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Economic Effects of Bulgaria's Eurozone Accession

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In this policy brief, we provide evidence on potential economic effects for Bulgaria from joining the euro area. We focus on four economic channels we view as central to the country's accession to the euro, namely inflation, trade integration, capital flows, and interest rates. We present the experience of comparable Eastern European countries immediately before and after the adoption of the Euro as a benchmark to understand the likely effects for Bulgaria.

Overall, our conclusions are that euro area accession is unlikely to constitute a major paradigm shift for Bulgaria's economy. Already now, Bulgaria's currency board is seen as credible, and interest rate differences relative to those of the euro area are small. Moreover, the Bulgarian banking system is already supervised by the European Central Bank's (ECB's) single supervisory mechanism (SSM). On the upside, membership in the euro area would provide Bulgaria with some benefits, such as easier liquidity management of Bulgaria's public finances and reduced transaction costs for trade. In addition, Bulgaria would become part of the formal decision-making process on monetary policy and banking supervision.

However, Bulgarian policy makers need to focus on several policy priorities to maximize the benefits of euro area accession. First, in view of the consistently documented one-off initial increase in services inflation and in perceptions of inflation, it is important for Bulgaria to implement the earlier Eastern European countries' policies in adapting their societies to the new currency.

Second, we foresee the trend to greater financial integration with the rest of the EU continuing when Bulgaria joins the eurozone, aided by the banking union and increased trade integration. Nevertheless, the risk of volatile capital flows and credit booms, although limited, needs to be monitored. Macroprudential policies, such as the countercyclical bank capital buffer are among measures that could be utilized should this risk becomes elevated.

Finally, Bulgaria is running conservative fiscal policies that contribute to the credibility of the currency board. While the accession to the euro area may have a limited impact on interest rates, it is important that policy makers continue to ensure appropriate fiscal policies in line with the EU treaties to avoid credibility risks.

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Bulgaria is a member of ERM II (the exchange rate mechanism) and on track to join the euro area. Thanks to the credible currency board, it already follows euro area (EA) interest rate developments closely. Yet, the accession to the euro raises doubts and questions in Bulgaria regarding its economic implications. Citizens particularly worry about possible inflation effects.[1]

In this policy note, we provide evidence on several potential economic effects of joining the euro area. We focus on four key economic channels we view as central to the country's accession to the euro, namely inflation, trade integration, capital flows, and interest rates. We present the experience of comparable Eastern European countries immediately before and after the adoption of the euro as a benchmark to understand likely effects in Bulgaria.

To be eligible for euro area accession, Bulgaria must satisfy four formal accession criteria set down in the Maastricht treaty. These include:

1. Price stability: average inflation is to be no more than 1.5 percentage points above the rate of the three best performing member states.

2. Sustainable public finances: the country shall not be under an excessive deficit procedure.

3. Durability of convergence: it will have no more than a 2 percentage points long-term interest rate difference or spread relative to the three best performing member states in terms of inflation.

4. Exchange rate stability: it will be a participant in ERM II for at least 2 years.

In addition to these formal criteria, there may be other factors ``relevant for economic integration and convergence'' that the country must fulfill.[2] The assessment of whether the country fulfills the criteria for accession is made in a convergence report issued by the European Commission and the ECB every 2 years with the next report planned for February 2024.

Bulgaria largely fulfills the formal accession criteria, except for the price stability criterion, which will be difficult to fulfill by the letter before the 2024 convergence report. This criterion is designed for a low inflation environment since the maximum deviation of 1.5pp is absolute rather than relative. In the current period of relatively high euro area inflation and much larger than usual differences in inflation rates between the countries with lowest and highest rates, this requirement would imply that inflation in Bulgaria must currently be around 50% below the average euro area inflation.

