INTERNATIONAL MONETARY FUND

Impact of International Shocks on North Macedonia and the Western Balkans

Simona Kovachevska Stefanova, Ming Ma, Adina Popescu and Faton Sulejmani

SIP/2025/065

IMF Selected Issues Papers are prepared by IMF staff as background documentation for periodic consultations with member countries. It is based on the information available at the time it was completed on April 8, 2025. This paper is also published separately as IMF Country Report No 25/102.

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European Department

Impact of International Shocks on North Macedonia and the Western Balkans

Prepared by Ma Ming, Simona Kovachevska Stefanova, Adina Popescu and Faton Sulejmani

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May 2025

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ABSTRACT: The Western Balkan economies have faced numerous external shocks in recent years, while simultaneously becoming more integrated with the European Union. This paper employs a global vector autoregressive (GVAR) model to estimate the spillovers of real, financial, monetary, and global commodity price shocks across all countries in the region. The findings reveal that real shocks from the euro area significantly impact economic activity and trade. Financial shocks' effects are moderated by the level of financial depth and integration. Both conventional and unconventional monetary policy shocks influence economic activity and inflation, depending on the degree of monetary autonomy. Additionally, global energy commodity price shocks are identified as major drivers of inflation. North Macedonia in particular experiences the most substantial spillovers through industrial activity and trade, due to its high integration into European global value chains.

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SELECTED ISSUES PAPERS

Impact of International Shocks on North Macedonia and the Western Balkans

Republic of North Macedonia

Prepared by Ma Ming, Simona Kovachevska Stefanova, Adina Popescu and Faton Sulejmani [1]

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INTERNATIONAL MONETARY FUND

REPUBLIC OF NORTH MACEDONIA

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Approved By
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CONTENTS

IMPACT OF INTERNATIONAL SHOCKS ON NORTH MACEDONIA AND THE WESTERN BALKANS[1]

A. Introduction

1. The Western Balkan economies have been buffeted by a series of external shocks in recent years, with varying intensities across countries. The COVID-19 pandemic disrupted supply chains (Jovanović et al., 2024), dampened external demand, and exposed vulnerabilities in key sectors, including the export-driven industries of North Macedonia. Post-pandemic, surging inflation compounded these challenges, as rising global energy and food prices rippled through the region. North Macedonia, with its open economy and reliance on key trading partners, was particularly affected by these overlapping crises. Understanding the diverse impacts of such shocks is essential for tailoring policy responses to bolster resilience in these economies.

1. Economic spillovers to the Western Balkans have been identified through multiple channels, but the literature remains limited. Gouveia (2014) links business cycle synchronization with the euro area to trade integration. Inflation spillovers are found to be significant for countries with strong trade ties and flexible exchange rates (Ramadani & Pandiloski, 2018). Euro area (EA) monetary policy shocks, both conventional and unconventional, transmit quickly in unofficially euroized economies, constraining monetary independence (Moder, 2021). EA shocks also impact sovereign debt markets, triggering currency depreciations and output declines (Engler et al., 2024). Fixed exchange rates amplify negative output spillovers from ECB tightening, whereas inflation-targeting regimes with floating currencies mitigate them. Eurosystem balance sheet expansions boost output in some countries, with price spillovers driven by import prices and exports playing a larger role than financial linkages (Moder, 2017).

2. Few studies on North Macedonia have highlighted the trade, financial and monetary policy channels. Melecky (2010) finds that foreign shocks are key drivers of variations in output, inflation, interest rates, and real exchange rates in North Macedonia. Unevska Andonova and Petkovska (2011) identify trade (export demand) and financial (FDI, remittances) channels as the primary mechanisms for spillovers. Cabezon and Kovachevska Stefanova (2024) find that structural euroization weakens domestic monetary transmission and amplifies the effects of ECB policies on domestic interest rates.

3. The Western Balkans' growing integration with the EU during the accession phase is expected to intensify spillovers. EU accession efforts have strengthened institutional frameworks and deepened trade and financial linkages, driving increased business cycle synchronization with the euro area, while also increasing resilience and growth. Regional initiatives like the Central European Free Trade Agreement (CEFTA), Open Balkan, and the Berlin Process were designed to foster intra-regional trade and collaboration. Additionally, the EU's Growth Plan for the Western Balkans' growth

[1] Prepared By Simona Kovachevska Stefanova, Ming Ma, Adina Popescu, Faton Sulejmani.

plan adopted in 2023 aims to further integrate the Western Balkan partners into the EU's single market, advance regional economic cooperation, deepen EU-related reforms and increase pre-accession funding in view of accelerating socio-economic convergence. These integration efforts may on the one hand amplify the transmission of shocks from the EU but on the other hand offer opportunities for economic transformation, which may increase resilience to various types of international shocks. Empirical analysis of these spillovers is crucial to disentangle their net effects, assess the relative strength of transmission channels, and inform policies that maximize the benefits of integration while mitigating potential risks.

B. Western Balkan Integration with the Euro Area: Descriptive Evidence

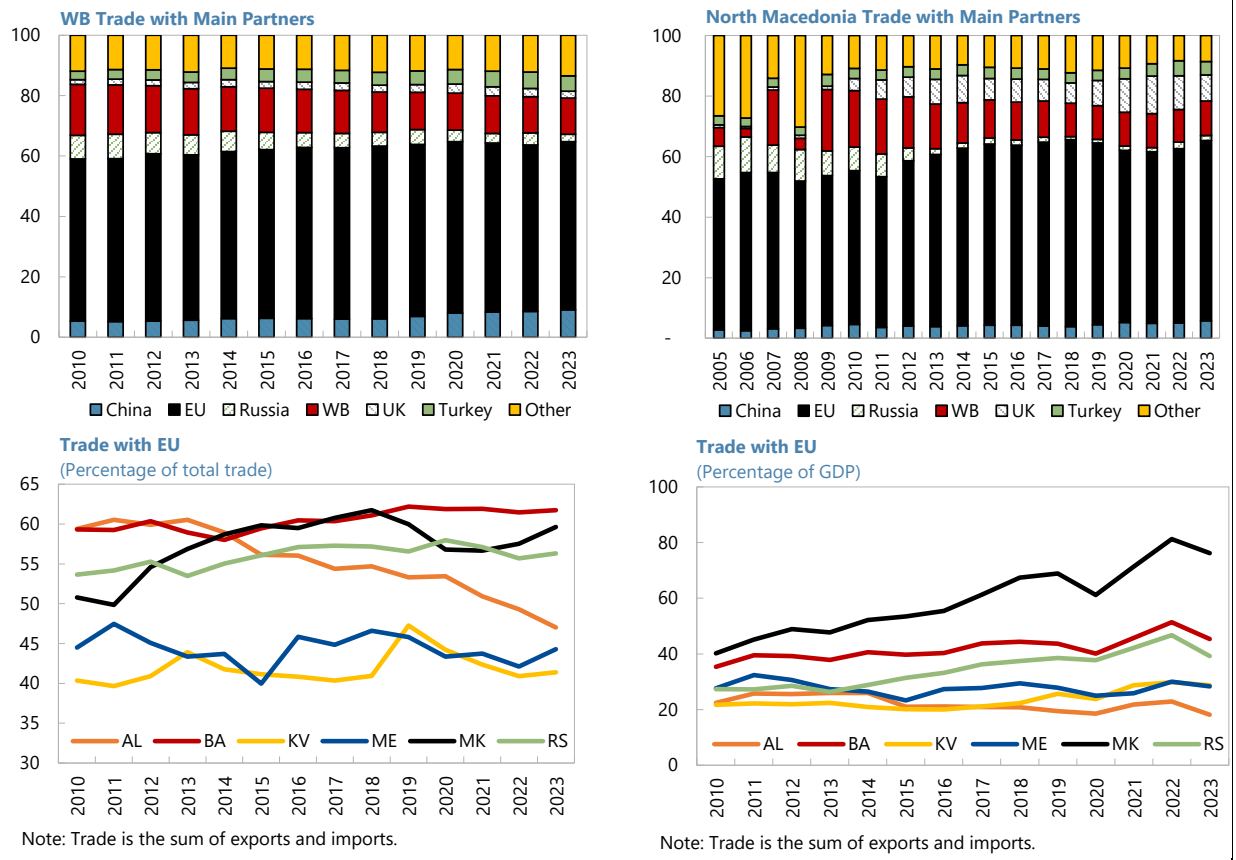
This section presents descriptive evidence for the main potential channels for spillovers from the EU to North Macedonia and the other Western Balkan countries: the trade channel, the remittances channel, and the financial and monetary policy channel. The evidence indicates that Western Balkan countries exhibit robust trade and financial ties with the EU. Along a number of indicators, North Macedonia stands our as one of the most integrated countries with the EU. This robust interconnectedness suggests potentially substantial economic spillovers from the European Union to the Western Balkan countries.

