

ASSESSING AND STREAMLINING POTENTIALS OF OPEN BALKAN INITIATIVE

WESTERN BALKAN ECONOMIC FORECASTS: OPEN BALKAN AND BERLIN PROCESS

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About the Project

CENTER FOR ECONOMIC ANALYSES-CEA IS CONDUCTING A ONE-YEAR OSF PROJECT TITLED:

ASSESSING AND STREAMLINING POTENTIALS OF THE OPEN BALKAN INITIATIVE (OBI).

BACKGROUND

Recognizing the lack of interest of the EU in enlargement in the Western Balkans, Serbian President Aleksandar Vučić, the Prime Minister of North Macedonia, Zoran Zaev, and Albanian Prime Minister Edi Rama decided to “take destiny in their own hands” and launch a “mini-Schengen” in October 2019. In July 2021, this idea evolved into a regional initiative “**Open Balkan**”¹. The initiative is no substitute for membership in the EU, but a path to accelerated membership and utilization of the existing but insufficiently used potentials in these countries, which might facilitate additional economic growth and development, and thus, welfare for their citizens.

CHALLENGES TO KEEP THE MOMENTUM

Developing and cultivating neighborly relations in the Western Balkans in expectation of economic prosperity will require eliminating border controls and other barriers in order to facilitate the movement of people, goods and services, and capital in the region. Regional disparities analyses (for example, coastal vs. internal, NUTS 2 and NUTS 3 regions, urban vs. rural, capital cities vs. other cities) of the Open Balkan countries might offer insights when determining priorities for more accelerated growth and internal convergence of the Open Balkan region. **At the moment, there is a lack of properly elaborated analyses to assess the existing challenges.**

The Covid-19 pandemic, the food and energy crises, and the war in Ukraine illuminate the importance of internal cooperation and coordination and need for mutual understanding and solidarity among Open Balkan countries. Internal coordination and cooperation, exchange of experiences, and solidarity in the region bring value to future EU integration if the Open Balkan countries can speak in one voice.

The region’s external environment, especially now with the war in Ukraine, emphasizes the importance of cooperation and coordination and the need for mutual understanding and solidarity.

TOOLS AND INSTRUMENTS FOR ASSESSING THE POTENTIALS FOR ACHIEVING COOPERATION AND COORDINATION

While on the highest political level there is still evidence of political will for Open Balkan, on the administrative level, or “on the ground”, people cannot really sense the benefits of this initiative just yet. **At the very least, what is missing is more evidence-based policy research on the bottlenecks in cooperation and potential of the six countries of the Open Balkan.**

ACTIVITIES OF THE PROJECT

An independent pool of experts from the six countries diagnosing and investigating the bottlenecks for cooperation and coordination among the Open Balkan countries will add value to the already demonstrated political will for the Open Balkan Initiative, leading to its more structured, priority-focused, and systematic development.

¹ By Open Balkan Initiative, we will define the territorial space of six countries of the Western Balkan-WB6: Albania, Bosnia and Herzegovina, Montenegro, North Macedonia, Kosovo, and Serbia.

Executive summary

Deepening the regional economic cooperation in the Western Balkan through free movement of goods, services, labour and capital is of key importance for both Open Balkan initiative and Berlin Process. Within the Open Balkan initiative, the realisation of proposed actions should strengthen and expand the regional cooperation and increase the economic potential of participating countries and the region as a whole, although full potential would only be reaped by an initiative that incorporates all six Western Balkan countries in an inclusive manner.

Key to forecasting and estimating the economic effects on the Western Balkan region is to understand the channels through which these regional integration processes influence main macroeconomic variables. The direct impact of both initiatives (Open Balkan initiative and Berlin Process) would be chiefly (but not exclusively) on intraregional trade of goods and services, capital investment and labour mobility within the region, and regional projects in different fields of common interest.

In order to build and estimate the empirical models, quarterly time series of macroeconomic indicators were used, covering real, external and fiscal sector and labour market of each economy. Long-term forecast of selected macroeconomic indicators is made using the Bayesian Vector autoregression model-VAR method, which was originally devised to improve macroeconomic forecast, by constructing empirical models through a combination of historical and a-priori information, both of statistical and economic nature. Baseline and alternative scenarios have been built and therefore effects on key macroeconomic indicators estimated by using different assumptions for exogenous variables, depending on the composition and the form of regional integration.

Results show that Western Balkan as a region would have better economic perspectives if countries are part of some regional integration.

Open Balkan

Regardless of certain differences, the Open Balkan initiative and the Berlin Process essentially would have similar impact on the region. Providing that all Western Balkan countries participate in the Open Balkan initiative, projections show that economic growth would pick up the pace, as firmer ground for growth of export and investment is warranted. Overall wage gains would not be much different, whereas public debt is envisaged to increase slightly more compared to the baseline scenario.

Berlin Process

Based on the forecast, Berlin Process has the same advantages, though the overall regional impact would be somewhat less pronounced compared to the scenario of full participation within the Open Balkan initiative, despite certain differences observed on a country level.

Overall, for the six countries

In spite of the positive impact that the Open Balkan initiative with a partial participation of Western Balkan countries has on certain areas of the economy in the region, projections do not provide evidence that it will deliver higher economic growth, at least without other economic measures and policies being undertaken by countries to complement this process. Some of these economic measures were discussed within the dynamic SWOT analyses at the rapid economic analysis of the OBI here: https://cea.org.mk/wp-content/uploads/2019/09/2.-ENG-CEA-on-OB_Economic-effects_VU_FINAL.pdf. More detailed on the possible economic measures and policies to be implemented were presented in details in the studies about the country disparities, territorial challenges, needs and potentials and the cluster analysis of the six countries of the Western Balkan: <https://cea.org.mk/cea-prepared-3-studies-on-disparities-similarities-of-the-wb6-countries/?lang=en>.

The results from this macroeconomic forecasting and the studies noted should be seen as an indication of what issues macroeconomic policies should address and go hand in hand going forward so that benefits from these initiatives, which are apparent, could be optimised. Therefore, in order to unlock further economic growth, countries in parallel should accelerate the pace of the reforms and address key structural challenges.

Background

As per the ToR, this regional research project has four main tasks:

- TASK 1: Country analysis - screening focused on the Open Balkan Initiative-OBI
- TASK 2: Disparities analysis
- TASK 3: Administrative gaps and bottlenecks assessment
- TASK 4: Open Balkan macroeconomic forecasts

This document presents the findings of the TASK 3: *Administrative gaps and bottlenecks assessment*. As per the ToR, the TASK 3 has the following objective: *To do a fact check and prepare recommendations with a list of potential legislative changes*. This task follows after the TASK 1 of screening on the countries and after the TASK 2 on the disparity analysis.

The point with the TASK 1 was that almost any political initiative could be implemented but the ultimate goal of any political initiative should be the improved welfare of the citizens. Thus, the political idea and will behind the Open Balkan should be somehow transferred vertically from the political actors on power (executive-government and legislative-parliament) through the administration with the instruments of the meetings, sessions, strategies, action plans, programs etc. and their implementation to the citizens and even more to the improved benefit of the citizens.

The point with the TASK 2 was that each of the WB6 countries have its own characteristics thus, there are disparities within and among the countries but also similarities. That is why we want to analyze the disparities and similarities at EU's NUTS 3 regions depending on the data available. The idea is that given the OBI MoUs and the OBI Agreements and the EU's freedom of movements some NUTS regions of the WB6 countries might have more similarities among themselves than the others. Thus, those NUTS 3 regions that are clustering e.g., are showing similarities in some demographic attributes and/or some socio-economic attributes might be a platform for more efficient implementation of the EU's freedom of movements and the objectives of the OBI MoUs and OBI Agreements. This does not mean that the regions that are with more disparities cannot achieve the same objectives. It just demonstrates that for more similar regions the policies might be implemented more efficiently as they have similar challenges. Those regions that show larger disparities will probably need more resources to reach convergence and less inequalities.

The point with the TASK 3 was to do fact-check about the main initiatives with the potentials of the administration to administer the initiatives. In this part we identified an OBI Agreement and for the identified one did fact-check and prepared recommendations with a list of potential legislative changes.

Given the resources of the project we identified OBI Agreement on Conditions for Free Access to the Labor Market (*provided this Agreement enters into force its application shall begin on the date of entry into force of the Agreement on interconnection of schemes for electronic implementation of the citizens of WB*). This Agreement was also pointed out as the most significant for the business community field work and discussions in Skopje and Belgrade.

We developed a tool to assess if the participating OBI countries have developed/adopted/established any bylaws, protocols or other follow-up instruments prescribed in the OBI MoUs and the OBI Agreements. Finally, for the fact check of the implementation of the identified OBI Agreement experts of the six countries assessed the administrative gap and came up with recommendations about the list of potential legislative changes. Thus, the TASK 3 comprised:

1. Workshop with business community in North Macedonia and Serbia to get the perception of the businesses about the relative importance of the OBI MoUs and the OBI Agreements (participating and non-participating countries);
2. Implementing a tool to assess if the participating OBI countries have developed/adopted/established any bylaws, protocols or other follow-up instruments prescribed in the OBI MoUs and the OBI Agreements (participating countries only);
3. Fact checks about the implementation of the one identified OBI *Agreement on Conditions for Free Access to the Labor Market* and preparation of recommendations with a list of potential legislative changes (participating and non-participating countries).

The point with the TASK 4 is to investigate the economic benefits/loss of participating/not-participating the OBI initiative for countries in the WB, individually and as a group (region) with full and partial integration, versus the Berlin Process, through the prism of long-term forecast of key macroeconomic indicators. Details on the assumptions behind the scenarios and the results are presented in this document. Three scenarios were quantified, analyzed and results are presented:

1. Only three countries (Albania, North Macedonia and Serbia) are part of the OBI initiative;
2. All six WB countries become OBI members;
3. OBI initiative is melted into Berlin Process.

IMPORTANT NOTE: Country experts took a neutral stance and unbiased approach as they conduct the data collection and analysis for this research task. No matter on one's stance towards OBI, be that informed criticism or support of the initiative, their opinion should not affect the data collection process, the process of data analysis so it does not favor, nor disregard, nor encourage one answer or outcome over others.

The OBI countries from the Western Balkan (Albania, North Macedonia and Serbia) are defined for the purpose of understanding in this document as **“participating”** and the countries from the Western Balkan that are not part of the OBI (Bosnia and Hercegovina, Kosovo and Montenegro) are defined for the purpose of understanding in this document as **“not-participating”**.

Navigating this document

We start this document with setting up concepts and expected economic impact for BP and OBI that will help us in designing the economic assumptions behind the scenarios. Then we move to explaining the scenarios build and the assumptions behind the scenarios. Three scenarios were quantified and analyzed within 10-years horizon:

1. Only three countries (Albania, North Macedonia and Serbia) are part of the OBI initiative;
2. All six WB countries become OBI members;
3. OBI initiative is melted into Berlin Process.

Then we present the results from the forecasting country by country for all six Western Balkan countries and for the region as a whole. Conclusions and recommendations follow.

There are three annexes. The first annex presents the data used and the exogenous variables used for the forecasting. The second annex presents the methodology used and the techniques. Finally, the third annex present the description of the variables used, sources to collect from and the bibliography used for the preparation of the analysis in this document.

Interested reader can read the first part without the annexes and it is informative enough for policy perspective. Those that are more technically skilled and are interested on how we did the calculations by respecting the consistency in the modelling can go in the annexes and study in more details how the calculations were done.

Open Balkan initiative vs. Berlin Process, concepts and expected impact

Key to estimating and forecasting the economic effects of WB regional integration is to understand the channels through which these integration processes influence main macroeconomic variables. Therefore, in this section we present potential direct benefits of both initiatives from the implementation of envisaged activities, by reviewing memorandums, agreements, papers and analyses done so far. This should enable us also to make distinction of static effects of both initiatives and construct proxy variables to reflect the impact on certain economic aspects that these initiatives would contribute to.

Within OB initiative, the realisation of proposed actions pertaining to market liberalisation for goods, services and labour should strengthen and expand regional cooperation and increase the economic potential of participating countries and the region as a whole. Objectives that are set as regards the facilitation of merchandise trade are to simplify procedures to the extent possible, gradually remove trade barriers, increase and enhance economic cooperation, promote development of economic relations and exchange data between customs and other authorities.² With respect to free movement of services, memorandums cover three areas, culture, arts and tourism, whereby when it comes to the latter, OB countries committed to fostering favourable investment conditions and encouraging cooperation in order to expand the tourism sector³. Priorities that are set in the area of free movement of people include: free movement with IDs, equal treatment for residency and employment, harmonisation of social security and employment laws, recognition of professional qualification, as well as cooperation in the field of security.⁴ The cooperation in the area of free movement of capital aims to increase investment across the region, between the countries and from third parties. Following the recent energy crisis, OB initiative expanded its scope of work in the energy sector too, focusing on joint investment in renewables as well as integration of electricity and gas markets.