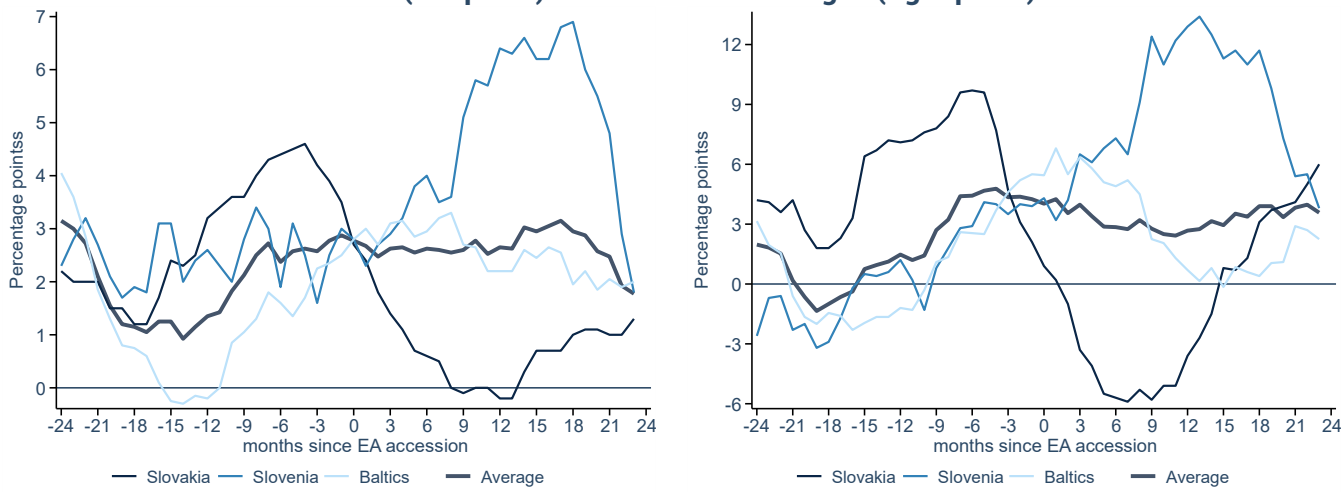
Another aspect of the EA accession is the banking union or SSM, which Bulgaria joined through close cooperation with the ECB in October 2020. The ECB thus has already full supervisory power over all banks and directly supervises 5 of Bulgaria's banks.[3] Once Bulgaria joins the euro, it will become a full member of the SSM and thus join in decision-making, although the supervision itself will remain unchanged.

Effects on inflation

The effect of euro area accession on inflation is by far the main concern of much of the public in Bulgaria. The consensus in academic research regarding the inflation effects at the time of the creation of the euro area is that the euro's introduction largely did not lead to aggregate inflation effects.[4] On the other hand, for some product groups, such as services (e.g. restaurants) there were one-off increases in inflation. Finally, there was a substantial gap between inflation and inflation *perceptions* at the time of the euro introduction. For example, in

[1] Alpha Research (2022).
[2] https://economy-finance.ec.europa.eu/euro/enlargement-euro-area/convergence-criteria-joining_en.
[3] This close cooperation has been judged to work well according to Darvas and Martin (2022).
[4] Strum, et al. (2009).

1. HICP annual inflation rate pre and post EA accession by country and average for overall (left panel) and food and beverages (right panel)

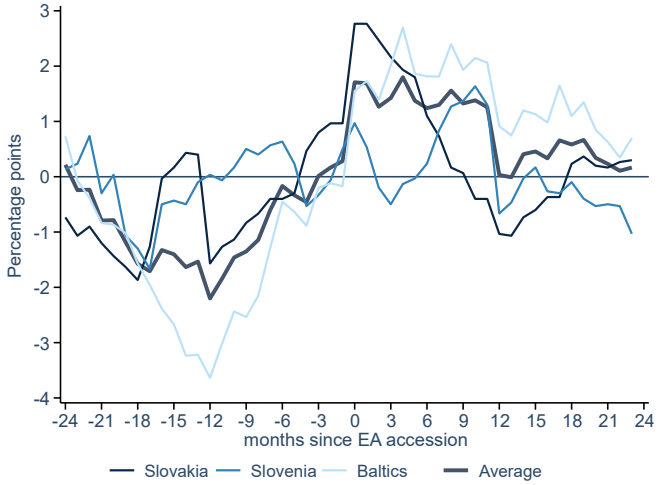


Source: Eurostat and own calculations. ``Baltics'' denotes the average for Estonia, Latvia and Lithuania.

Germany, perceived inflation was 4 times higher than official rate.[5]

We examine how inflation in the five Eastern European countries that adopted the Euro, the three Baltic States, Slovenia, and Slovakia, evolved around the introduction of the euro. Figure 1 shows the dynamics of the annual inflation rate pre- and post-EA accession for these countries individually and on average, for overall inflation (left panel) as well as for food and beverages (right panel).