The Trade Channel

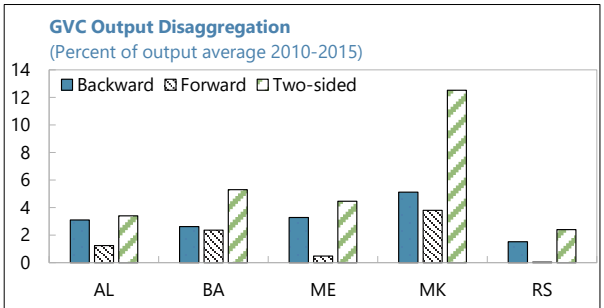
4. The European Union is the Western Balkan's primary trade partner, accounting for more than half of total trade. On average, trade with the EU accounts for around 54 percent of total trade in the Western Balkans – with North Macedonia more integrated that others at over 60 percent (Figure 1). Notably, North Macedonia also stands out as its EU trade amounted for over 76 percent of GDP in 2023, nearly double the regional average of around 40 percent (Figure 1). Western Balkan countries exhibit relatively similar trade patterns concerning their partners and the composition of traded goods. The dominant trade partners for the region continue to be Germany and Italy, which accounted for approximately 26 and 14 percent, respectively, of the total trade in 2023.

5. Despite efforts at regional integration, intra-Western Balkan trade has lagged behind. In pursuit of EU accession, Western Balkan countries are striving to align with EU acquis to strengthen trade relations and participate in regional initiatives. The Stabilization and Association Agreements (SAA), the Central European Free Trade Agreement (CEFTA), and the Open Balkan initiative aim to promote trade in goods and services among member countries, removing trade barriers while facilitating integration in the EU by aligning policies and regulations with EU standards. Yet trade among Western Balkan countries amounts to only about 12 percent of the total trade in the region and the share of intra-Western Balkan trade in total trade has seen a decline of around 2.8 p.p. (Figure 1).

Figure 1. Panel on Trade Linkages



Sources: Eurostat and IMF staff calculations.



Sources: World Bank, and World Integrated Trade Solution (WITS).
Notes: Two-sided GVC participation refers to a country's involvement in Global Value Chains (GVCs) both as a user of foreign inputs for its exports (Backward) and as a supplier of inputs for other countries' exports (Forward).

6. The Western Balkan countries have deepened their integration into global value chains (GVCs), particularly with the European Union. The region benefits from geographic proximity, competitive labor costs, substantial FDI inflows, and the presence of multinationals which have facilitated the integration of the region into European production networks (Ilahi and others, 2019). Western Balkans are predominantly integrated into GVCs through intermediate goods trade, primarily in manufacturing sectors such as automotive, machinery, electrical equipment, and textiles. North Macedonia and Serbia have become key suppliers in European manufacturing networks, particularly in automotive and electrical components. Based on the latest data available, North Macedonia stands out with the highest GVC participation as a percent of gross exports compared with its Western Balkan peers, largely due to its integration into German automative manufacturing. Albania and Bosnia and Herzegovina are more integrated in lower-value-added segments, such as textiles and basic manufacturing, while Kosovo's participation remains relatively limited due to structural constraints (Ilahi and others, 2019). Further progress towards EU integration

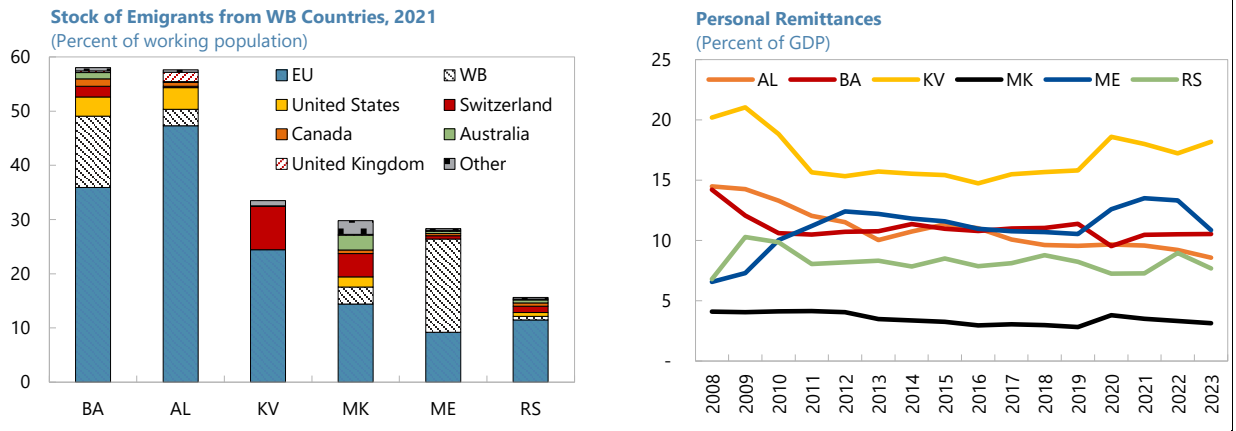
is expected to further strengthen participation in GVCs, as Western Balkan economies address infrastructure deficits, technology gaps, skills and labor mismatches and regulatory barriers to allow them to move up the value chains.