Berlin Process has been supporting WB regional integration and its European perspective since 2014. Within Berlin Process that promotes common regional market, an action plan has been endorsed by WB

² See Ristovski and Kacarska (2022).

³ Memorandum of Understanding on Cooperation in the Field of Tourism in the Western Balkans ([download](#)).

⁴ Agreement on Interconnection of Schemes for Electronic Identification of the Citizens of the Western Balkans ([download](#)).

leaders, which serves as a tool to make the region more attractive and competitive, and to bring it closer to the EU markets. The plan is organised into four areas: trade, investment, digital, and industry and innovation, whereby goals incorporated to the plan include liberalisation of markets for goods, services, labour and capital, with crosscutting measures meant to align with EU single market rules and standards, as well as policies that seek to attract investment and integrate industrial sectors into European and global value chains.⁵ In 2020, the European Commission announced a new seven-year Economic and Investment Plan that committed nine billion euros across several priority areas including within-region connectivity and integration.⁶

Obviously, market liberalisation and economic integration are overlapping areas between the initiatives and are ways to boost trade, investment and economic growth as well as prepare the countries for their future participation in the EU single market. Moreover, the OB initiative vision of market liberalisation goes a step further, promising open borders and full free movement within the region. Both have similar ideas on how to address the challenges ahead, though the OB initiative struggles to secure participation of all WB countries.

The OB initiative, unlike the Berlin Process, lacks a comprehensive plan that outlines the scope of the initiative and the expected deliverables. On the other hand, with no specific institution tasked with oversight, strategic development, or monitoring its achievements, the Berlin Process has become a sizeable initiative with too many things on its plate that rely on voluntarily engagement of six WB leaders.⁷

Furthermore, the OB initiative does not have a strong commitment to the connectivity and digital agenda, while the Berlin Process serves as a venue for cooperation and streamlining of the connectivity agenda (transport), green agenda (environment), and digital agenda (infrastructure).⁸ Nevertheless, the EU energy package for the WB emphasises the role of external actors' involvement in regional projects, particularly with regard to securing finances.

As it is mentioned by Uzunov (2022), WB region is highly specific. On one side, countries are similar in terms of the overall economic structure, factor endowment, belonging to the group of middle-income countries, etc. On the other hand, the region is also unbalanced with respect to the size of the economies, labour markets, foreign direct investment (FDI), etc.

Activities with respect to facilitation of trade of goods and services and free movement of labour are expected to create conditions for improved economic performance of (existing and prospective) businesses and the entire economy, through utilisation of economies of scale, growth of exports, cheaper imports, availability/inflow of cheaper labour force with better skills, improved attractiveness for FDI and competitiveness, as well as faster implementation of sustainable structural reforms. Nevertheless, these positive effects are expected, not certain, since they also depend on the current economic situation within a country, as well as on the readiness of authorities to supplement the facilitation of trade of goods and services and free movement of labour with reforms in closely related areas, such as education, health, the system for social justice, taxation and numerous other areas (Uzunov, 2022). Forecasting of economic effects will not take into account the impact of these reforms, which could also affect trends of certain observed variables, particularly economic growth in the longer run.

Based on Uzunov findings, if the OB initiative incorporates all six WB countries in an inclusive manner the opportunities for economic growth will enhance, the opportunities for growth of exports even more, but the threats of outflow of labour force will also enhance, implying that complimentary reforms are of key importance.

⁵ Common Regional Market Action Plan ([download](#)).

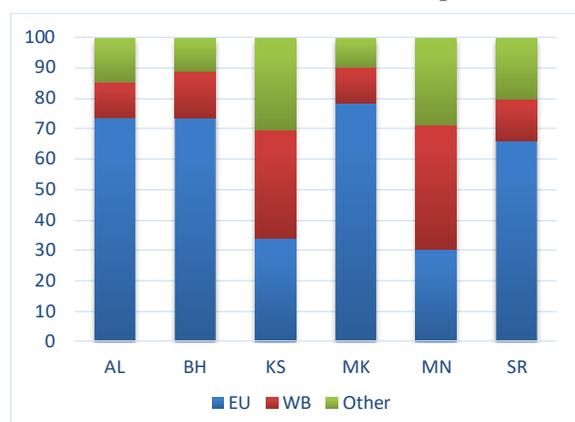
⁶ Visit the [website](#) for more information.

⁷ See Marciacq (2017).

⁸ See Ristovski and Kacarska (2022).

Intraregional trade of WB countries is still low, in 2021 amounting to 14.3% of total WB export of goods or 4.9% of region's GDP, suggesting that further efforts are needed. This is driven by political and geopolitical legacies, lack of infrastructural connectivity, and substantial remaining non-tariff barriers (Gurieiev, 2022). Therefore, removing remaining non-tariff barriers and streamlining the border procedures, as well as initiatives to improve regional transport infrastructure, which is feasible through the integration process of the region, would improve regional trade and cooperation.

Chart 1: Structure of merchandise export of WB countries in 2022 (%)



Source: Own calculations based on data from Eurostat.

Regional free trade agreements reduce trade barriers, harmonize economic rules of the game, create larger markets, and attract foreign investment that have multiple effects on the economies by providing new productive and managerial technology. The experience of Central and Eastern European (CEE) countries shows that regional integration is an important pre-cursor to accession, removing barriers, harmonizing regulation and attracting investment (Gurieiev, 2022). Unfortunately, so far, the regional integration process in WB has been much slower than that of CEE countries before their accession to the EU. Many non-tariff barriers, de facto, remain in place, obstructing creation of a single economic space. Removing these barriers will increase GDP and welfare, will attract new investment, and will accelerate productivity growth and innovation (Gurieiev, 2022).

The literature has established the causal relationship between growth in trade (driven by reduced trade costs) and GDP growth (Feyrer 2019). Fontagne et al. (2022) estimate that deepening of existing trade agreements around the world would boost global trade by 5% and increase world GDP by 1%.

The positive static effects of trade are especially large in small countries, which is particularly relevant for WB countries. There are also major dynamic effects of trade openness. Trade liberalisation increases access to a larger market, and the market size is a key driver of productivity growth and innovation. Therefore, creating a single WB economic space will inspire entrepreneurial dynamism and investment, especially in smaller countries. Market size also attracts FDI. Estrin and Uvalic (2016), however, find that relative to other transition countries FDI in WB do not result in substantial spillovers to domestic companies.

In addition to opportunities, trade also creates important challenges. Depending on the economy, it may result in major spikes in unemployment and the need for fiscal support, since high mobility of labour force provide workers with opportunities in neighbouring countries. However, there is also evidence that those who leave may provide the home country with remittances and with “knowledge remittances” when the emigrants send back home both money and business ideas they learn in their host countries (EBRD, 2018).

There is a rather limited number of research papers on the subject of quantitative estimates of the benefits of the WB regional integration. Head and Mayer (2022), using an approach that allows conducting

counterfactual analysis, relying on limited amount of data, have estimated welfare gains for three scenarios. In the partial OB integration scenario, the participating countries receive non-trivial gains (with the smallest country, North Macedonia, benefiting the most), whereas the non-participating countries suffer virtually trivial losses. In the scenario of full WB regional integration, all six countries receive substantial gains, and these gains exceed those for the partial OB integration scenario, whereby the smallest country, Montenegro, benefits the most. However, the largest gains would be obtained if all six WB countries joined the EU.

Scenarios considered

Scenarios

The aim of this document is to investigate the economic benefits/loss of being/not being part of the OB initiative for countries in the WB, individually and as a group (region) with full and partial integration, versus the Berlin Process, through the prism of long-term forecast of key macroeconomic indicators.

Moreover, in terms of economic integration, three scenarios have been considered and economic effects of each disentangled, respectively:

1. Only three countries (Albania, North Macedonia and Serbia) are part of the OB initiative;
2. All six WB countries become OB members;
3. OB initiative is melted into Berlin Process.

Therefore, selected macroeconomic indicators are analysed and long-term forecast prepared using time series data, appropriate econometric methods and plausible assumptions as to what the integration of the WB countries implies in terms of trade and investment growth, labour and capital movement.

In order to do so, firstly, baseline long-term projections are made for macroeconomic indicators for every country individually. These results are then used to make forecast for the WB region as a whole. In the next step, by making assumptions as regards the trade and investment growth, labour and capital movement, that are dependent on the composition and the form of integration, projections of selected indicators are prepared, on an individual and group level.

Assumptions for the scenarios

In a nutshell, OBI vision of market liberalisation envisages full free movement of goods and labour within the region, implying greater incentive for merchandise trade and labour mobility. On the other hand, the Berlin Process, designed to fulfil an intermediary function in the EU accession process, and accelerate activities with respect to transport, environment and infrastructure would lead to relatively greater FDI and projects within the region. Therefore, assumptions for the exogenous variables differ in a way that, compared to the baseline, intraregional trade and labour mobility in each country is envisaged to accelerate by 1 percentage point (pp), while regional FDI and projects by 0.5 pp as regards the direct impact of the OB initiative, and vice versa with regard to the Berlin Process` direct impact.

When forecasting the benefits of full versus partial OBI integration, data on intraregional trade, regional FDI and proxy for regional projects has been separated into participating and non-participating countries, whereby the mean forecast of these variables for non-participating countries take the value of the baseline scenario, while for participating countries take the value of the alternative scenario constructed for full OBI integration. Alternative long-term forecast of macroeconomic indicators for participating countries is made using estimated (combined) assumptions at WB level.

Before doing the dynamic forecast, previously selected models have been re-estimated. By aggregating the results according to the abovementioned scenarios, we are able to disentangle the benefits of each process, group of countries, and a particular country depending on the level of integration.

The following Table illustrates the characteristics of the scenarios.

Table. Characteristics of the scenarios considered for forecasting

<i>OBI and BP differences in assumptions</i>	OBI Full free movement of goods and labour within the region, implying greater incentive for merchandise trade and labour mobility	BP Accelerate activities with respect to transport, environment and infrastructure would lead to relatively greater FDI and projects	
<i>Scenario</i>	Participating OBI countries only	Six countries OBI	OBI become BP
<i>Exogenous variable</i>	Market liberalization. Full free movement and greater incentive for merchandise trade and labour mobility	Market liberalization. Full free movement and greater incentive for merchandise trade and labour mobility	Higher capital investments and FDI. Accelerate activities with respect to transport, environment and infrastructure would lead to relatively greater FDI and projects within the region
<i>Market liberalization assumption</i>	1 p.p. acceleration	1 p.p. acceleration	0.5 p.p. acceleration
<i>Higher capital investment and FDI assumption</i>	0.5 p.p. acceleration	0.5 p.p. acceleration	1 p.p. acceleration
<i>OBI-3 or OBI-6</i>	Participating countries take mean values of the OBI-6 Non-participating take mean values of the baseline scenario	All countries take mean values of the OBI-6	NA

The direct impact on the economic developments of both regional integration processes (OBI and Berlin Process-BP) would be chiefly (but not exclusively) on intraregional trade of goods and services, FDI and labour mobility within the region, and regional projects in different fields of common interest.

While for foreign trade and FDI there is high frequency data and time series available, data on labour mobility and projects within the region is not readily available and is limited, which are very important for building the models and designing the scenarios for estimating and forecasting the effects of regional integration of WB countries. Therefore, for these two indicators proxy variables with a quarterly frequency have been generated using balance of payments data.

NOTE: the proxy variable related to labour mobility is country specific, while the proxy variable related to regional projects as well as data on foreign trade and FDI refer to the region as a whole.

Table 1: Descriptive statistics of exogenous variables (quarterly growth rates)

<i>Measure</i>	EU GDP	Intraregional trade	Regional FDI	Regional project proxy	Labour mobility proxy					
					AL	BH	KS	MK	MN	SR
<i>Mean</i>	0.3	1.3	162.5	1.5	1.5	0.7	1.4	0.9	2.5	2.4
<i>Median</i>	0.4	1.0	-0.5	0.9	0.3	1.1	2.0	0.6	1.7	-0.5
<i>Maximum</i>	11.0	19.1	9238.7	17.5	60.6	11.9	10.3	30.9	20.5	42.5
<i>Minimum</i>	-10.9	-11.8	-99.4	-8.3	-30.6	-21.3	-13.0	-9.8	-13.8	-39.9
<i>Std. Dev.</i>	2.2	5.4	1213.0	5.3	16.2	5.4	4.2	5.5	5.1	14.4

Scenarios have been built and effects on key macroeconomic indicators estimated using different assumptions for these exogenously treated variables. Firstly, assumptions for the baseline scenario have been made based on historical data over the analysed period, using trimmed mean. Trimming process is not equal for all series, but indicator specific depending on the variability or standard deviation of the observed variables.

Table 1 shows descriptive statistics of exogenous variables before trimming, while table 2 after trimming is made. The mean in Table 2 is used to prepare the baseline forecast for these variables and is a basis to design alternative scenarios.