2. HICP annual inflation rate for services pre- and post- EA accession by country and average, relative to a group of Eastern European non-EA countries (Poland, Hungary and Czech Republic)



Source: Eurostat and own calculations.

The figure shows that inflation in the months before and after the adoption of the Euro is relatively stable in these countries.[6]

In contrast, the analysis of the annual inflation in services paints a slightly different picture. This is particularly salient when considering the inflation effect in services relative to the group of non-EA countries, as shown in Figure 2. Specifically, there is a one-off relative increase in services inflation precisely in the accession month. This finding is consistent with the effects observed for restaurants during the creation of the Euro, as well as with the recent experience of Croatia.[7]

One reason why there is a price increase in services is that prices tend to change less frequently for services than for goods, for example. However, euro adoption requires new price tags (e.g. new restaurant menus). Therefore, this might also be the moment when prices are adjusted. Moreover, some price rises might even be delayed to wait until the necessary price tag changes.

Therefore, our analysis for the experience of Eastern European countries confirms to a great extent the conclusions of the academic literature

[5] Brachinger (2006).
[6] An additional analysis of inflation dynamics for these countries relative to a group of non-EA Eastern European countries which include Poland, Hungary and the Czech Republic shows a similar pattern.
[7] Hobijn, et al. (2006) and Falagiarda, et al. (2023).

that studies the inflationary effects at the time of the creation of the single currency. The aggregate inflation effect is small, while in services, slightly higher inflation can be expected for the first year after accession.

Effects on International trade

The interest in the effects of currency unions, and the Eurozone in particular, on international trade has been significant and long-lasting, both in the academic literature and from a policy perspective. While there is a consensus that the effects of currency unions and the Euro on trade are positive, there does not seem to be an agreement on how large these effects actually are, and what exactly are the transmission channels through which the Euro may impact trade.

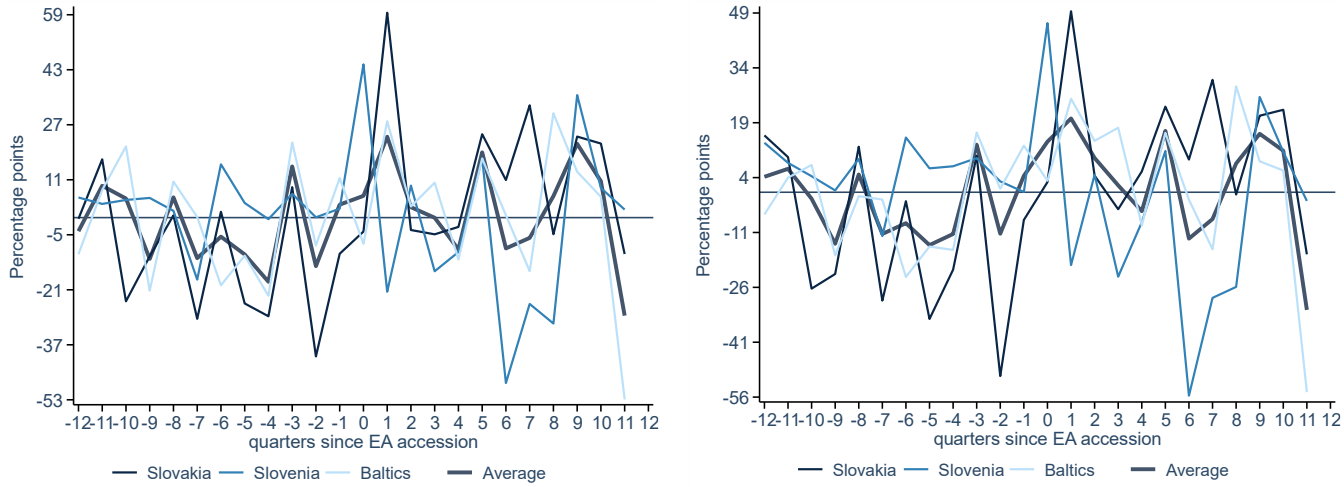
So, how could adopting a common currency lead to more trade? There are several channels, including (i) eliminating bilateral exchange rate volatility with other Eurozone members; (ii) decreasing exchange rate volatility with non-member countries; (iii) decreasing and eliminating uncertainty and risk; (iv) decreasing transaction costs; (v) deepening economic and political ties among members of the Eurozone; and (vi) improving trust among the member countries but also trust and reputation with non-member countries. While, due to the currency board in Bulgaria, the impact of some of the above-mentioned factors, e.g., eliminating bilateral exchange rate volatility, may have already been exhausted and such factors may no longer be relevant in the case of Bulgaria, other factors, e.g., decreasing transaction costs, improving trust and reputation with Eurozone members but also non-member countries, may still be important.