Remittances Channel

7. Emigration has been a defining socio-economic challenge for the Western Balkans, driven primarily by economic factors. Despite strong trade and investment ties with the EU, Western Balkan countries also see significant emigration to EU member states (with Germany, Italy, Slovenia, and Austria the most important destinations). While there are various policy-related factors, including visa liberalization and plans to enhance mobility for Western Balkan citizens prior to EU accession, the primary incentives for emigration are largely economic (Ghodsi et al., 2024). High unemployment, particularly among youth, limited career prospects, and wage disparities with the EU have fueled sustained outflows of skilled and unskilled labor. The brain drain is particularly concerning, further weakening human capital development in the region.

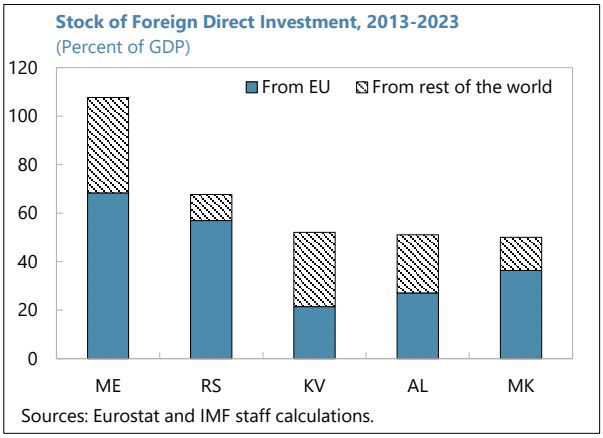
8. Remittances have become an important source of household income and stable BOP inflows. Migration has led to remittances accounting for a substantial share of GDP in many Western Balkan countries. Kosovo stands out with the highest contribution from remittances of around 17 percent of GDP. However, there are challenges related to data accuracy and methodology, such as the transfer of remittances in cash versus through formal channels (Figure 2). For example, figures for North Macedonia may significantly underestimate these inflows, with Central Bank calculations suggesting they could be three times higher than reported, around 14 percent (Miteski, M., 2024). While remittances provide a crucial buffer for household consumption and financial stability, dependence on them may also heighten vulnerabilities to economic downturns in the EU.

Figure 2. Panel on Migration and Remittances



Sources: World Bank and IMF staff calculations.

Financial Channels

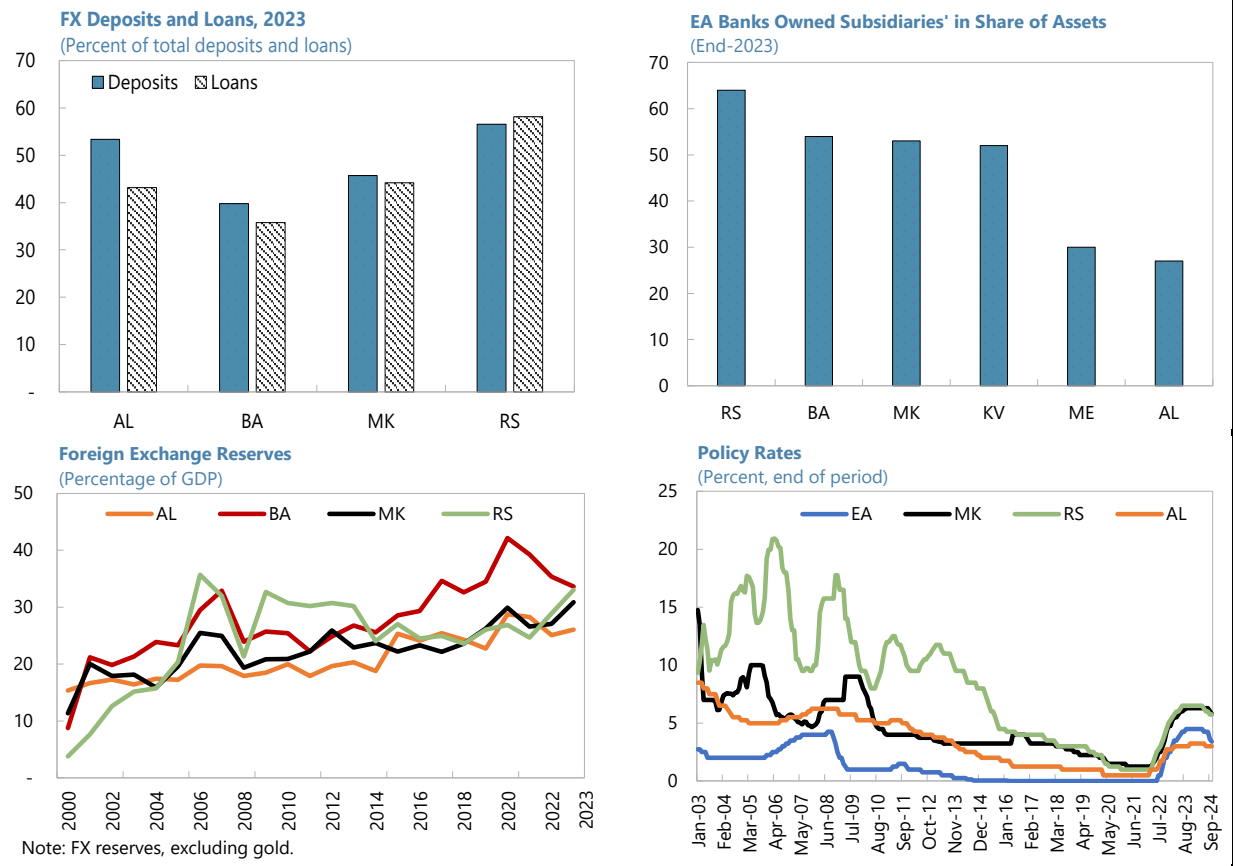


9. The European Union is the dominant source of foreign direct investment (FDI) in the Western Balkans, accounting for the majority of inflows into the region. As of 2023, EU-based companies accounted for 58 percent of the FDI stock in the Western Balkans (Council of the European Union, 2024). North Macedonia, in particular, has strong FDI linkages with the EU, with around 67 percent of its FDI originating from EU countries, including approximately 9 percent from Germany. The country's export performance has been bolstered by a targeted strategy to attract export-oriented FDI, particularly in the automotive industry, as well as in chemicals, machinery, electronics, and transportation (World Bank, 2022). FDI can have significant macroeconomic spillovers in the medium to long-term, while in the short term, they may dampen the transmission of more volatile financing sources.

10. Financial exposures in Western Balkans are significant due to the high levels of euroization. The preference for foreign currency deposits and loans stems from a lack of trust in the stability of the local currency and expectations of depreciation, both driven by past economic crises. Euro-denominated deposits and loans range from between 36 percent to about 58 percent in the Western Balkans, reflecting the elevated use of the euro in local financial activities (Figure 3). Despite North Macedonia's denarization strategy to promote the denar by building trust in the currency, promoting savings and loans in denars through regulatory and macroprudential measures, around 40 percent of both deposits and loans occur in foreign currency.

11. Foreign bank ownership of local banks is high. Foreign bank ownership ranges between 65 percent to 84 percent of the banking sector in Western Balkan countries, with an average of 47 percent of this ownership coming from the EA. The highest EA ownership of the banking sector is in Serbia at 64 percent, followed by Bosnia and Herzegovina at 54 percent, North Macedonia at 53 percent and Kosovo at 52 percent (Figure 3). This foreign presence can provide access to EA capital and liquidity, increasing spillovers through financial channels. For example, Morder (2021) finds significant interest rate pass-through of euro area monetary policy to retail rates outside the euro area linked the degree of financial euroization.

