of credit ratings on country's economic growth. According to Chen et al. (2016), a one-notch downgrade of sovereign rating, which is very reasonable to expect due to high dollarization, causes a 0.3 pp decrease in country's five-year average annual growth rates. This decrease is materialized via interest-rate and capital flow channels. Then, assuming that the presence of high level

of dollarization decreases credit ratings by one notch (compared to otherwise similar economy with a low level of dollarization), 0.3 pp lower real GDP growth in 2014-2021 means that the level of real GDP today, only for this credit ratings' reason, would have been about 2-3% higher than it is now if dollarization had been low.

To summarize this section, the above three channels of negative externalities of dollarization suggest its cost in terms of real GDP growth possibly being as high as 1.1 pp (0.6+0.2+0.3) *per year*. Cumulating over the period of 2014-2021 this means about almost 10% less real GDP at the end of the period than we would have had if dollarization were low. While this number only comes from some back-of-the-envelope calculations (though with reasonable assumptions) and is not based on a general equilibrium model (which is necessary for a proper counterfactual analysis), it, given how high it is, still represents a call for academic economists to empirically study the dollarization-induced externalities more closely and policy economists to be mindful of this issue when providing policy advice. More importantly, this big of a cost, generated by FC borrowers/lenders, is shared by everyone in the economy – a market failure, justifying stricter prudential policy for FC intermediation.

III. Conclusions

It is evident that financial dollarization generates negative externalities through various channels and inflicts economic costs on the entire economy. The negative effects of dollarization include balance sheet effects, which can negatively affect the country's employment level, economic growth and inflation and in extreme cases even cause banking crises and output volatility; amplification of the credit procyclicality, which supports the accumulation of risks during good times and amplifies the negative effects of economic shocks during bad times (i.e. lower new credit extension due to inflated credit-to-GDP ratio); weakening of the effectiveness of monetary policy transmission and higher exchange rate pass-through to inflation, which requires additional monetary policy response and hurts domestic currency borrowers; worsened credit ratings of dollarized economies, which increases the costs of borrowing and decreases access to international markets for all agents in the economy.

Approximate calculations provided in this paper showed that these costs are meaningfully high (about 1.1 pp impact on real GDP growth) under simple but reasonable assumptions. We hope that these simple insights will motivate more thorough future empirical research of these important but less explored costs. Indeed, awareness of this kind of negative externalities of financial dollarization and quantification of related costs are especially important for proper policy-making.

Stricter policies are needed for foreign currency borrowing to internalize these negative externalities, eliminate moral hazard and level the playing field for the local currency. Prudential reforms play a central role in this endeavor.

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