Early empirical analysis of the impact of currency unions on trade delivered suspiciously large effects.[8] Motivated by these puzzling findings, subsequent studies, many of which specifically focused on the effects of the Euro, aimed to overturn, or at least understand and explain, those huge currency union effects. The use of better econometric techniques and improved datasets led to smaller estimates of the currency union effects on bilateral trade flows, e.g., between 5 and 30 percent. The main conclusions from recent analysis of the effects of the Eurozone on international trade are that they are positive but relatively small, e.g., between 5 to 15 percent,[9] and that they can be very heterogeneous across the members of the currency union, over time, and across sectors and types of goods traded. Some studies have also pointed out to the benefits of the Euro for trade of intermediate goods, a channel that is particularly important in the presence of a strong production value chain in Europe.[10]

Capitalizing on the latest empirical methods from the academic literature and a recent and comprehensive dataset, we obtain disaggregated estimates of the effects of the Euro across 170 industries, which we grouped into 4 broad sectors, including Agriculture, Mining and Energy, Manufacturing, and Services.[11] Consistent with the current findings from the literature, our estimates reveal that the impact of the Euro has been relatively small (10-20 percent), but positive and statistically significant, and particularly pronounced in the Agricultural and Services sectors (e.g., tourism). The natural explanation for the former is related to the common agricultural policy of the EU, while the latter can be explained with the localized nature of services consumption.

[8] For example, Rose (2001) estimates that, all else equal, currency unions have led to an increase in the international trade among their members by the staggering 300 percent.
[9] Baldwin (2006), Gunnella et al. (2021).
[10] Gunnella et al. (2021).
[11] On the methods front, we relied on Larch et al. (2019) and Yotov et al. (2016), and we utilized the International Trade and Production Database for Estimation of the US International Trade Commission, which was developed by Borchert et al. (2021).

3. Gross capital inflows (left panel) and outflows (right panel) as a ratio of GDP pre- and post-EA accession by country and average relative to a group of Eastern European non-EA countries (Poland, Hungary and Czech Republic)



Source: IMF and own calculations. ``Baltics'' denotes the average for Estonia, Latvia and Lithuania.

Based on estimates from the existing literature, our own analysis, and the comparative advantages of Bulgaria, we expect that the adoption of the Euro would stimulate Bulgaria's international trade, especially in Agriculture and Services, but also in certain manufacturing sectors, where Bulgaria has already established positions in the production value chains of the Single Market.

Effects on capital flows

An increase in gross capital flows, reflecting when either domestic residents buy foreign assets (gross outflows) or when foreigners lend to domestic residents (gross inflows), indicates greater financial integration. This is generally acknowledged to be beneficial for a nation's economic development. Inflows provide needed capital for domestic investment to encourage economic growth, especially important for emerging market countries. Increasing outflows indicate for domestic residents a widening range of financial instruments, providing diversification benefits. Previous research has found benefits to Eastern European countries.[12]

We examine the capital flows of Baltic States, Slovenia, and Slovakia (which have previously joined the Eurozone) for 12 quarters pre- and post-accession. We compare the flows to another set of Eastern European countries which have not yet chosen to join the Euro Area (Poland, Hungary, and the Czech Republic).