Figure 3. Panel on Financial Linkages



Note: FX reserves, excluding gold.

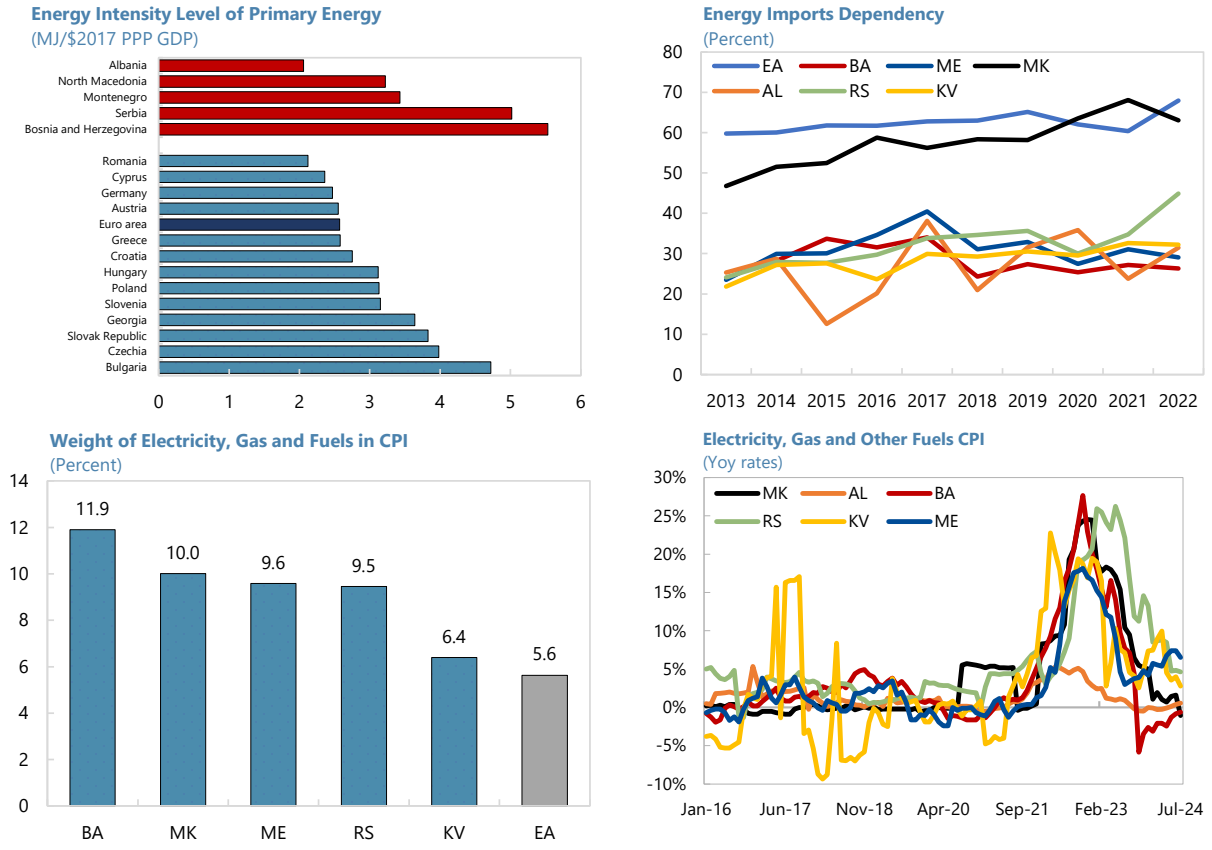
Sources: EcDatabase, FitchConnect, Haver Analytics, IMF Financial Data Portal, and IMF staff calculations.

12. Monetary and exchange rate policies in the Western Balkans range from full euroization to inflation targeting and floating exchange rates. Kosovo and Montenegro have adopted the euro as exclusive legal tender, effectively importing the ECB's monetary policy. While full euroization provides monetary credibility and eliminates exchange rate risk, it limits the ability to respond to asymmetric shocks. Bosnia and Herzegovina operates a currency board, pegging its currency to the euro, ensuring price stability but foregoing independent monetary policy. North Macedonia maintains a stabilized arrangement with de facto peg to the euro, and has price stability as its primary objective, with some limited scope to deviate from the ECB's rates cycle to implement countercyclical policy. Albania and Serbia use inflation-targeting frameworks with managed (Serbia) and free (Albania) floating exchange rates, allowing more flexibility to adjust interest rates and respond to shocks. Even where flexibility exists, all Western Balkan countries have closely followed the ECB's monetary policy, in particular more recently (Figure 3).

13. The degree of monetary autonomy in Western Balkan countries is likely to impact the intensity of external spillovers. Countries with flexible exchange rate regimes, such as Albania and Serbia, can absorb some of the impacts of external shocks, which can allow monetary policy more autonomy to stabilize inflation and output. In contrast, economies with more rigid exchange rate arrangements, such as Bosnia and Herzegovina's currency board or North Macedonia's de facto peg,

have limited room for exchange rate adjustments, increasing reliance on internal mechanisms such as such as fiscal discipline, structural reforms or wage flexibility.

Figure 4. Panel on the Energy Sector



Sources: World Bank's Development Indicators, Eurostat, Haver Analytics, and National SSOs.

14. Western Balkan countries have been increasing their foreign exchange reserves to increase credibility and resilience to shocks. The Western Balkan countries with scope for independent monetary policy have seen an increase in FX reserves (Figure 2), which can serve as a buffer to stabilize their local currencies and shield against external shocks, strengthen trade and investment ties with the EU, and utilize high Euroization to manage exchange rate risks and maintain investor confidence. While these reserves can help central banks maintain external stability and minimize spillovers of external shocks, they can lead to increased spillovers to the central bank's balance sheet. Indeed, the need to hold a sizable portion of foreign exchange (FX) reserves in euro has made reserve management increasingly challenging, and as times costly, such as the a negative interest rate environment (della Valle, 2017).

The Energy Commodities Price Channel

15. Western Balkans countries are vulnerable to energy commodity price shocks, while largely relying on outdated and inefficient energy sectors. Although on a declining trend, the energy intensity of WB economies still exceeds the EA average (Figure 4). This is to a large extent

attributable to the significant reliance of electricity generation on outdated, emission intensive fossil-fuel based generation. Albania stands out as an exception, relying almost entirely on hydropower, which contributes to a lower energy intensity. The significant reliance on aging and inefficient electricity generation, and the elevated energy intensity, heightens vulnerability to global supply shocks and limits the flexibility in adjustment to such shocks.

16. Overall, energy imports dependence in the Western Balkans is lower than in the euro area, with North Macedonia being the notable exception. Most countries in the region generate a higher proportion of their energy domestically, which helps reduce their vulnerability to global energy shocks. North Macedonia, however, relies on energy imports for over 60 percent of its needs. On the other hand, energy constitutes a significantly larger portion of the overall CPI in all the Western Balkans, nearly double that of the euro area, with North Macedonia at 10 percent. This combination of high energy import dependency and the substantial share of energy prices in the CPI accounts for North Macedonia experiencing the region's largest inflationary spike of 20 percent during the recent commodity-driven inflation surge (Figure 4).