Table 2: Descriptive statistics of exogenous variables after trimming

<i>Measure</i>	EU GDP	Intraregional trade	Regional FDI	Regional project proxy	Labour mobility proxy					
					AL	BH	KS	MK	MN	SR
<i>Trim (%)</i>	10	10	60	10	30	10	10	10	60	30
<i>Mean</i>	0.3	1.2	1.6	1.2	0.2	1.0	1.6	0.6	1.8	1.5
<i>Median</i>	0.4	1.0	-0.5	0.9	0.3	1.1	2.0	0.6	1.7	-0.5
<i>Maximum</i>	1.6	8.8	13.8	10.0	10.9	8.0	6.5	6.3	3.6	14.7
<i>Minimum</i>	-1.3	-7.5	-7.4	-6.5	-10.8	-6.3	-4.7	-5.8	0.2	-7.5
<i>Std. Dev.</i>	0.7	3.9	7.3	3.8	5.3	3.2	2.8	3.1	1.1	6.4

Using the best performing specification for a particular country and projections for the exogenous variables based on results from Table 2, we obtain baseline forecast for the observed macroeconomic indicators, which are then integrated at the level of the region.

When analysing the dynamic effects of the OBI and the BP the mean forecast of exogenous variables is adjusted appropriately to account for the qualitative assessment presented in the previous section. Table 3 shows the difference in the mean forecast of exogenous variables for the baseline scenario and alternative

scenarios pertaining to BP and the OBI with full and partial integration of WB countries. Note that the assumption on GDP of EU is kept the same as in the baseline, regardless of the scenario being analysed.

Although the BP and the OBI essentially represent a same idea and have same objectives, there are some differences, whose static effects are difficult to quantify and separate at this stage. Nevertheless, an attempt to roughly disentangle the direct impact is made so that spillover effects and longer-run economic benefits are projected.

Table 3: Assumptions for exogenous variables in alternative scenarios (quarterly growth rates)

Scenario	Intraregional trade	Regional FDI	Regional project proxy	Labour mobility proxy					
				AL	BH	KS	MK	MN	SR
Baseline	1.2	1.6	1.2	0.2	1.0	1.6	0.6	1.8	1.5
Berlin Process	1.7	2.6	2.2	0.7	1.5	2.1	1.1	2.3	2.0
OB - full integration	2.2	2.1	1.7	1.2	2.0	2.6	1.6	2.8	2.5
OB - partial integration	1.5	1.7	1.9	0.6	1.0	1.6	1.0	1.8	1.9

Results

Forecast of macroeconomic indicators is provided for a period of ten years, which does not necessarily mean that the forecasting period starts from 2023. However, it implies that countries have walked the path and bore the consequences of the pandemic and recent episodes of energy and high inflation crises, followed by a recovery, as an initial condition. Furthermore, it also implicitly takes into account the current state of play, respectively the current structure of the economy and macroeconomic policies being implemented, recent debt dynamics etc. In addition, the forecast encompasses the impact after agreed actions with regard to market liberalisation for goods and services, and labour and capital mobility measures have been undertaken, and the results shown present the isolated effects of these activities. Also, potential multiplying effects that could arise from further economic cooperation between countries have not been taken into account.

While different specifications could yield somewhat different outcomes, we are confident that the impact or the differences that analysed scenarios have in comparison to the baseline would be on the same side. Moreover, the goal is not to compare the magnitude of the growth rates or the levels (either in absolute terms or in % of GDP) of macroeconomic indicator between countries, but rather look at the differences in the growth rates and levels between different scenarios within a country and for the region as a whole.

Firstly, we will look at the results of the empirical models for each WB country.⁹ These results have been aggregated at the level of the region and discussed in this section, whereas conclusion and recommendations are presented in the following section.

⁹ The results of the model are obtained through Bayesian sampling with 10,000 draws, whereby unstable draws have been automatically dropped, with 0.1% burn-in, and the mean (instead of median) is used as a point forecast.

Albania

Results show that Albania would benefit from any integration process in the region, either via Berlin Process or the OB initiative, with full or partial integration. Participation of all WB countries in the OB initiative, however, would have more sizable impact on the Albanian economy. Positive effects are foreseen in the area of investment, exports, and overall economic activity, as well as in the fiscal area, with public debt potentially growing with a slower pace compared to the baseline scenario. Wages, on the other hand, is envisaged to grow with a similar intensity as in the baseline, on average.

Table 4: Projected ten-year average impact per annum for Albania, in pp

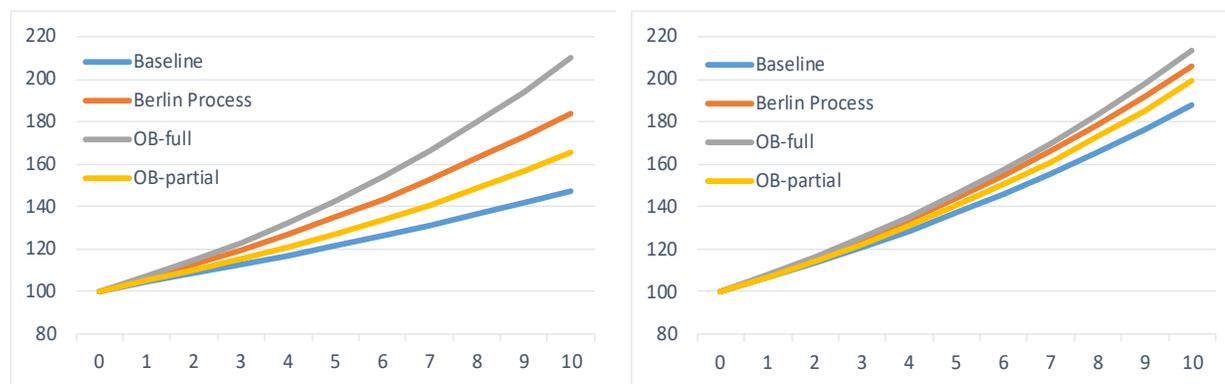
	GDP	Investment	Export	Wages	Public debt	Debt ratio
Berlin Process	0.2	2.3	1.0	0.0	-0.3	-3.6
OB - full participation	0.2	3.8	1.4	0.1	-0.3	-4.1
OB - partial participation	0.1	1.2	0.6	0.0	-0.2	-2.2

Note: Data for debt ratio refers to the difference at the end of the forecasting period.

Results in tables present the difference in pp of average annual growth rate for a period of ten years relative to the baseline scenario.

It is worth noting that although both initiatives are beneficial for Albania, projections show that the OBI initiative (full participation of WB countries) contributes for more dynamic growth of investment and export compared to the case of Berlin Process, the share to GDP potentially increasing by about 15 pp and 22 pp respectively over the forecast horizon, though not being translated into a higher economic growth.

Chart 4.1/4.2: Real investment (left) and export (right) forecast for Albania, cumulative changes (base index)



Bosnia and Herzegovina

According to the forecast, the impact on the economy of Bosnia and Herzegovina's regional integration is positive and considerable.

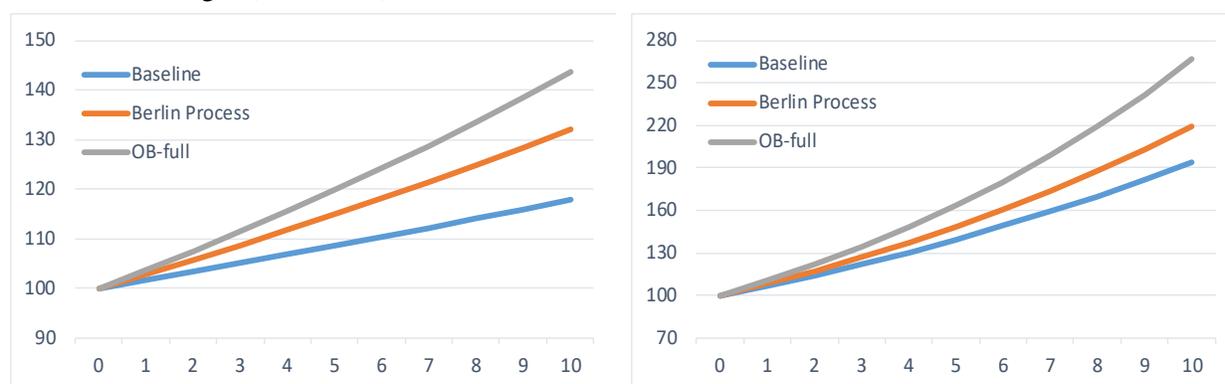
Table 5: Projected ten-year average impact per annum for Bosnia and Herzegovina, in pp

	GDP	Investment	Export	Wages	Public debt	Debt ratio
Berlin Process	0.2	1.2	1.3	-0.1	0.1	-0.4
OB - full participation	0.5	2.0	3.5	-0.3	-0.6	-4.0

Note: Data for debt ratio refers to the difference at the end of the forecasting period.

Effects are evident with respect to investment, export activity, and economic growth that would be higher if the adverse impact on wages was to be avoided. The impact is noticeable on the export side, the ratio to GDP doubling over the forecast horizon in the case of the OBI initiative with full participation of WB countries. These projected positive trends in the real sector would somewhat improve public debt developments going forward. Namely, the impulse on Bosnia and Herzegovina's economy from the OBI initiative seems to be larger in comparison to that of Berlin Process, providing that all WB countries take part.

Chart 5.1/5.2: Real investment (left) and export (right) forecast for Bosnia and Herzegovina, cumulative changes (base index)



Kosovo

As opposed to Bosnia and Herzegovina, Kosovo's economy would benefit slightly more from Berlin Process, with positive effects on investment, export and GDP being envisaged from both initiatives.

Table 6: Projected ten-year average impact per annum for Kosovo, in pp

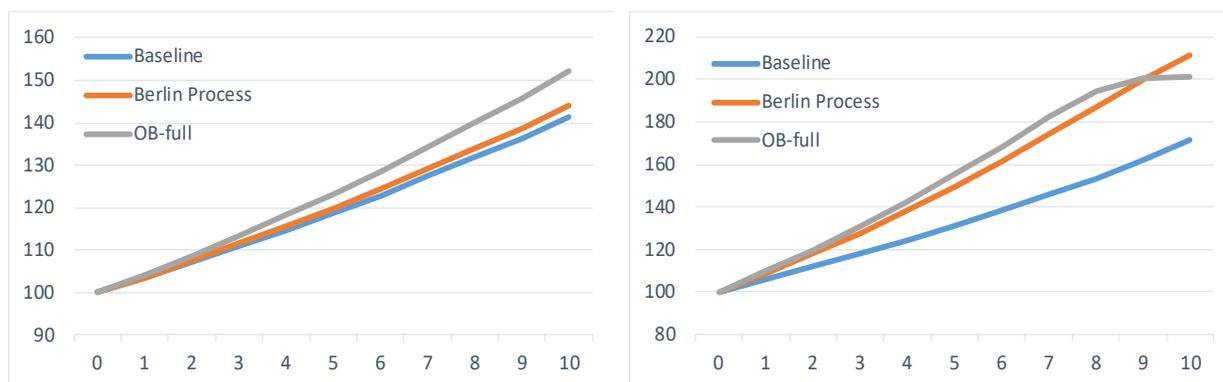
	GDP	Investment	Export	Wages	Public debt	Debt ratio
Berlin Process	0.2	0.2	2.2	-0.5	0.8	1.7
OB - full participation	0.1	0.8	1.7	-0.4	1.3	4.0

Note: Data for debt ratio refers to the difference at the end of the forecasting period.

Similar to Bosnia and Herzegovina, both initiatives have adverse impact on wages, though with a greater magnitude in the case of Kosovo. Public debt trends seem to get worse in both scenarios compared to the

baseline, somewhat more in the OBI initiative scenario, though would still remain at a low to moderate level by the end of the forecasting period.

Chart 6.1/6.2: Real investment (left) and export (right) forecast for Kosovo, cumulative changes (base index)



North Macedonia

The case of North Macedonia as well as Serbia is somewhat specific, in the sense that despite the positive impulse that different forms of regional integration have on certain areas of the economy, the effect on GDP seems to be offset by other factors.

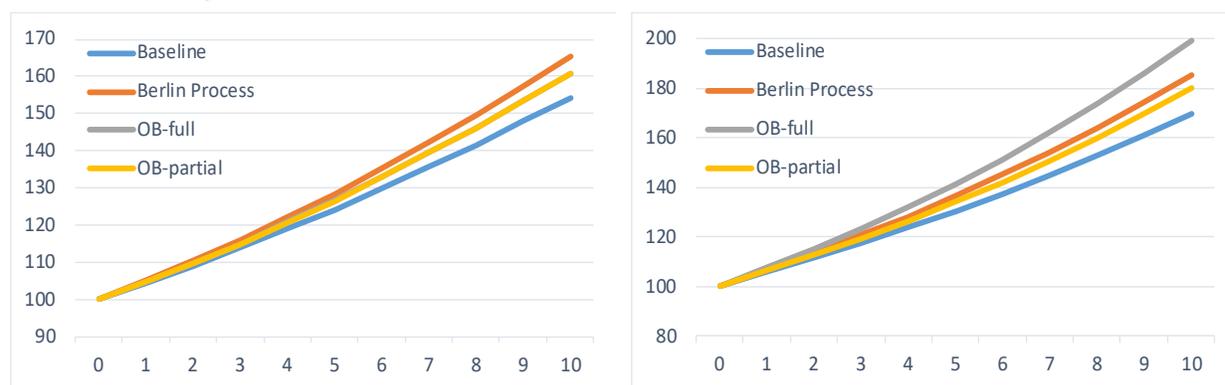
Table 7: Projected ten-year average impact per annum for North Macedonia, in pp

	GDP	Investment	Export	Wages	Public debt	Debt ratio
Berlin Process	0.0	0.7	1.0	-0.5	0.9	8.8
OB - full participation	0.0	0.4	1.7	-0.7	1.3	13.3
OB - partial participation	0.0	0.4	0.6	-0.3	0.7	7.1

Note: Data for debt ratio refers to the difference at the end of the forecasting period.