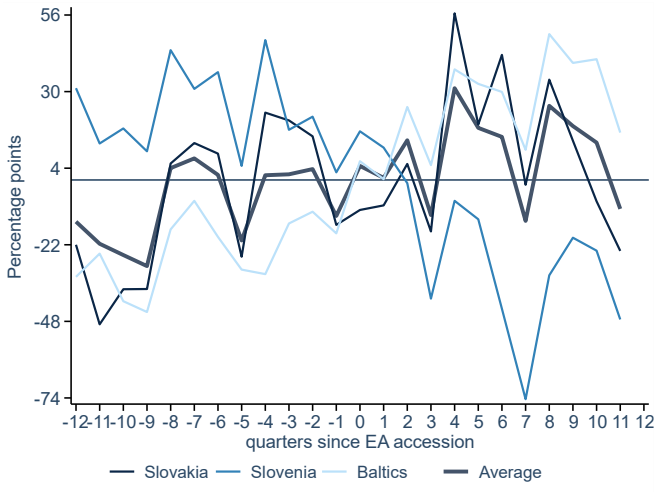
We find in general that both inflows and outflows continue at a positive rate during the observation period. Relative to the Eastern European nations choosing to remain outside the Euro Area, there is a short two-quarter increase in capital flows at the date of accession. In other periods, the nations accessing the euro had flows relatively similar to those remaining outside.[13]

In short, we find that financial integration continues in both types of nations as indicated by generally positive gross capital inflows and outflows. This is no surprise as: "It is well documented that gross debt and equity flows between EMU members increased dramatically as a result of both the single currency and regulatory harmonization within the European Union."[14]

[12] For example, Lane and Milesi-Ferretti (2007) remark that *"The large current account deficits of the last decade have plausibly facilitated a more rapid convergence rate in output and living standards than would otherwise have been possible."*
[13] This differs from recent research which finds nations in the ERM II fixed exchange rate process having greater gross capital flows (Dorrucci, et al., 2020).
[14] Hale and Obstfeld (2016)

Thus, we foresee Bulgaria experiencing a small immediate rise in gross in- and out- flows which will moderate in a couple quarters after accession to the Eurozone. Continuing flows will augment Bulgaria's financial integration, aided by additional steps in trade integration and banking union. However, gross flows are frequently described as volatile,[15] so there is a risk of credit booms and sudden stops of capital inflows. A given capital flow may be more or less reversible based on which of its components is predominant. Direct investment is least likely to be reversible, while "other investment" (i.e. bank lending) is often interest sensitive and may cause more issues, as we additionally discuss in our analysis of interest rate effects below. At any rate, problems due to capital flows are likely to be mitigated by sovereign budget conservatism, the use of macro-prudential policy tools, such as the countercyclical capital buffer, as well as the fact that Bulgaria has already joined the ECB's common banking supervision.

4. Net foreign asset position-to-GDP pre- and post EA accession by country and average relative to a group of Eastern European non-EA countries (Poland, Hungary, Czech Republic)



Source: IMF and own calculations.

Often researchers use the IMF data metric "net foreign assets" to measure financial integration. This statistic shows the value of foreign assets domestic residents own net of the nation's residents' debts to foreigners. We have examined this measure for Eastern European Eurozone accessor nations relative to those Eastern European countries choosing to remain outside. Figure 4 shows that on average, the Eastern European accessing nations have enjoyed higher net foreign asset positions: the trend is for them to owe less to foreigners relative to the assets they own abroad (especially after the observation period shown on the above chart).

Effects on interest rates and debt

The long-term interest rates in a country depend on three factors: 1) expected inflation; 2) the "natural'' or Wicksellian real interest rate, which is determined by fundamentals such potential output growth and population growth;[16] and 3) default risk and the associated risk premium. Differences in these three factors across countries combined with exchange rate risk determine the interest rate spread between two countries.

Combined with the other Maastricht convergence criteria, a low interest rate spread relative to the three best performing member states in terms of inflation is, therefore, meant to ensure that the ECB's monetary policy stance would be appropriate for the candidate country, so that, on average, the country would face a real interest rate in line with its "natural" rate of interest. In that case the ECB's monetary policy would be neither too expansionary nor too contractionary upon EA accession.

In principle, EA accession may reduce interest rate spreads by removing the exchange rate risk, as well as by affecting each of the three factors described above. Nevertheless, for a country in a currency board arrangement and with low level of public debt such as Bulgaria, the effects through exchange rate risk but also through the other channels are *a priori* also likely limited.

[15] See for example Forbes and Warnock (2012), Broner et al (2013) or Calderon and Kubota (2019)
[16] Lane (2019).