17. Government interventions and price regulation in the Western Balkans can mitigate impact of energy price shocks but may also increase their persistence. Administered prices, particularly through offered subsidized prices from state-owned energy companies that dominate the market, can cushion the inflationary impact of global energy shocks. However, the presence of regulated tariffs, which are sometimes heavily subsidized—such as those for household electricity in North Macedonia—and are often adjusted slowly, can increase the persistence of inflation, as observed following the recent energy price shock.

C. Estimations Using a Bayesian GVAR Model

This section uses a quantitative model to estimate spillovers from real, financial, monetary, and global commodity price shocks for all countries in the region. The results indicate that real shocks from the euro area significantly affect economic activity, while the impact of financial shocks is influenced by the level of financial depth and integration. Monetary policy shocks also have an effect contingent on the degree of monetary autonomy, and global energy commodity price shocks emerge as key drivers of inflation.

18. We employ a Bayesian Global Vector Autoregressive (BGVAR) model to analyze real, financial, monetary and global commodity price spillovers. The GVAR approach, building on Pesaran et al. (2004), addresses overfitting and computational challenges in large cross-country VARs. Bayesian estimation (e.g., Böck, Feldkircher, and Huber, 2020) enables handling shorter estimation samples, mitigating data limitations in Western Balkans countries.

Table 1. North Macedonia: Data Description

Variable	*Transformations, units*
Industrial production (Manufacturing)	SWDA, in logarithms.
(Harmonized) Consumer price index	SWDA, in logarithms.
Real effective exchange rate (CPI based)	Index
Reference monetary policy rate/shadow rate/ short-term money market rate	Percent
Private sector credit	SA, in logarithms.
Stock price index	In logarithms.
Trade balance (exports/imports)	SA/SWDA, in logarithms.
Bilateral data on exports and imports of goods and services, annual data.	SWDA, Bil.Euro
S&P GSCI Energy Commodities Nearby Index	In logarithms.
Global Real Economic Activity Index in Industrial Commodity Markets	In logarithms.

Sources: IMF IFS Database, IMF DOTS Database, Haver Analytics, authorities, and L. Krippner (https://www.ljkmfa.com/).

The model incorporates stochastic volatility to account for periods of heightened volatility, such as the 2008/09 Global Financial Crisis and the COVID-19 pandemic. Key domestic macroeconomic and financial variables are included (see Table 1), with country coverage detailed in Table 2. The sample spans from 2007:1 to 2024:3, with some country-specific VAR variations based on data availability. A separate energy block is used to capture global energy market dynamics, including commodity price indices and supply factors.

Table 2. North Macedonia: Countries and Regions on the GVAR Model

Large Economies/Blocs	**Advanced Europe Non-EA**
Euro area	United Kingdom
US	Switzerland
China	Denmark
	Israel
CESEE (non-WB)	Iceland
Bulgaria	Norway
Croatia	Sweden
Czech Republic	
Hungary	**Western Balkans**
Moldova	Albania
Poland	Bosnia-Herzegovina
Romania	Kosovo
Russia	Montenegro
Türkiye	North Macedonia
Ukraine	Serbia

19. We estimate spillovers from real, financial and monetary shocks originating in the euro area, as well as from global commodity price shocks. Consistent with standard practice in this literature, all shocks are modeled as Generalized Impulse Response Functions (GIRFs) to a 1 percent positive shock to the variable of interest (1 percentage points for interest rates). We report medians and peak response medians with 68 percent credible intervals. Unlike orthogonalized

impulse responses, GIRFs do not depend on variable ordering in the VAR model. The analysis examines the key spillover channels discussed in the previous section (with the exception of the remittances channel due to missing data), namely: shocks to euro area real activity (industrial production), financial conditions (credit and equity prices), conventional and unconventional monetary policy, and global energy prices. While the estimation produces more results, we focus here only key impulse responses that are statistically significant and economically meaningful across most Western Balkan countries.

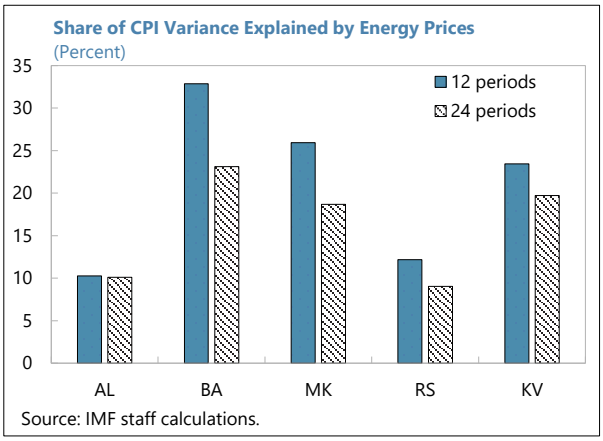
20. Euro area real activity shocks significantly impact Western Balkan economies, with spillover magnitudes closely linked to their integration in European global value chains (GVCs). North Macedonia experiences the largest effect on industrial production (0.96 percent), roughly twice or more the impact seen in Serbia, Bosnia-Herzegovina, or Montenegro (Figure 5). This reflects its deep integration into European manufacturing, particularly Germany's automotive sector. A disaggregated model confirms that supply-side shocks from Germany drive this effect. Consistent with this, manufacturing exporters' trade balances improve in response to euro area real activity shocks, with North Macedonia again showing the largest and most sustained improvement, lasting up to one year.

21. Financial spillovers from the euro area to the Western Balkans depend on financial integration and market development. Euro area private credit shocks appear to boost credit activity in the region, though effects are not always significant or large (Figure 6). Serbia experiences the strongest and most persistent rise in credit (0.67 percent), reflecting the fact that it has the highest share of euro area-owned bank subsidiaries and levels of financial euroization in the entire region. Euro area equity price shocks have a limited impact, consistent with underdeveloped markets—North Macedonia sees only a 0.34 percent increase. These results highlight emerging financial transmission channels, which are however likely to strengthen as the region deepens financial ties with the euro area.

22. Spillovers from euro area interest rate shocks depend on the degree of monetary policy independence, with euroization limiting autonomy. Euro area policy rate changes transmit strongly across the Western Balkans (Figure 7), though with some variation. Aside from the fully euroized countries which experience full transmission, other countries—both with flexible and fixed exchange rates—also see significant effects. These findings align with evidence that EA monetary policy shocks quickly pass through to retail rates (Moder, 2021). Industrial production declines most in fully euroized economies, with Montenegro (-1.6 percent) and Bosnia-Herzegovina (-1.1 percent) seeing the largest impacts, while effects are more moderate in North Macedonia and Serbia (-0.5 percent). Similar results on output by Engler et al. (2024) link transmission to sovereign spreads and exchange rates. Inflation responses are present across the region, though often muted and initially affected by a "price puzzle" in some cases.