The impact of analysed scenarios is positive on investment and export activity, but negative on wages and debt developments. Macedonian export would benefit more from the OBI initiative, conditional to participation of all WB countries, which on the other hand is accompanied with a slower wage growth and a more dynamic increase of public debt. Berlin Process, which also “suffers” from these trends, would trigger higher investment growth.

Chart 7.1/7.2: Real investment (left) and export (right) forecast for North Macedonia, cumulative changes (base index)



Montenegro

Results for Montenegro show that the potential long-term impact from both regional initiatives is considerable and similar as far as GDP is concerned, stemming from more dynamic growth of export activity, and to a lesser extent wage growth, compared to the baseline. These effects are more pronounced in the OB initiative scenario, but somewhat offset by the slower growth of investment that is less noticeable in the case of Berlin Process.

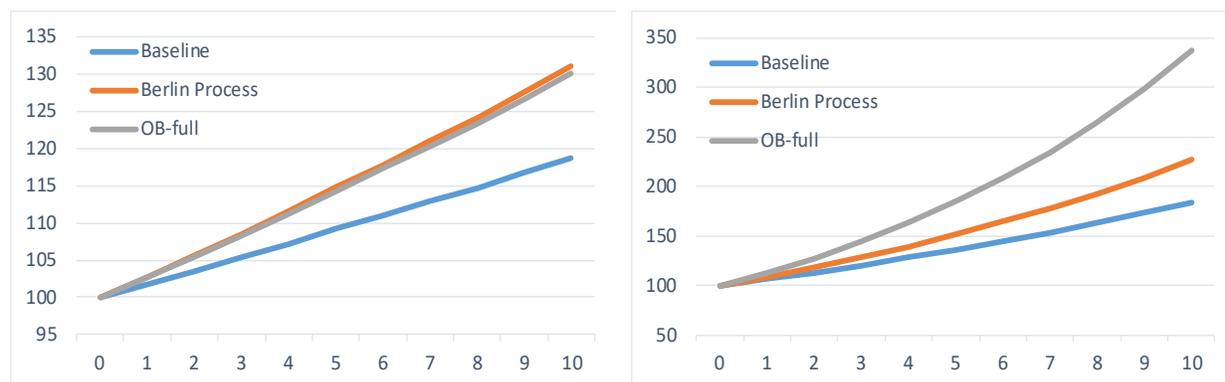
Table 8: Projected ten-year average impact per annum for Montenegro, in pp

	GDP	Investment	Export	Wages	Public debt	Debt ratio
Berlin Process	1.0	-0.4	2.3	0.1	0.9	-2.2
OB - full participation	0.9	-0.9	6.6	0.2	0.7	-2.6

Note: Data for debt ratio refers to the difference at the end of the forecasting period.

The strong influence of both initiatives on export implies significant increase of export to GDP ratio and overall trade openness over the forecast horizon. Public debt is likely to increase with a higher pace in both scenarios. As a ratio to GDP, however, the stock of debt would be lower at the end of the forecasting horizon compared to the baseline, due to the more dynamic economic growth, although still exhibiting high levels.

Chart 8.1/8.2: Real GDP (left) and export (right) forecast for Montenegro, cumulative changes (base index)



Serbia

Based on the forecast, the benefits for Serbian economy from engaging in regional initiatives are evident in the area of foreign trade and labour market, whereas investment and fiscal developments would be less favourable compared to the baseline, therefore no impact on GDP is foreseen.

Table 9: Projected ten-year average impact per annum for Serbia, in pp

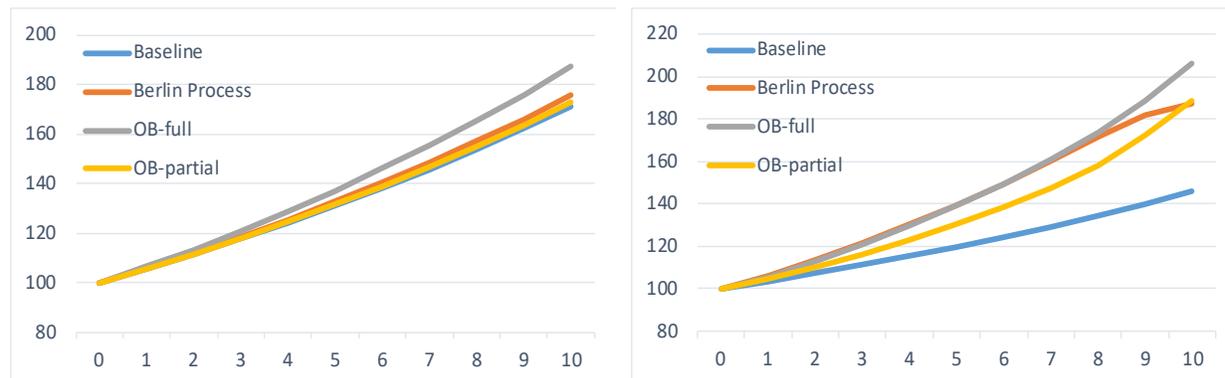
	GDP	Investment	Export	Wages	Public debt	Debt ratio
Berlin Process	0.0	-0.6	0.3	2.6	0.5	4.7
OB - full participation	0.0	-0.8	1.0	3.6	0.8	6.4
OB - partial participation	0.0	-0.4	0.1	2.7	0.4	3.6

Note: Data for debt ratio refers to the difference at the end of the forecasting period.

Obviously, the OBI initiative where all WB countries take part results in higher growth of export and wages, but also slightly faster increase of public debt and slower growth of investment. The ratio of export to GDP would be picking up, and by the end of the forecast horizon will deviate by about 10 pp compared to the baseline scenario. On the other hand, although real investment would approach 1/3 of GDP, compared to the baseline will be lower by almost 3 pp.

The impact on wages is more noticeable compared to other countries, which applies to all three scenarios, whereby in the case of OB initiative with full participation of WB countries the average real gross wage would double.

Chart 9.1/9.2: Real export (left) and wages (right) forecast for Serbia, cumulative changes (base index)



Western Balkan

Aggregated results (Tables 10.1 and 10.2) show that the economic perspectives of WB as a region would be better off if countries are involved in a certain formal regional economic cooperation, whereby effects are maximized when participation of all countries is ensured, either in the form of Berlin Process or through the OBI initiative.

Table 10.1: Projected ten-year average impact per annum for WB region, in pp (weighted¹⁰ average)

	GDP	Investment	Export	Wages	Public debt	Debt ratio
Berlin Process	0.1	0.4	0.8	0.4	0.4	2.3
OB - full participation	0.2	0.6	1.8	0.6	0.6	2.7
OB - partial participation	0.0	0.1	0.2	0.5	0.3	1.9

In spite of the positive impact that the OBI initiative with a partial participation of WB countries has on certain areas of the economy in the region, projections do not provide evidence that it will deliver higher economic growth, at least without other economic measures and policies being undertaken by countries to complement this process.

Table 10.2: Projected ten-year average impact per annum for WB region, in pp (simple average)

	GDP	Investment	Export	Wages	Public debt	Debt ratio
Berlin Process	0.3	0.6	1.3	0.3	0.5	1.5
OB - full participation	0.3	0.9	2.6	0.4	0.5	2.2
OB - partial participation	0.0	0.2	0.2	0.4	0.2	1.4

On the other hand, providing that all WB countries participate in the OBI initiative, projections show that economic growth would pick up the pace, as firmer ground for growth of export and investment is warranted. Overall wage gains would not be much different, whereas public debt is envisaged to increase slightly more compared to the baseline.

Based on the forecast, Berlin Process has the same advantages, though the overall regional impact would be somewhat less pronounced compared to the scenario of full participation within the OBI initiative, despite certain differences observed on a country level.

Conclusion and recommendations

Regardless of certain differences, the OBI initiative and the Berlin Process essentially represent a similar idea and have rather similar objectives and potential economic impact on WB region. Hence, it is not economically rational to have them simultaneously operating as somewhat competing mechanisms.

¹⁰ Weighted average forecast takes into account the differences in the levels of observed macroeconomic indicators among countries, whereas with the simple average procedure they are treated equally.

WB as a region would have better economic perspectives if countries are part of a certain regional integration, whereby effects are maximized when participation of all countries is ensured, either in the form of Berlin Process or through the OBI initiative.

Providing that all WB countries participate in the OBI initiative, forecast shows that economic growth would pick up the pace, as firmer ground for growth of export and investment is warranted. Berlin Process has the same advantages, though the overall regional impact would be somewhat less pronounced compared to the scenario of full participation within the OB initiative, despite certain differences observed on a country level.

- **Export** is obviously an area that all WB countries would be benefiting from accelerating the integration process of the region, preferably an all-inclusive one, whether it is the OBI initiative or the Berlin Process.
 - **Recommendation:** However, for this impact to be catalysed and felt more on the overall economic activity, policies should also focus on lowering the import-content of export in sectors where that is achievable, improving backward linkages of foreign investment projects with local companies, which would increase their productivity and offer an important channel for their integration into global value chains and foreign market, attracting higher-quality FDI, etc.
- **Wages**, although would speed up within WB region in general due to the integration process, there are countries (Bosnia and Herzegovina, Kosovo and North Macedonia) that face slower pace of growth compared to the baseline.
 - **Recommendation:** Therefore, countries would benefit from complementary measures in the labour market aimed at enhancing employment policies for youth, addressing barriers that limit labour force participation (especially among women).
- **Fiscal sector**, observed through the prism of public debt developments needs attention too, in view of obtained results from the forecast. Although debt would not be worsening substantially on a regional level, and some countries would see some improvement (e.g., Albania and Bosnia and Herzegovina), there are countries whose initial level is high on a regional context (e.g., Montenegro) and the integration process would further aggravate the situation (e.g., North Macedonia and Serbia).
 - **Recommendation:** Therefore, fiscal consolidation measures that would boost revenues and/or rationalise and streamline spending could alleviate the pressure, such as activities that gradually improve tax compliance, broaden the tax base, and reduce the informal economy, as well as measures to improve targeting of social spending and subsidies. Furthermore, enhancing public investment execution, given bottlenecks to implementing major capital projects, would improve the investment outlook, particularly with respect to the Berlin Process impact.
- **Overall recommendation:** Results that are presented should be seen also as an indication that attention of policy makers should not drift from the structural reform agenda as well. On the contrary, in order to unlock further economic growth countries in parallel should accelerate the pace of the reforms and address key structural challenges. Therefore, reforms in the area of education, healthcare and social protection, labour market, business environment, energy and green transition would all be supportive of higher but also more sustainable and inclusive economic growth.

The next table presents summary of the results of three scenarios for the WB-6 countries.