In terms of the experiences of the 5 Eastern European countries that have joined the Euro Area, Figure 5 plots the dynamics of the long-term interest rate spread relative to German long-term interest rates for the different countries (with the Baltic countries combined in one group), as well as on average. The Figure shows that interest rate spreads post-accession tend to follow the pre-accession negative trend with a limited one time effect in the accession month, particularly for the Baltic countries. On average, the spread stabilizes to around 1 percent approximately one year after accession. Comparing the interest rate spreads for these Eastern European countries around EA accession, relative to a group of non-EA Eastern European countries (Poland, Hungary, and the Czech Republic), there is a negative effect in the accession month of around half a percentage point on average, though not for all countries.

In comparison, the average spread for Bulgaria during the period 2018-2022 has been only around 0.6 percent. This is likely an effect of the long-standing and credible currency board. Consequently, the spread for Bulgaria is already relatively low and potential additional effects after EA accession are likely limited.

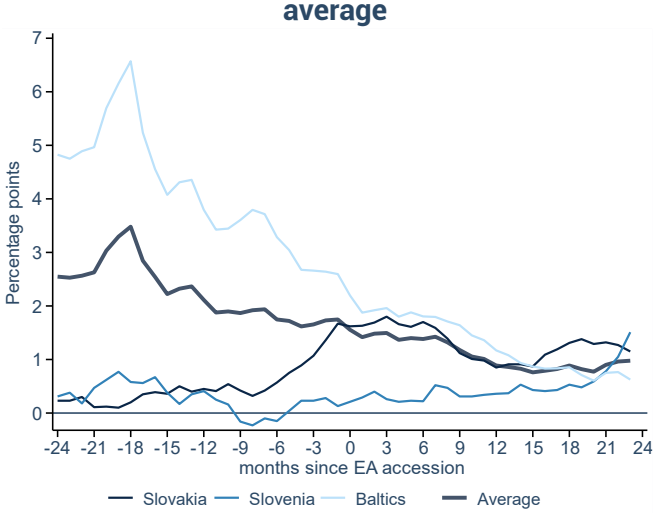
The likely limited effects of EA accession on interest rate spreads for Bulgaria limit the potential benefits in terms of lower borrowing costs but also limit substantially the risk of a domestic credit boom fueled by capital inflows or a reduction in fiscal discipline. These risks are often attributed to insufficient "real convergence" of a candidate country based on the experience of Southern European countries after the creation of the Euro.[17]

To additionally assess the risk to fiscal discipline, in Figure 6 we plot the dynamics of public debt-to-GDP for the 5 Eastern European accession countries relative to a group of Eastern European non-EA countries. The figure shows a limited *negative* relative effect of EA accession on public debt-to-GDP even 3 years after EA accession.

A related risk for the case of Bulgaria is of a domestically funded credit boom due to the need to move to a minimum reserve ratio on deposits of 1% upon EA accession. Currently, the required minimum reserves on deposits that banks have to maintain with the Bulgarian National Bank is 12% at 0% interest. The risk that is sometimes put forward is, therefore, that if banks are only required to maintain a 1% minimum reserve ratio rather than 12%, they would instead lend the difference in reserves out as domestic loans, leading to a one-off credit and inflation boom.

Nevertheless, for this transition to a lower minimum reserve requirement to constitute a substantial risk of a credit boom, there are two conditions that must be fulfilled. First, it must be the case that banks are heavily constrained in their lending, which would be reflected in the prevailing lending rates. Second, banks must have a low opportunity cost of either leaving excess reserves on deposit with the ECB, where the current interest rate is 3.5%, or lending these excess reserves abroad. According to interest rate statistics data published by the BNB,[18] in recent months the

5. Interest rate spreads over German government debt pre- and post-EA accession by country and average



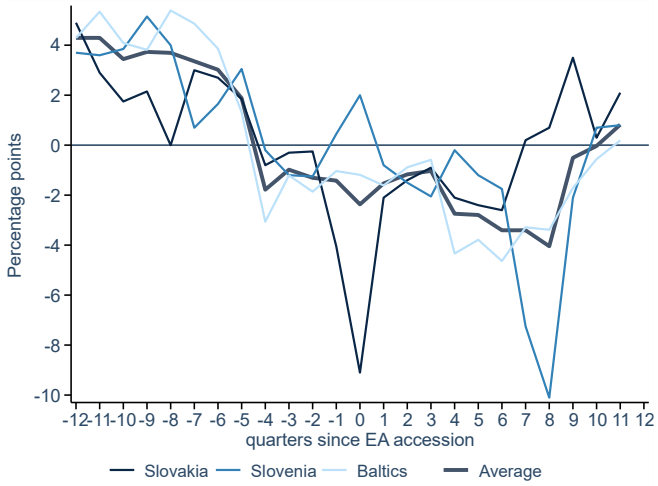
Source: Eurostat and own calculations.