23. The transmission of Eurozone quantitative easing (QE) to Western Balkan economies is relatively muted and predominantly indirect. Unlike interest rate adjustments, which directly influence domestic policy, QE's effects are mediated via spillovers from Eurozone real activity, inflation, and financial markets. These indirect channels significantly can boost industrial production

in Bosnia and Herzegovina and Serbia, with a borderline significant effect in North Macedonia (Figure 8). Additionally, QE-driven Eurozone growth induce a modest uptick in inflation across these countries in line with euro area inflation and an increase in demand.



24. Global energy shocks have substantial effects on headline inflation across Western Balkan countries. All countries exhibit highly significant price responses (Figure 9). Inflation increases by approximately 1.5 to 5.2 percent in response to a 1 percent rise in the energy commodity price index, with peak impacts occurring between the third and fourth quarters before gradually tapering off in the second year. Bosnia-Herzegovina, Kosovo, and North Macedonia experience the sharpest inflationary spikes, while Albania, with its significant hydropower resources, faces the smallest impact. These variations stem from differences in energy's weight in consumer price indices and energy intensity, which is highest in Bosnia-Herzegovina. North Macedonia's vulnerability is also driven by its high dependency on energy imports. Forecast error variance decompositions (FEVD) show that global energy price shocks account for 20 to 30 percent of inflation variance at the 1 to 2 year horizon in Bosnia-Herzegovina, Kosovo, and North Macedonia. Global energy price shocks lead to a significant and persistent deterioration in the trade balance for the most energy intensive and energy import dependent countries (particularly Serbia and North Macedonia).

D. Conclusions and Policy Implications

25. As Western Balkan economies deepen their economic and financial ties with the euro area, carefully designed policies can help prevent rising spillovers from turning into vulnerabilities. A strategic approach to GVC integration—reducing concentrated dependencies and diversifying trade partners—would enhance resilience. Strengthening policy coordination with the Eurozone will become increasingly important as business cycle comovement intensifies. While deeper financial integration can support economic development, it should be pursued gradually, accompanied by strong institutional frameworks, and increasing cross-border supervisory cooperation with EA regulators.

26. Euro area monetary policy—both conventional and unconventional—creates significant spillovers, limiting the scope for independent monetary policies in Western Balkans. Nevertheless, reducing financial euroization, leveraging the flexibility in the inflation-targeting frameworks to strengthen policy independence, and enhancing transparency and communication could improve policy effectiveness and credibility. Additionally, an appropriate use of macroprudential and foreign exchange liquidity management tools can help provide space for monetary policy, while mitigating financial stability risks and capital flow volatility.

27. The Western Balkan economies' high vulnerability to global energy shocks necessitates a comprehensive policy response. Monetary policy may need to react more decisively to energy price shocks to prevent inflation expectations from becoming unanchored. Structural measures, such as reducing energy intensity, diversifying energy sources, and improving energy efficiency, would enhance resilience. Strengthening social safety nets can help shield vulnerable households from energy price volatility, while targeted fiscal policies, including temporary subsidies for low-income households, can cushion the social impact of energy price volatility.

Figure 5. Spillovers from Real Shocks to Eurozone Industrial Production

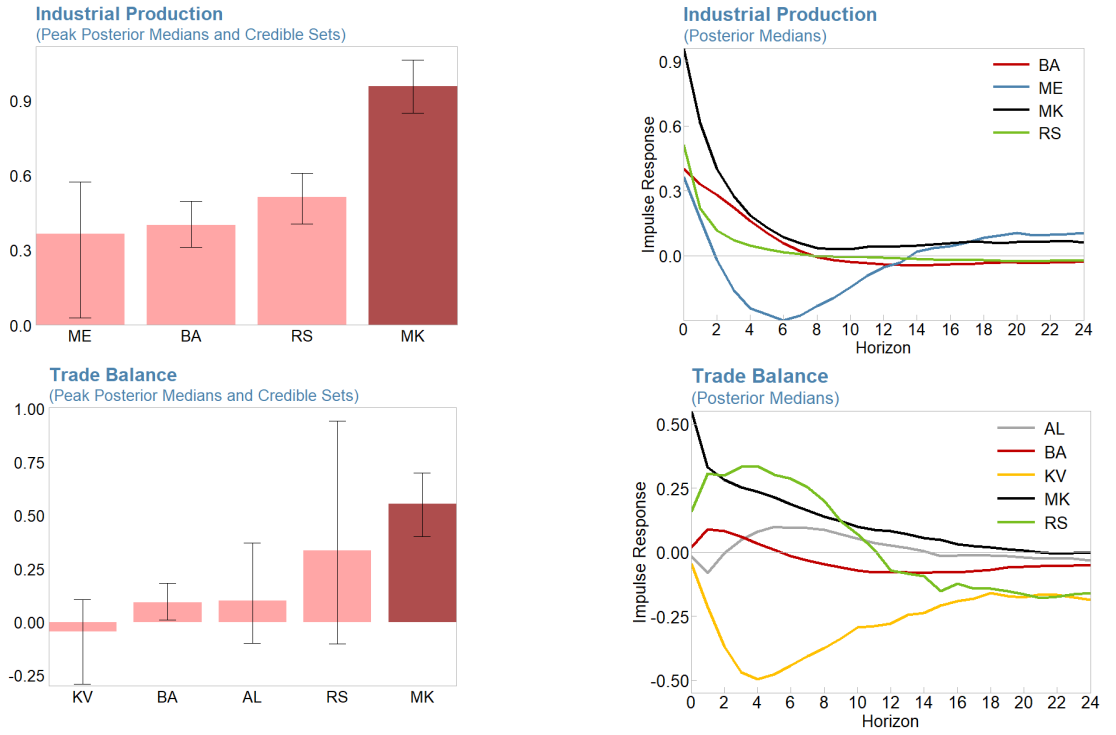


Figure 6. Spillovers from Euro Area Financial Shocks

(Credit shocks – top; Equity price shocks – bottom)