Table. Summary of results of three scenarios for the WB-6 countries

	<u>Berlin process; OB – full participation; OB – partial participation</u>	<u>Notes</u>																												
AL	<p>Albania would benefit from any integration process in the region, either via Berlin Process or the OB initiative, with full or partial integration. Participation of all WB countries in the OB initiative, however, would have more sizable impact on the Albanian economy. Positive effects are foreseen in the area of investment, exports, and overall economic activity, as well as in the fiscal area, with public debt potentially growing with a slower pace compared to the baseline scenario. Wages, on the other hand, is envisaged to grow with a similar intensity as in the baseline, on average.</p> <p>Table: Projected ten-year average impact per annum for Albania, in pp</p> <table border="1"> <thead> <tr> <th></th> <th>GDP</th> <th>Investment</th> <th>Export</th> <th>Wages</th> <th>Public debt</th> <th>Debt ratio</th> </tr> </thead> <tbody> <tr> <td>Berlin Process</td> <td>0.2</td> <td>2.3</td> <td>1.0</td> <td>0.0</td> <td>-0.3</td> <td>-3.6</td> </tr> <tr> <td>OB - full participation</td> <td>0.2</td> <td>3.8</td> <td>1.4</td> <td>0.1</td> <td>-0.3</td> <td>-4.1</td> </tr> <tr> <td>OB - partial participation</td> <td>0.1</td> <td>1.2</td> <td>0.6</td> <td>0.0</td> <td>-0.2</td> <td>-2.2</td> </tr> </tbody> </table> <p>Note: Data for debt ratio refers to the difference at the end of the forecasting period.</p>		GDP	Investment	Export	Wages	Public debt	Debt ratio	Berlin Process	0.2	2.3	1.0	0.0	-0.3	-3.6	OB - full participation	0.2	3.8	1.4	0.1	-0.3	-4.1	OB - partial participation	0.1	1.2	0.6	0.0	-0.2	-2.2	<p>Albania would benefit from any integration process in the region, either via Berlin Process or the OB initiative, with full or partial integration. OBI initiative (full participation of WB countries) contributes for more dynamic growth of investment and export compared to the case of Berlin Process, the share to GDP potentially increasing by about 15 pp and 22 pp respectively over the forecast horizon, though not being translated into a higher economic growth.</p>
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KS	<p>As opposed to Bosnia and Herzegovina, Kosovo's economy would benefit slightly more from Berlin Process, with positive effects on investment, export and GDP being envisaged from both initiatives.</p> <p>Table: Projected ten-year average impact per annum for Kosovo, in pp</p> <table border="1"> <thead> <tr> <th></th> <th>GDP</th> <th>Investment</th> <th>Export</th> <th>Wages</th> <th>Public debt</th> <th>Debt ratio</th> </tr> </thead> <tbody> <tr> <td>Berlin Process</td> <td>0.2</td> <td>0.2</td> <td>2.2</td> <td>-0.5</td> <td>0.8</td> <td>1.7</td> </tr> <tr> <td>OB - full participation</td> <td>0.1</td> <td>0.8</td> <td>1.7</td> <td>-0.4</td> <td>1.3</td> <td>4.0</td> </tr> </tbody> </table> <p>Note: Data for debt ratio refers to the difference at the end of the forecasting period.</p>		GDP	Investment	Export	Wages	Public debt	Debt ratio	Berlin Process	0.2	0.2	2.2	-0.5	0.8	1.7	OB - full participation	0.1	0.8	1.7	-0.4	1.3	4.0	<p>Similar to Bosnia and Herzegovina, both initiatives have adverse impact on wages, though with a greater magnitude in the case of Kosovo. Public debt trends seem to get worse in both scenarios compared to the baseline, somewhat more in the OBI initiative scenario, though would still remain at a low to moderate level by the end of the forecasting period.</p>							
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The case of North Macedonia as well as Serbia is somewhat specific, in the sense that despite the positive impulse that different forms of regional integration have on certain areas of the economy, the effect on GDP seems to be offset by other factors.

Table: Projected ten-year average impact per annum for North Macedonia, in pp

	GDP	Investment	Export	Wages	Public debt	Debt ratio
Berlin Process	0.0	0.7	1.0	-0.5	0.9	8.8
OB - full participation	0.0	0.4	1.7	-0.7	1.3	13.3
OB - partial participation	0.0	0.4	0.6	-0.3	0.7	7.1

Note: Data for debt ratio refers to the difference at the end of the forecasting period.

The impact of analysed scenarios is positive on investment and export activity, but negative on wages and debt developments. Macedonian export would benefit more from the OBI initiative, conditional to participation of all WB countries, which on the other hand is accompanied with a slower wage growth and a more dynamic increase of public debt. Berlin Process, which also “suffers” from these trends, would trigger higher investment growth.

Results for Montenegro show that the potential long-term impact from both regional initiatives is considerable and similar as far as GDP is concerned, stemming from more dynamic growth of export activity, and to a lesser extent wage growth, compared to the baseline. These effects are more pronounced in the OB initiative scenario, but somewhat offset by the slower growth of investment that is less noticeable in the case of Berlin Process.

Table: Projected ten-year average impact per annum for Montenegro, in pp

	GDP	Investment	Export	Wages	Public debt	Debt ratio
Berlin Process	1.0	-0.4	2.3	0.1	0.9	-2.2
OB - full participation	0.9	-0.9	6.6	0.2	0.7	-2.6

Note: Data for debt ratio refers to the difference at the end of the forecasting period.

The strong influence of both initiatives on export implies significant increase of export to GDP ratio and overall trade openness over the forecast horizon. Public debt is likely to increase with a higher pace in both scenarios. As a ratio to GDP, however, the stock of debt would be lower at the end of the forecasting horizon compared to the baseline, due to the more dynamic economic growth, although still exhibiting high levels.

Based on the forecast, the benefits for Serbian economy from engaging in regional initiatives are evident in the area of foreign trade and labour market, whereas investment and fiscal developments would be less favourable compared to the baseline, therefore no impact on GDP is foreseen.

Table: Projected ten-year average impact per annum for Serbia, in pp

	GDP	Investment	Export	Wages	Public debt	Debt ratio
Berlin Process	0.0	-0.6	0.3	2.6	0.5	4.7
OB - full participation	0.0	-0.8	1.0	3.6	0.8	6.4
OB - partial participation	0.0	-0.4	0.1	2.7	0.4	3.6

Note: Data for debt ratio refers to the difference at the end of the forecasting period.

Obviously, the OBI initiative where all WB countries take part results in higher growth of export and wages, but also slightly faster increase of public debt and slower growth of investment. The ratio of export to GDP would be picking up, and by the end of the forecast horizon will deviate by about 10 pp compared to the baseline scenario. On the other hand, although real investment would approach 1/3 of GDP, compared to the baseline will be lower by almost 3 pp. The impact on wages is more noticeable compared to other countries, which applies to all three scenarios, whereby in the case of OB initiative with full participation of WB countries the average real gross wage would double.

Aggregated results show that the economic perspectives of WB as a region would be better off if countries are involved in a certain formal regional economic cooperation, whereby effects are maximized when participation of all countries is ensured, either in the form of Berlin Process or through the OBI initiative.

In spite of the positive impact that the OBI initiative with a partial participation of WB countries has on certain areas of the economy in the region, projections do not provide evidence that it will deliver higher economic growth, at least without other economic measures and policies being undertaken by countries to complement this process.

MK

MN

SRB

WB 6 region

Table: Projected ten-year average impact per annum for WB region, in pp (weighted¹¹ average)

	GDP	Investment	Export	Wages	Public debt	Debt ratio
Berlin Process	0.1	0.4	0.8	0.4	0.4	2.3
OB - full participation	0.2	0.6	1.8	0.6	0.6	2.7
OB - partial participation	0.0	0.1	0.2	0.5	0.3	1.9

Note: Data for debt ratio refers to the difference at the end of the forecasting period.

On the other hand, providing that all WB countries participate in the OBI initiative, projections show that economic growth would pick up the pace, as firmer ground for growth of export and investment is warranted. Overall wage gains would not be much different, whereas public debt is envisaged to increase slightly more compared to the baseline.

Based on the forecast, Berlin Process has the same advantages, though the overall regional impact would be somewhat less pronounced compared to the scenario of full participation within the OBI initiative, despite certain differences observed on a country level.

¹¹ Weighted average forecast takes into account the differences in the levels of observed macroeconomic indicators among countries, whereas with the simple average procedure they are treated equally.

Annex. Data

In order to build and estimate the empirical models, quarterly time series of macroeconomic indicators are used, covering real, external and fiscal sector, as well as labour market of each economy.

The time span for estimating the econometric models includes the period 2008 – 2022, third quarter, i.e. 59 observations. Missing quarterly data within this period, with no annual data available, has been interpolated using the Catmull-Rom spline technique¹², found to be most adequate for the data on hand. For periods where quarterly data is missing, but annual data is available, missing observations have been extrapolated using past trends or shares/proportions of quarterly data. In addition, quarterly time series that exhibit seasonal pattern have been seasonally adjusted using X-12 ARIMA procedure¹³.

A description of the variables included in the dataset, sources of data and information on which observations have been interpolated/extrapolated can be found in the Annex (A1), whereas Table 1 (Model selection section) presents information on which time series have been seasonally adjusted.

The quality of data and missing data are some of the challenges in estimating the benefits of regional integration of WB countries. Data is gathered, primarily, from Eurostat, an international database that provides a high or satisfactory degree of comparability between countries, and the missing one has been collected from national statistical offices, central banks and/or ministry of finances. In certain limited cases, International Monetary Fund (IMF) and International Labour Organization databases have been used. This approach is followed for both endogenous and exogenous variables.

The set of endogenous variables include real values of GDP, export of goods and services, investment (gross fixed capital formation) and gross wages¹⁴, and public debt, whereas the set of exogenous variables include intraregional trade, regional FDI, and proxies for labour mobility indicator and regional investment projects, as well as real GDP of EU.¹⁵ Nominal GDP of WB countries has also been used to derive the GDP deflator, as well as inflation rate from which a base index was generated in order to calculate real wages.

Table 11: Properties of the variables

Variable	Seasonal component	Unit root (non-stationary)					
		AL	BH	KS	MK	MN	SR
GDP	yes	no	yes	no	no	no	yes
Investment	yes	no	yes	no	no	yes	yes
Exports	yes	no	yes	yes	no	no	yes
Wages	yes	yes	yes	no	yes	no	no
Public debt	no*	yes	no	no**	yes	no	yes
Labour mobility proxy	yes	no	yes	yes	yes	yes	yes
Regional projects proxy	ma(4)				yes		

¹² For details, see Twigg (2003).

¹³ For details, see Linz et al. (2019).

¹⁴ Though net wages is deemed to be a more appropriate indication of earnings (take-home pay), due to lack of data wages in gross terms were used.

¹⁵ In addition to these variables, data on unemployment rate and budget balance was gathered before the decision on endogenous variables was made, which is based on the results obtained.

Intraregional trade	yes	yes
Regional FDI	no	no
EU GDP	yes	no

* Except for Kosovo's data; ** Ambiguous results

Note: Stationary properties have been examined using three tests, i.e.

Augmented Dickey-Fuller, Phillips-Perron, and Kwiatkowski-Phillips-Schmidt-Shin

Graphical visualization (percentage changes on annual basis)¹⁶ of the endogenous variables for each WB country in the last four years are presented in the Annex, while their descriptive statistics is shown on Table 12.

Exogenous variables

While selecting the set of endogenous variables was somewhat straightforward, defining or finding the right proxy, collection of data and interpretation of exogenous variables has been a challenging task.

The concept of exogenous variable is fundamental in structural equation modelling. Exogenous variables are those with no causal links leading to them from other variables in the model, i.e. they are not affected by other variables in the system, and they are used for setting arbitrary external conditions, and not in achieving a more realistic model behaviour.

Being part of an economic regional integration is likely to improve certain economic aspects of member countries and the region itself. When countries agree on integration, trade barriers fall and economic cooperation increases, leading to higher trade and foreign investment, improved labour and capital movement, and projects of regional importance, depending on the level of integration. Therefore, these are areas for which variables have been defined and proxies used, and for which assumptions are made going forward that entail providing certain path of the exogenous variables for the forecast horizon included in the models. These variables are (not exclusively) foreign trade between countries in the region, FDI inflow at regional level, a proxy for regional investment projects and a country specific proxy for labour mobility. In addition, real GDP of EU is introduced as exogenous variable, given its relevance for WB countries foreign trade and overall economic performance. Chart 1 presents the share of export of goods to EU for each WB country.

Chart 2.1/2.2: Intraregional trade (left) and FDI at regional level (right)



Source: Own calculations based on data from Eurostat and national central banks.

¹⁶ Calculated from the seasonally adjusted data.

As regards the proxy for labour mobility and for regional projects, balance of payment data has been used to generate time series for both indicators.¹⁷ For the labour mobility indicator, data on compensation of employees working abroad (primary income) and on workers' remittances (secondary income) has been used, whereas for the investment project indicator, data on official transfers from abroad (secondary income) has been utilized and aggregated at a regional level, after which simple moving average with four observations was generated.

Chart 3: Regional project proxy (EUR million)



Source: Own calculations based on data from national central banks.

In order to make forecast that disentangle the benefits of both initiatives, assumptions regarding the exogenous variables will differ, based on the expert judgment, as studies made so far have not provided suitable quantitative estimates.

¹⁷ For more details on components and their definition, see Balance of Payments and International Investment Position Manual (BPM6).

Annex. Methodology and techniques

Methodology

As it was mentioned previously, the first step is to do a separate baseline long-term forecast for each WB country for the selected macroeconomic indicators. In order to do so, country-specific models are built and estimated using the Bayesian approach, which has advantages over classical econometric techniques when it comes to short time series with a large number of structural breaks, which is common for WB countries.

Vector Autoregression (VAR) methods are frequently used in the study of macroeconomic data. VARs allow us to capture dynamic interrelationships among a set of endogenous variables. A general representation of VAR model with p lags can be written as:

$$y_t = \delta_0 + \sum_{j=1}^p \Pi_j y_{t-j} + \gamma Z_t + \varepsilon_t \quad (1)$$

where

- y_t is a vector of endogenous variables,
- δ_0 is a vector of intercept coefficients,
- Π_j are matrices of lag coefficients,
- Z_t is a vector of exogenous variables
- γ is a matrix of exogenous coefficients
- ε_t is a vector of errors, whereby we generally assume that $\varepsilon_t \sim N(0, \Sigma)$, i.e. $E(\varepsilon_t) = 0$ and time-invariant, and positive definite variance-covariance matrix, $cov(\varepsilon_t) = E(\varepsilon_t \varepsilon_t') = \Sigma$.