[17] Diaz del Hoyo, et al. (2017) provide a thorough treatment of the ``real'' vs. ``nominal'' convergence debate.
[18] https://www.bnb.bg/Statistics/StMonetaryInterestRate/StInterestRate/StIRIROnDeposits/StIRIROnDepositsHouseholdsAndNPISHs/index.htm

interest rate on new mortgage loans in leva is *lower* than the interest rate on euro-denominated loans and is comparable to the interest rate paid at the deposit facility of the ECB.

Based on this observation, it seems unlikely that the conditions are in place for a domestically funded credit boom upon EA accession. Instead, it is more likely that upon EA accession in Bulgaria banks would either keep the excess reserves with the ECB or seek better investment opportunities abroad including repaying loans to parent banks. What is clear is that the ability to obtain a higher return than the current interest rate of 0% paid by the BNB would increase the profitability of the banking system.

6. Public debt-to-GDP ratio pre- and post-EA accession by country and average relative to a group of non-EA Eastern European countries (Poland, Hungary, and Czech Republic)



Source: Eurostat and own calculations.

Finally, it is important to note that upon EA accession, Bulgaria's treasury bonds would be accepted as collateral at the ECB. This would improve the liquidity of the Bulgarian government bond market, which would in turn improve the ability of the Bulgarian Ministry of Finances to manage the liquidity of public finances. For example, there will be reduced need for self-insurance in the form of holding large fiscal reserves or for withholding, which would improve the business climate.

Conclusions

Overall, euro area accession is unlikely to constitute a major paradigm shift for Bulgaria. Already now, Bulgaria's currency board is seen as credible and interest rate differences to the euro area are small. Moreover, the Bulgarian banking system is already supervised by the ECB's SSM. On the upside, membership in the euro area would provide Bulgaria with some benefits such as easier liquidity management of Bulgaria's public finances and reduced transaction costs for trade, particularly in agriculture, services, and sectors where Bulgaria is part of production value chains within the EA. Moreover, Bulgaria would become part of the formal decision-making process on monetary policy and banking supervision. Euro area accession would be the last step contributing to further economic convergence. It would send a positive political signal about Bulgaria's reliability.

Having said that, Bulgarian policy makers need to focus on a number of policy priorities to maximize the benefits of euro area accession. First, in view of the consistently documented one-off increase in services inflation and in *perceptions of inflation*, it is important for Bulgaria to follow the experience with the wide range of policies for adapting society to the new currency of other countries, and specifically those of Eastern Europe. This includes explanatory campaigns, an obligation to present prices in both currencies, and further transparency measures to avoid that companies unduly use the euro introduction for price rises.

Second, accession to the eurozone will have only a slight temporary additional impact on financial integration. For Bulgaria, the entrance into the European Union and the ERM II process have already both strongly contributed to integration. We foresee this trend continuing when Bulgaria joins the eurozone, aided by the banking union and the increasing trade integration trend. Nevertheless, the risk of volatile capital flows and credit booms, although limited, needs to be monitored. Macroprudential policies, such as the countercyclical bank capital buffer are among

measures that could be utilized should this risk becomes elevated.

Bulgaria is running conservative fiscal policies that have contributed to the credibility of the currency board. While the accession to the euro area will have limited impact on interest rates, it is important that policy makers continue to ensure appropriate fiscal policies in line with the EU treaties to avoid credibility risks.

A review of the quality of public spending towards investments could further enhance Bulgaria's growth potential. Decentralizing spending further to the municipal level might improve the quality of spending.

Overall, joining the euro area is the culmination of a multi-year process of Bulgaria's rapprochement with the other euro area countries and will further contribute to the political and economic convergence of Bulgaria.

The Council for Economic Analyses provides independent analyses and opinions on specific issues concerning the state of the Bulgarian economy, the challenges and risks facing it, as well as possible policies and recommendations to address them.

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