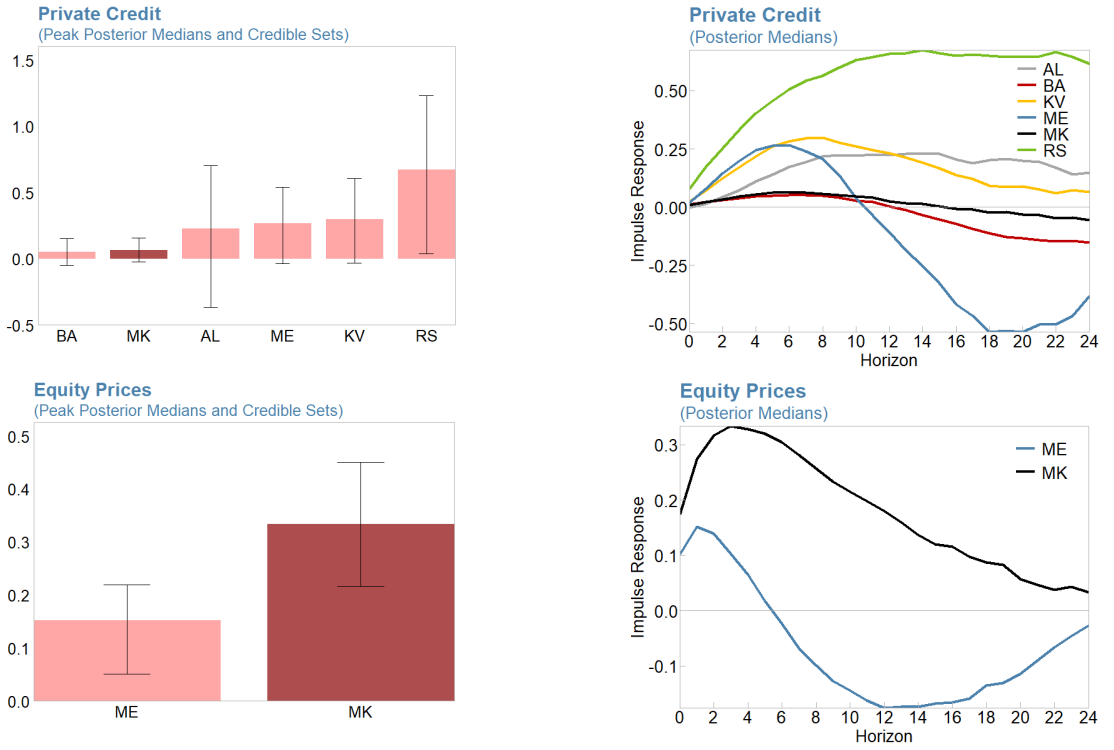


Figure 7. Spillovers from Euro Area Interest Rate Shocks

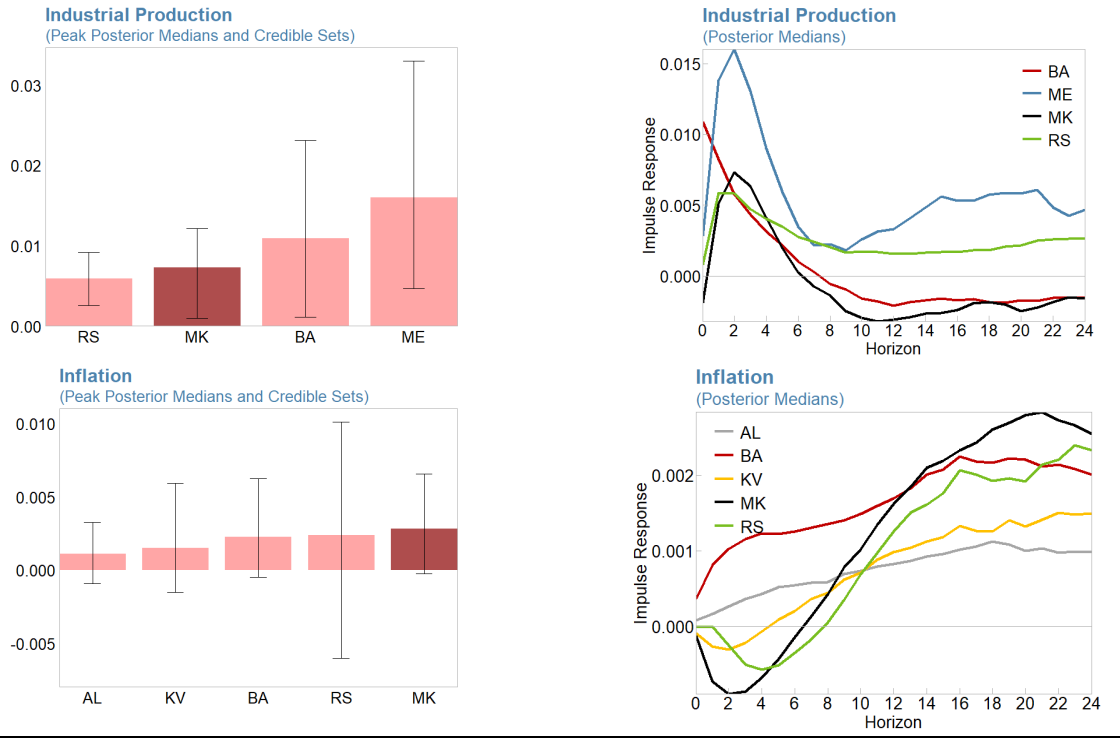


Figure 8. Spillovers from Euro Area QE Shocks

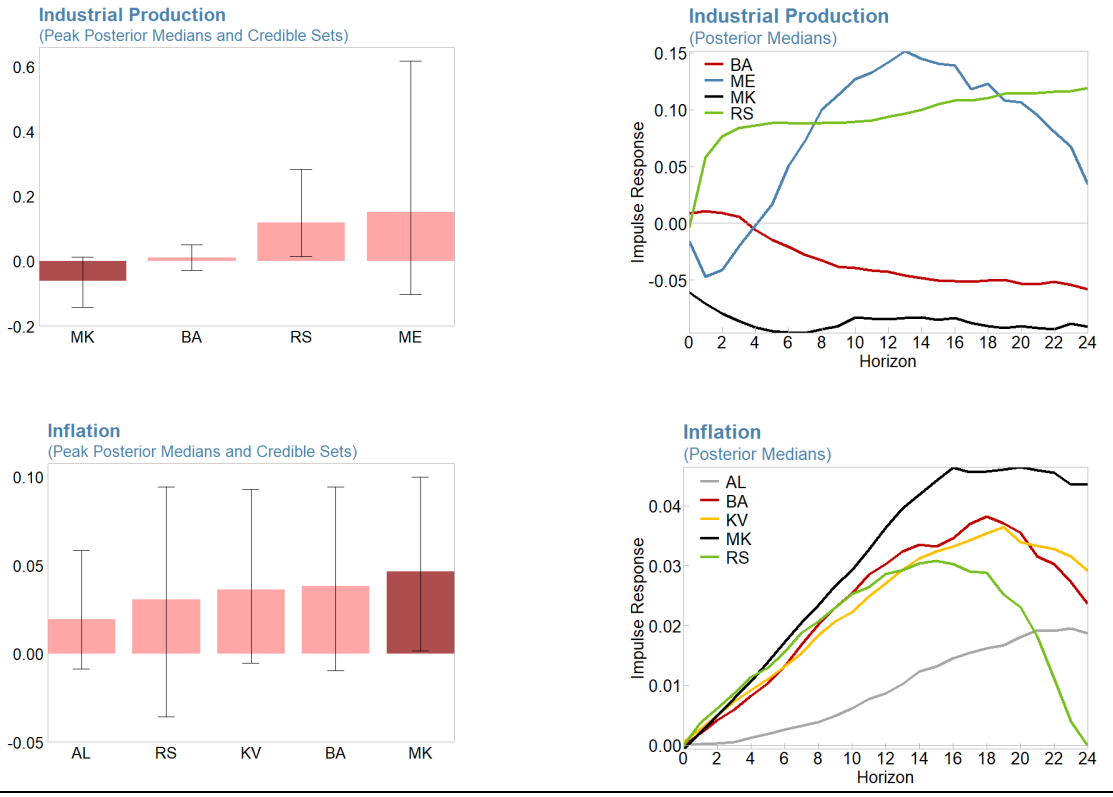
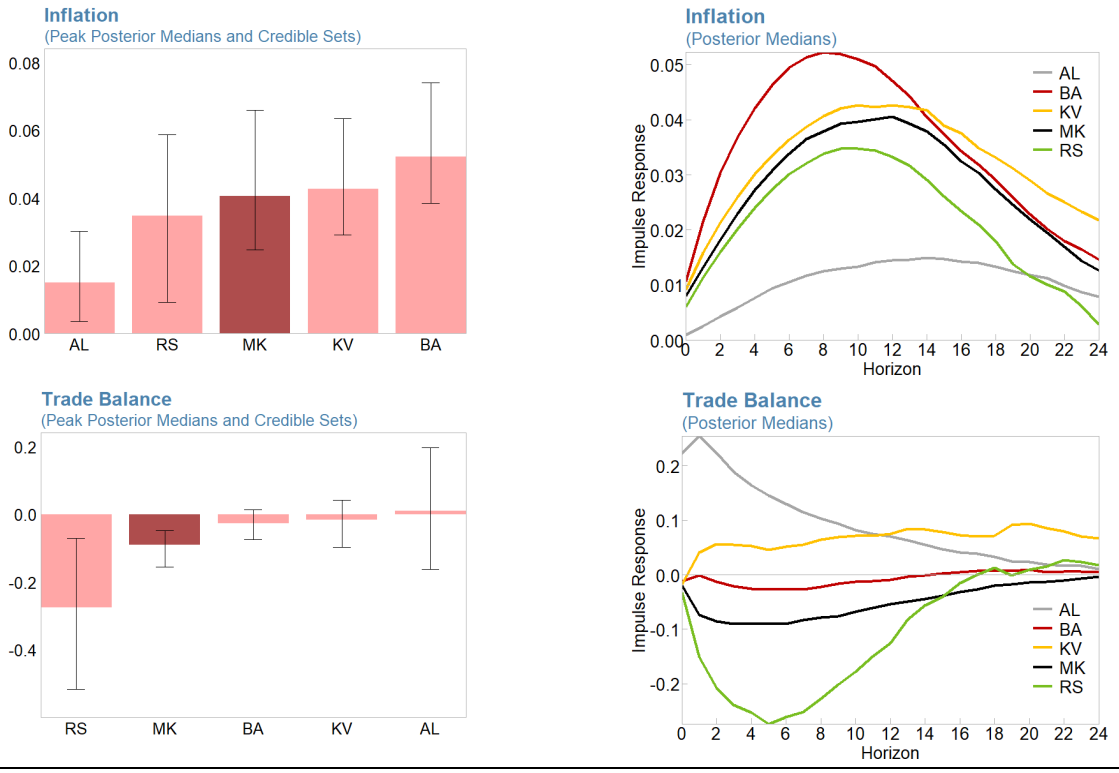