In a more compact notation, we can define the coefficients as $B = (\delta_0, \gamma, \Pi_1 \dots \Pi_p)'$ and X as comprising exogenous variables Z_t and lagged endogenous variables ($y_{t-1} \dots y_{t-p}$) so that $Y = XB + \varepsilon$. This model can be rewritten in the following form:

$$y = (I_n \otimes X)\beta + \varepsilon \quad (2)$$

where $y = vec(Y)$, $\beta = vec(B)$, and $\varepsilon = vec(\varepsilon)$.

Our aim is to estimate the coefficients (β) of the model along with the error variance-covariance matrix (Σ). Since VARs usually require estimation of a large number of coefficients, respectively $n(np + 1)$, n being the number of variables and p the number of lags, over-parameterization of VAR models is often an issue, having only few observations to estimate the parameters of the model. This is known as the curse of dimensionality.

One approach for solving this issue is, so called shrinkage, where restrictions are imposed on parameters. Bayesian VAR (BVAR) method is a popular approach for achieving shrinkage, since Bayesian priors provide a logical and consistent way of imposing parameter restrictions.

In Bayesian econometrics, anything about which we are uncertain, including the true value of a parameter, can be thought of as being a random variable to which can be assigned a probability distribution. We obtain probability distributions, specifically the posterior distributions, by combining our prior knowledge (prior distribution) with the information in the data (likelihood function). The prior is the external distributional information based on researcher's belief on parameters of interest.

Denote the parameters of interest in the model by $\theta = (\beta, \Sigma)$ and the data by y . Let us say that the prior distribution is $\pi(\theta)$ and the likelihood is $l(y|\theta)$, then the posterior distribution $\pi(\theta|y)$ is the distribution of θ given the data y , and may be derived by

$$\pi(\theta|y) = \frac{\pi(\theta) l(y|\theta)}{\int \pi(\theta) l(y|\theta) d\theta} \quad (3)$$

Note that the denominator in (3) is a normalizing constant that has no randomness, and thus the posterior is proportional to the product of the likelihood and the prior.

$$\pi(\theta|y) \propto \pi(\theta) l(y|\theta) \quad (4)$$

Thus, a proper Bayesian analysis will incorporate the prior information to strengthen inferences about the true value of the parameters. Priors are successful because they effectively reduce the estimation error, while generating only relatively small biases in the estimates of the parameters (Giannone et al., 2015). An obvious argument against the use of prior distributions is that a prior is intrinsically subjective.

There are different types of priors that have been popular in the BVAR literature, such as:

- Minnesota/Litterman prior (a normal prior on β with fixed Σ),
- Normal-flat prior (a normal prior on β that is independent of the distribution for Σ),
- Normal-Wishart prior (a normal prior on β and a Wishart prior on Σ) and independent normal-Wishart prior,
- Sims-Zha normal-flat/normal-Wishart prior (a structural VAR equivalent of the normal-flat/normal-Wishart prior),
- Giannone, Lenza and Primiceri prior (a prior that treats the hyper-parameters as ones that can be selected through an optimization procedure), etc.

For estimation and forecasting purposes we use the Minnesota prior, whereby in the model selection phase we use the default values of hyper-parameters and those proposed by Canova (2007).

Namely, Litterman (1986) specified the prior by appealing to three statistical regularities of macroeconomic time series:

- macroeconomic time series typically trend, and it is often found that these variables contain a stochastic trend (or unit root),
- more recent values of a series usually contain more information about the current value of the series than past values, and
- past values of the variable itself usually contain more information about its current value of the series than past values of other variables.

Minnesota prior is based on the assumption that the variance-covariance matrix of errors (Σ) is known, therefore it has been estimated using univariate autoregressive estimator.

The requirements of the Minnesota prior are expressed formally by introducing a vector of hyper-parameters $\Lambda = (\mu_1, \lambda_1, \lambda_2, \lambda_3, \lambda_4)$. In essence, this cuts down the number of estimated parameters in the VAR from $n(np + 1)$ to the number of hyper-parameters. Note that this will essentially be true for a VAR of any dimension n and p .

To explain the Minnesota prior note from (1) that the explanatory variables in the VAR in any equation can be divided into own lags of the dependent variable, lags of the other dependent variables, and any exogenous variables, including the constant (intercept) term.

The Minnesota prior assumes that $\beta \sim N(\beta_0, V)$, where β_0 is set to a vector of nearly all zeros, with only the elements corresponding to the coefficient of a variable's own first lag being non-zero. Those own lag elements are generally set to 1 or 0, depending on the form of the variable, as specified by the hyper-parameter μ_1 . V is assumed to be a diagonal matrix with its diagonal elements corresponding to the j -th endogenous variables in the i -th equation at lag l

$$V_{ij}^l = \begin{cases} \left(\frac{\lambda_1}{l^{\lambda_3}}\right)^2 & \text{for } (i = j) \\ \left(\frac{\lambda_1 \lambda_2 \sigma_i}{l^{\lambda_3} \sigma_j}\right)^2 & \text{for } (i \neq j) \end{cases} \quad (5)$$

where σ_j is the square root of the corresponding diagonal element of Σ . The elements of V corresponding to exogenous variables (including the constant) are set to infinity (i.e. no information about the exogenous variables is contained within the prior).

This prior setting simplifies the complicated choice of specifying all the elements of V down to choosing three scalars λ_1 , λ_2 and λ_3 . The first two scalars, λ_1 and λ_2 are overall tightness and relative cross-variable weight, respectively. λ_3 captures the lag decay that, as lag length increases, coefficients are increasingly shrunk towards zero.

Note that changes in these hyper-parameter scalar values may lead to smaller (or larger) variances of coefficients, which is called tightening (or loosening) the prior. The exact choice of values for these three scalars depends on the empirical application. Litterman (1986) provides discussion of these choices.

A primary advantage of the Minnesota prior is that it leads to simple posterior inference. However, the prior does not provide a full Bayesian treatment of Σ as an unknown, so it ignores uncertainty in this parameter.

There are also different approaches to select hyper-parameters, such as: choosing the ones maximizing the (log) marginal likelihood (Carriero et al., 2011), treating hyper-parameters as random, assuming a prior distribution and then estimating them with hierarchical models (Giannone et al., 2015), running a forecast competition and choosing the ones maximizing forecasting performance of the model (Doan et al., 1984) etc.

Model selection

With regard to the form of the variables, models with data in levels and models with quarterly growth rates have been considered. This is another issue from an empirical perspective, as there has not been much effort in the BVAR forecasting literature to compare specifications in levels versus differences. It is in principle unclear whether transforming variables into their growth rates can enhance the forecasting performance of the BVAR. The specification in levels can better take into account the existence of long-run (cointegrating) relationships across the variables, which are omitted in a VAR in differences. On the other hand, Clements and Hendry (1996) show that in a classical framework differencing can improve the forecasting performance in the presence of instability. Following the Litterman (1986) tradition, some BVAR forecasting papers use models with variables in levels or log levels, while others use models in differences or growth rates.

As it was mentioned, two sets of hyper-parameters have been used in the estimation phase, Minnesota default values and those suggested by Canova. Given that both forms of variables were considered, it implied different values being assigned to the hyper-parameter μ_1 , i.e. 1 for models with data in levels and 0 for models with quarterly growth rates, which is relevant for both default and alternative specification. The difference between these two sets of hyper-parameters is for scalars λ_1 and λ_2 , with default values being equal to 0.1 and 0.99 respectively, whereas alternative (Canova) values equalling 0.2 and 0.5 respectively. λ_3 and λ_4 are set to 1 and 10^5 respectively. With respect to the lag length for the endogenous variables, specifications with lags from one to four have been estimated. Therefore, for each country 16 models were estimated. The specification of the model for a particular country is determined based on the in-sample forecast evaluation using Root Mean Squared Error (RMSE) for four quarters ahead as a selection criterion.

$$RMSE_h^m = \sqrt{\frac{\sum_{t=T_0}^{T_1} (y_{t,t+h}^m - y_{t+h})^2}{T_1 - T_0 + 1}} \quad (6)$$

where h represents the quarter (4) for which the forecast is evaluated, m is the model to compute the forecast of the endogenous variable $y_{t,t+h}^m$, and y_{t+h} is the actual value of the variable. Even though the models are estimated using data in levels and quarterly growth rates, we report the forecast and evaluation results in the form of annual growth rates. T_0 and T_1 are the start and end date of the evaluation period.

For this purpose, we use each BVAR model to produce in-sample forecasts for four quarters ahead. The first estimation sample is from first quarter of 2008¹⁸ to fourth quarter of 2017 and the period ranging from first quarter of 2018 to third quarter of 2022 is allocated for forecast evaluation. Then, the estimation sample size is extended by one quarter with starting quarter being kept fixed (first quarter of 2008 to first quarter of 2018) and the models are re-estimated, and new four quarter ahead forecast are obtained until third quarter of 2022, thus adopting expanding window strategy¹⁹. This leads to total of 15 iterations.

RMSE results of endogenous variables for each specification and country are presented in the Annex, as well as charts with in-sample forecast performance of variables from the selected specification.

Table 12: Model specifications

Country	Variable	Form	Leg length	Prior
Albania	Investment	level	1	Canova
	Others	% change	4	
Bosnia and Herzegovina	GDP, Investment, Wages	% change	1	Canova
	Export, Debt		4	Default
Kosovo	Export	level	4	Canova
	Others	% change		
N. Macedonia	All	% change	2	Canova
Montenegro	All	% change	3	Default
Serbia	GDP, Investment, Debt	% change	4	Canova
	Export		3	
	Wages	level		

Model specification for each country is selected by looking at average (simple and weighted²⁰) values of RMSE of endogenous variables for all examined options (different prior, lag length and form of variables). Whenever there was a significant and important difference between the lowest RMSE for each endogenous

¹⁸ Second quarter of 2008 for specifications with quarterly growth rates.

¹⁹ Another strategy that could be utilized is rolling window where the number of observations in the estimation sample does not change but it moves forward by one observation. Although it has certain advantages over expanding window strategy, due to the relatively short time series this strategy is not suitable.

²⁰ Weighted average takes into account RMSE results for each variable in comparison to the others, thus variables with lower RMSE get larger weights and vice versa.

variable within examined options and the RMSE of the “best” specification based on average results, adjustments have been made. Table 2 presents the selected specification(s) for each country. Although it is not the best solution, it is considered to be the most appropriate, given the properties of the time series and obtained RMSE results. Furthermore, in certain limited cases, the intercept has been calibrated in order to adjust the level of some variables. Calibrated coefficients have been derived within the baseline scenario and the same ones have been applied in the analysed alternative scenarios.

Annex. Variables and sources used

Description of variables and sources used

Variable	Measure (default)	Albania	Bosnia and Herzegovina	Kosovo	North Macedonia	Montenegro	Serbia
GDP	Chain linked volumes (2010), million euro	Eurostat (see Notes)	Eurostat	Eurostat (see Notes)	Eurostat (see Notes)	Eurostat	Eurostat
Export of goods and services							
Gross fixed capital formation							
Wages	Real gross average monthly wage, euro (see Note)	National statistical office and own calculations (see Notes)	National statistical office	Own calculations based on the statistical office data (see Notes)	National statistical office (see Notes)	National statistical office and own calculations (see Notes)	National statistical office
Public debt	Million euro	Ministry of Finance and own calculations (see Notes)	Ministry of Finance	Ministry of Finance and own calculations (see Notes)	Ministry of Finance	Ministry of Finance and own calculations (see Notes)	Ministry of Finance and own calculations (see Notes)
Labour mobility proxy	Compensation of employees and workers' remittances (credit), mil. euro	Bank of Albania	Central Bank	Central Bank (see Notes)	National Bank	Central Bank	National Bank
Intraregional trade	Million euro	Own calculations from Eurostat database					
Regional inward FDI	Million euro	Own calculations based on data from national central banks					

Regional projects proxy	Official transfers (credit), mil. euro	
EU(27) GDP	Chain linked volumes (2010), million euro, Eurostat	

Note on wages variable: Data in nominal terms was collected from national statistical offices as it is shown in the table, and converted to euros (except for Kosovo and Montenegro). Real values, being expressed in 2010 prices were calculated using inflation data after base indices (2010=100) were generated.

Notes for Albania: Quarterly data for GDP and its components for 2008 is extrapolated using the calculated annual figures and shares based on quarterly data for the period 2009-21. Quarterly data for wages for the period 2008-13 is extrapolated using the annual figures and proportions based on quarterly data for the period 2014-21. Quarterly data for public debt for the period 2008-10 is interpolated using annual data.

Notes for Kosovo: Quarterly data for GDP and its components for the period 2008-09 is extrapolated using the calculated annual figures from the national statistical office and shares based on quarterly data for the period 2010-21. Data for wages is interpolated using annual data and proportions based on household consumption quarterly data, as well as growth rates. Quarterly data for public debt for the period 2008-12 is interpolated using annual data (IMF for 2008). Quarterly data for 2008 for inward FDI, labour mobility proxy and regional projects proxy is extrapolated using the annual figures and shares based on quarterly data for the period 2009-21.

Notes for North Macedonia: Data for gross fixed capital formation refers to gross capital formation. Wage data for 2018 is adjusted because of methodological changes made in 2009.

Notes for Montenegro: Quarterly data for wages for the period 2008-10 is extrapolated using the annual figures and proportions based on quarterly data for the period 2011-21. Quarterly data for the period 2008-09 for inward FDI is extrapolated using the annual figures and shares based on quarterly data for the period 2009-21. Data for public debt for the first and second quarter of 2008 is interpolated.

Notes for Serbia: Quarterly data for public debt for the period 2008-11 is interpolated using annual data.

Year-on-year growth evaluation statistics of each specification, RMSE for 4 quarter ahead

NOTE: Figures in boxes indicate which specifications are used in the forecasting process.

A2.1: Albania

	Minnesota default								Canova								Min.	Dif.
	Level				Percentage change				Level				Percentage change					
	L-1	L-2	L-3	L-4	L-1	L-2	L-3	L-4	L-1	L-2	L-3	L-4	L-1	L-2	L-3	L-4		
GDP	6.5	5.7	5.0	4.7	7.7	7.5	7.4	4.4	5.9	4.7	3.9	3.5	7.7	7.5	7.4	4.5	3.5	1.0
Investment	16.6	17.9	21.5	20.5	21.7	22.3	19.5	16.0	12.1	12.8	14.1	13.6	22.1	22.4	19.8	15.8	12.1	3.7
Export	50.8	48.1	42.8	44.0	25.8	25.0	22.5	22.1	31.1	26.8	22.6	23.2	26.7	25.5	22.8	21.9	21.9	0.0
Wages (1)²¹	6.9	6.9	7.3	7.3	3.5	3.5	3.4	3.5	6.7	6.7	7.2	7.2	3.5	3.5	3.4	3.5	3.4	0.0
Debt (1)	11.6	11.5	11.9	11.6	6.2	6.3	6.4	6.7	11.1	10.9	11.4	11.1	5.9	6.0	6.0	6.3	5.9	0.4
Average (av.)	18.5	18.0	17.7	17.6	13.0	12.9	11.9	10.5	13.4	12.4	11.8	11.7	13.2	13.0	11.9	10.4		
Weighted av.	11.3	11.0	11.0	10.8	8.4	8.4	7.9	6.7	9.3	8.7	8.6	8.4	8.4	8.4	7.9	6.7		

A2.2: Bosnia and Herzegovina

	Minnesota default								Canova								Min.	Dif.
	Level				Percentage change				Level				Percentage change					
	L-1	L-2	L-3	L-4	L-1	L-2	L-3	L-4	L-1	L-2	L-3	L-4	L-1	L-2	L-3	L-4		
GDP	3.7	3.6	4.0	4.9	2.7	2.5	2.4	3.5	3.0	3.1	3.4	4.0	2.7	2.6	2.6	3.6	2.4	0.2
Investment	16.8	15.2	18.7	18.2	10.4	10.9	13.5	14.6	15.0	13.8	16.1	14.9	9.7	10.2	12.5	13.6	9.7	0.5
Export	12.9	12.9	12.5	13.3	8.3	8.1	8.5	6.9	8.5	8.7	8.0	8.0	8.3	7.8	8.2	7.0	6.9	0.9
Wages (1)	4.1	4.2	4.7	5.6	2.8	2.9	3.0	4.2	4.4	4.6	5.3	6.6	2.7	2.8	2.9	4.3	2.7	0.1
Debt	6.2	6.7	7.8	8.7	8.5	7.5	8.1	5.8	6.1	6.4	7.4	8.2	8.1	6.8	7.3	6.0	5.8	1.0
Average (av.)	8.7	8.5	9.5	10.2	6.5	6.4	7.1	7.0	7.4	7.3	8.0	8.3	6.3	6.0	6.7	6.9		

²¹ (1) indicates that EU GDP variable is with one lag in that specification.

Weighted av.	6.4	6.4	7.1	7.9	5.0	4.8	5.1	5.4	5.6	5.6	6.2	6.8	4.8	4.6	4.9	5.4
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A2.3: Kosovo

	Minnesota default								Canova								Min.	Dif.
	Level				Percentage change				Level				Percentage change					
	L-1	L-2	L-3	L-4	L-1	L-2	L-3	L-4	L-1	L-2	L-3	L-4	L-1	L-2	L-3	L-4		
GDP	10.9	9.5	8.8	8.6	5.5	5.5	5.1	4.8	10.9	9.7	9.0	8.5	5.7	5.6	5.2	4.7	4.7	0.0
Investment	23.3	21.5	21.3	21.0	18.1	17.0	17.4	19.5	20.1	18.6	18.9	18.5	17.6	16.2	16.1	17.6	16.1	1.5
Export (1)	50.9	50.1	47.9	49.0	41.7	42.6	41.4	42.9	35.3	33.6	29.7	28.3	41.4	41.7	40.2	40.2	28.3	12.0
Wages	9.5	8.8	8.2	8.8	6.5	6.9	6.6	6.9	6.2	5.4	5.0	5.1	6.1	6.6	6.4	6.1	5.0	1.1
Debt	16.6	16.8	17.0	16.8	19.3	17.7	14.4	11.4	16.4	16.6	16.6	16.3	19.0	17.7	14.7	12.1	11.4	0.7
Average (Av.)	22.2	21.4	20.6	20.8	18.2	18.0	17.0	17.1	17.8	16.8	15.8	15.3	17.9	17.6	16.5	16.1		
Weighted av.	15.1	14.2	13.6	13.8	11.6	11.4	10.6	10.5	12.6	11.7	11.2	10.9	11.3	11.2	10.4	9.9		

A2.4: North Macedonia

	Minnesota default								Canova								Min.	Dif.
	Level				Percentage change				Level				Percentage change					
	L-1	L-2	L-3	L-4	L-1	L-2	L-3	L-4	L-1	L-2	L-3	L-4	L-1	L-2	L-3	L-4		
GDP	6.8	6.5	6.9	7.8	2.9	2.3	2.4	2.4	4.1	3.9	4.1	4.8	3.0	2.3	2.2	2.1	2.1	0.1
Investment	39.6	42.2	42.5	49.6	15.7	15.9	21.7	43.6	26.8	28.4	28.2	34.9	13.8	13.0	16.9	37.0	13.0	0.0
Export	19.0	16.4	16.8	17.3	11.0	10.8	11.2	12.4	14.2	12.4	12.2	12.2	10.9	10.6	10.9	12.1	10.6	0.0
Wages	8.3	10.0	9.2	7.6	4.3	3.9	3.8	3.9	8.3	10.1	9.5	8.0	4.3	3.8	3.7	3.8	3.7	0.1
Debt (1)	10.8	11.4	12.2	13.6	7.1	7.2	7.2	7.7	11.1	11.3	12.0	13.4	7.0	7.3	7.2	7.4	7.0	0.3
Average (Av.)	16.9	17.3	17.5	19.2	8.2	8.0	9.2	14.0	12.9	13.2	13.2	14.6	7.8	7.4	8.2	12.5		
Weighted av.	11.2	11.4	11.6	12.2	5.7	5.3	5.7	7.2	8.9	9.1	9.1	9.6	5.5	5.1	5.3	6.6		

A2.5: Montenegro

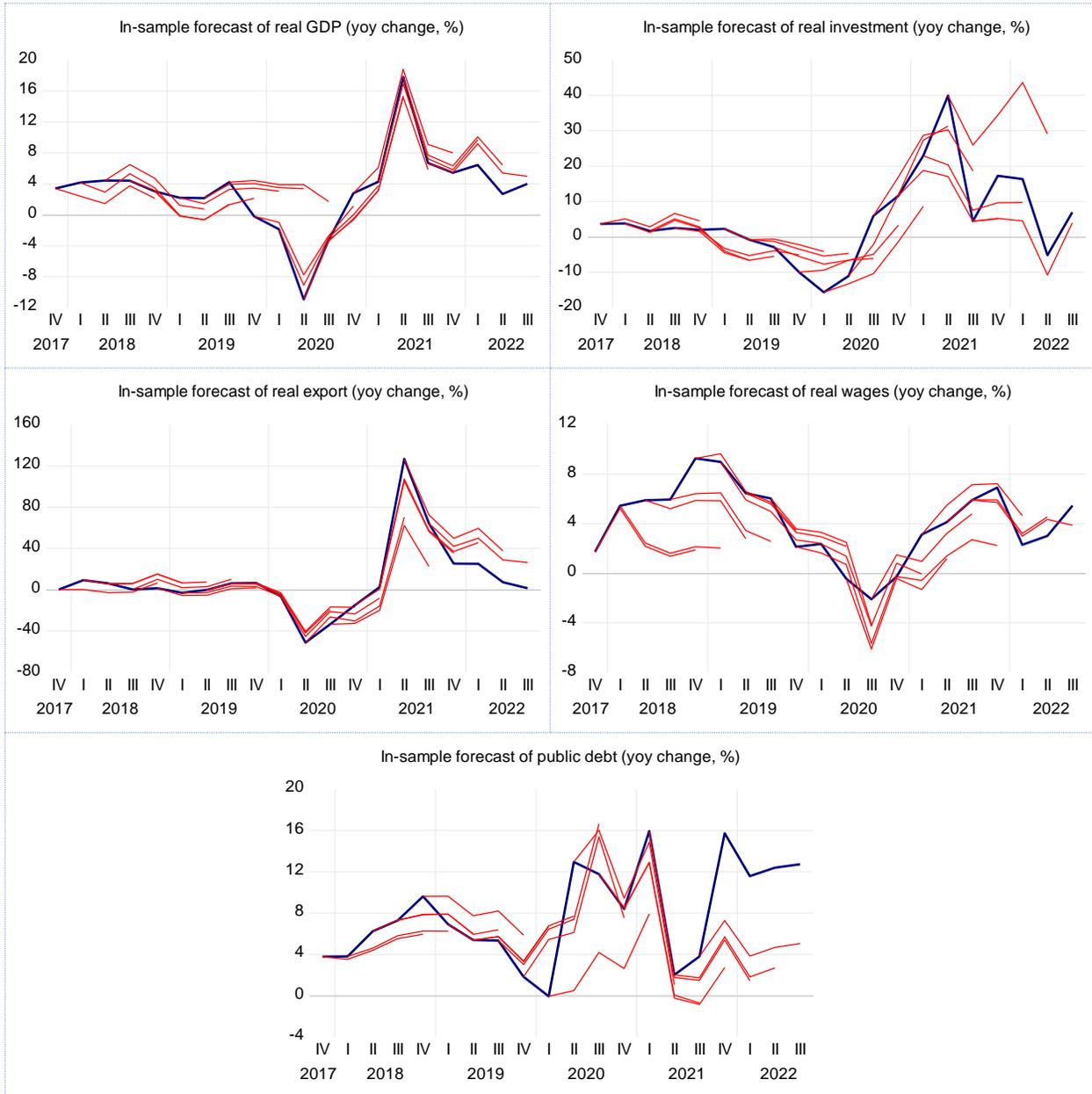
	Minnesota default								Canova								Min.	Dif.
	Level				Percentage change				Level				Percentage change					
	L-1	L-2	L-3	L-4	L-1	L-2	L-3	L-4	L-1	L-2	L-3	L-4	L-1	L-2	L-3	L-4		
GDP	9.7	10.1	10.9	12.0	10.4	10.7	11.1	11.6	6.7	6.6	6.8	7.3	10.5	10.3	10.8	11.3	6.6	4.6
Investment	11.8	12.4	13.6	12.9	15.4	14.7	12.8	12.5	15.6	15.6	15.1	13.4	15.5	15.1	12.8	12.6	11.8	1.1
Export (1)	52.5	46.5	51.3	52.9	40.6	37.0	36.3	36.5	39.9	32.6	36.0	37.7	45.0	39.7	38.7	37.6	32.6	3.7
Wages	5.7	5.8	5.8	6.0	2.5	2.5	2.5	2.5	5.3	5.4	5.4	5.6	2.6	2.6	2.6	2.6	2.5	0.0
Debt	16.4	15.6	15.4	15.7	8.5	8.4	8.6	8.3	17.4	17.0	16.7	16.8	8.4	8.2	8.7	8.4	8.2	0.4
Average (Av.)	19.2	18.1	19.4	19.9	15.5	14.6	14.3	14.3	17.0	15.4	16.0	16.2	16.4	15.2	14.7	14.5		
Weighted av.	11.1	11.0	11.4	11.8	8.5	8.3	8.1	8.1	10.4	10.1	10.2	10.2	8.7	8.4	8.2	8.2		