Figure 9. Spillovers from Energy Price Shocks



References

Böck, M., Feldkircher, M., & Huber, F. (2020). BGVAR: Bayesian global vector autoregressions with shrinkage priors in R. *Journal of Statistical Software*, 95(3), 1–44.

Cabezon, E., & Kovachevska Stefanova, M. (2024). *Euroization and monetary policy transmission in North Macedonia* (IMF Working Paper No. WP/24/56). International Monetary Fund.

Council of the European Union. (2024). The EU: main investor, donor and trade partner for the Western Balkans. European Commission.

della Valle, G. (2017). Negative Euro Area Interest Rates and Spillovers on Western Balkan Central Bank Policies and Instruments. *In International Monetary Fund eBooks*. International Monetary Fund.

Engler, P. (2024). ECB Spillovers to Emerging Europe: The Past and Current Experience. *IMF Working Paper*, *2024*(170), 1–1.

Feldkircher, M., & Huber, F. (2016). Forecasting with global vector autoregressive models: A Bayesian approach. *Journal of Applied Econometrics*, 31(7), 1371–1391.

Gouveia, S. H. (2014). Business cycle correlation between the Euro Area and the Balkan countries. *International Journal of Economic Sciences and Applied Research*, 7(1).Hledik, T., Jarmuzek, M., & Stavrev, E. (2016). *Monetary policy transmission in North Macedonia: Weak and asymmetric?* [Working paper]. National Bank of the Republic of North Macedonia.

Ilahi, N., Khachatryan, A., Lindquist, W., Nguyen, N., Raei, F., & Rahman, J. (2019). *Lifting Growth in the Western Balkans: The Role of Global Value Chains and Services Exports*. International Monetary Fund.

Jovanović, B., Zlatanović, A., Kluge, S., Zec, A., Ibrahimi, M., Brašanac, M., Vasić, J., Šelmić, R., Mima, R., Tomić, V., Ćulafić, B., Lalović, O., Manova Stavreska, A., Nikolova, S., Rajič, A., & Alihodžić, B. (2024). *Transforming the Western Balkans through Near-shoring and Decarbonisation*. The Vienna Institute for International Economic Studies and Western Balkans 6 Chamber Investment Forum.

Jovanovikj, B., & Georgievska, L. (2015). Transmission channels of the global economic crisis: Micro evidence for Macedonia. Journal of Contemporary Economic and Business Issues, 2(1), 5–20.

Li, N., & Gade, T. P. (2023). Emigration, Business Dynamics, and Firm Heterogeneity in North Macedonia. Working Paper No. 2023/268. International Monetary Fund.

Melecky, M. (2012). Macroeconomic dynamics in Macedonia and Slovakia: Structural estimation and comparison. *Economic Modelling*, 29(4), 1377–1387.

Miteski, M. (2024). The impact of remittances on economic growth in the region of Central and Southeastern Europe (Working Paper No. 1). National Bank of the Republic of North Macedonia.

Moder, M. (2017). Eurosystem balance sheet expansions and output spillovers in CESEE countries. European Central Bank Working Paper Series, No. 20952.

Moder, I. (2019). Spillovers from the ECB's non-standard monetary policy measures on South-Eastern Europe. *International Journal of Central Banking, 15*(4), 127–163.

Moder, M. (2021). Monetary policy transmission in euroized economies: The case of the Western Balkans. *European Central Bank Working Paper Series*, No. 26111.

Pesaran, M. H., Schuermann, T., & Weiner, S. M. (2004). Modeling regional interdependencies using a global error-correcting macroeconometric model. *Journal of Business & Economic Statistics*, 22(2), 129–162.

Pere, E., & Ninka, E. (2017). International Trade in Western Balkan Countries: Analysis Based on the Gravity Model. *The WIIW Balkan Observatory*, Working Paper 126.

Ramadani, G., & Pandiloski, P. (2019). Disinflationary spillovers from the Euro Area into the countries of Southeastern Europe. *Journal of Central Banking Theory and Practice, 8*(3), 65–93.

Unevska Andonova, V., & Petkovska, M. (2011). *Transmission mechanisms of external shocks: Evidence from North Macedonia*. In *Proceedings of the International Conference on Economic Integration* (pp. 45–62). National Bank of the Republic of North Macedonia.

World Bank. (2022). *The Trade Policy Strategy 2.0 for North Macedonia: Trade Competitiveness Diagnostic and State Aid Effectiveness Report*.