A2.6: Serbia

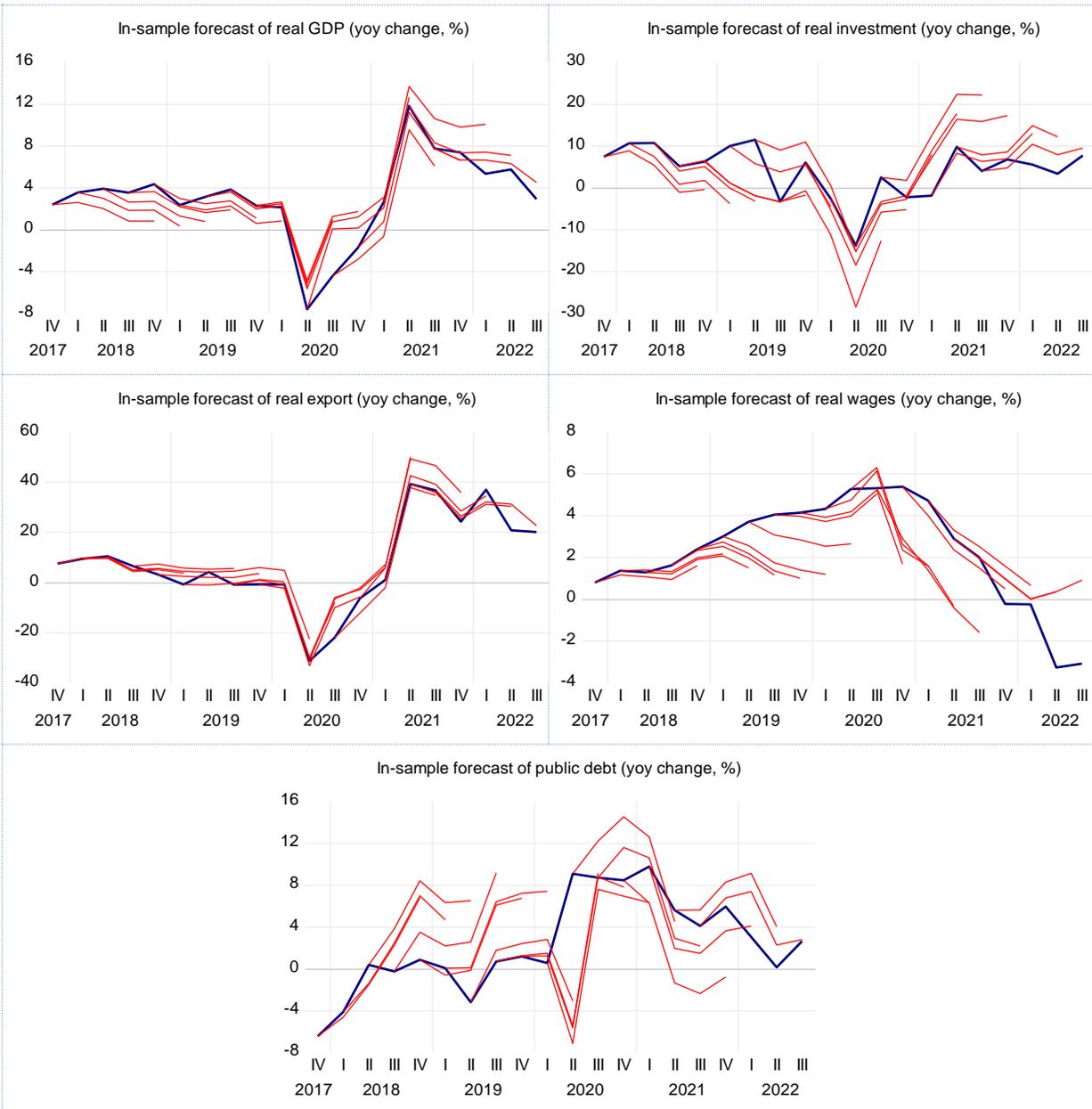
	Minnesota default								Canova								Min.	Dif.
	Level				Percentage change				Level				Percentage change					
	L-1	L-2	L-3	L-4	L-1	L-2	L-3	L-4	L-1	L-2	L-3	L-4	L-1	L-2	L-3	L-4		
GDP	6.1	6.3	6.5	6.8	2.9	2.9	3.0	3.0	5.7	5.9	6.0	6.1	2.9	3.0	3.1	3.1	2.9	0.2
Investment	14.0	14.5	14.8	14.8	14.2	14.6	13.3	11.7	13.7	14.2	14.6	14.2	14.1	14.3	13.2	11.9	11.7	0.2
Export	13.9	14.1	15.0	14.8	5.5	5.2	4.3	5.5	11.7	11.8	12.2	12.1	5.6	5.2	4.1	5.4	4.1	1.2
Wages (1)	10.5	9.9	6.7	8.5	12.0	13.2	12.6	8.0	8.3	7.9	4.7	5.4	11.7	13.3	12.5	7.3	4.7	2.6
Debt	8.7	8.8	8.9	8.8	6.9	6.5	6.7	6.9	8.7	8.8	8.8	8.8	7.2	6.6	6.7	6.7	6.5	0.3
Average (Av.)	10.6	10.7	10.4	10.8	8.3	8.5	8.0	7.0	9.6	9.7	9.3	9.3	8.3	8.5	7.9	6.9		
Weighted av.	9.6	9.7	9.4	9.8	6.9	7.1	6.7	6.1	8.7	8.8	8.4	8.5	7.0	7.1	6.7	5.9		

Graphical visualization of endogenous variables and in-sample forecast of the selected specifications

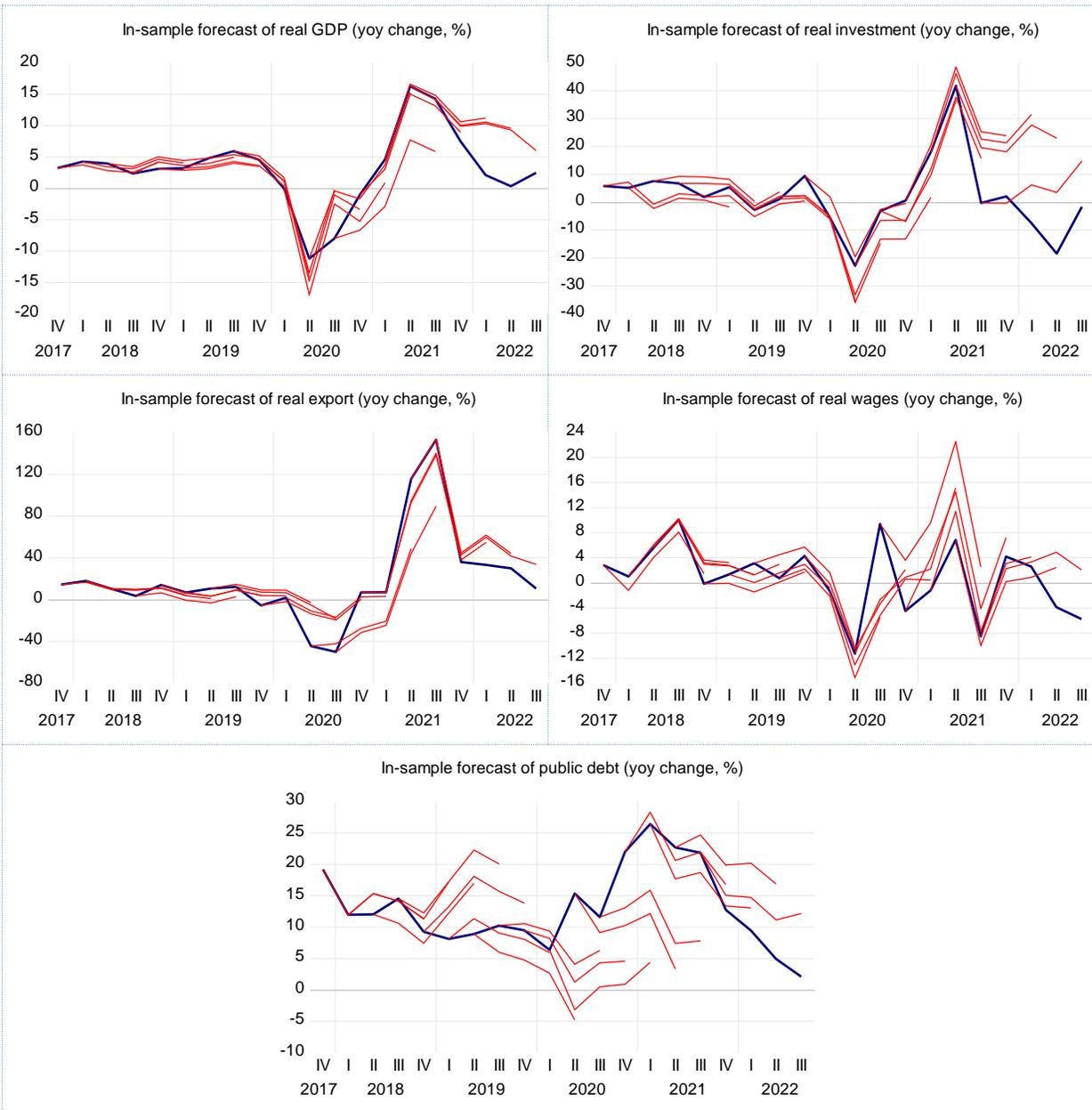
A3.1: Albania



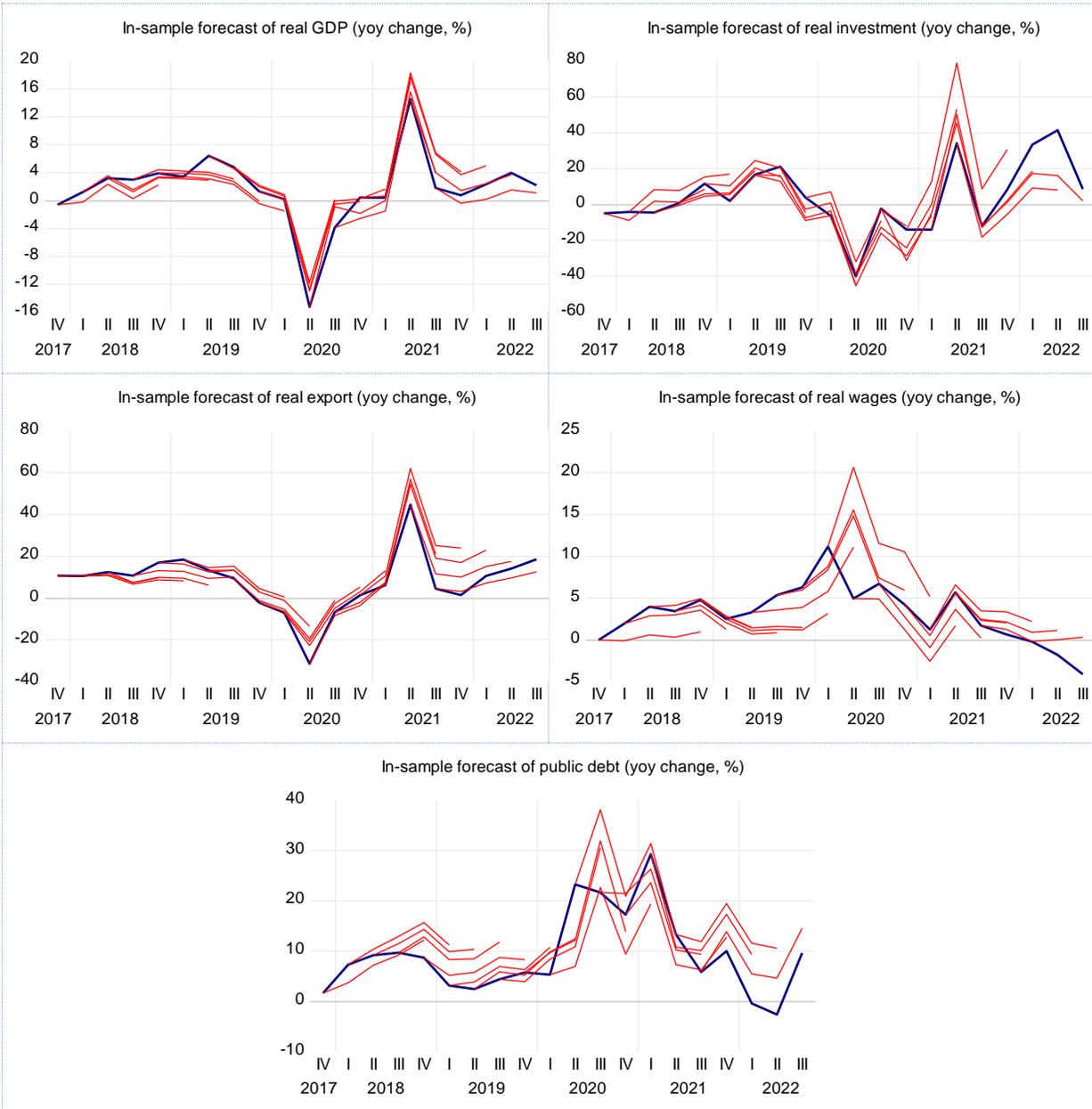
A3.2: Bosnia and Herzegovina



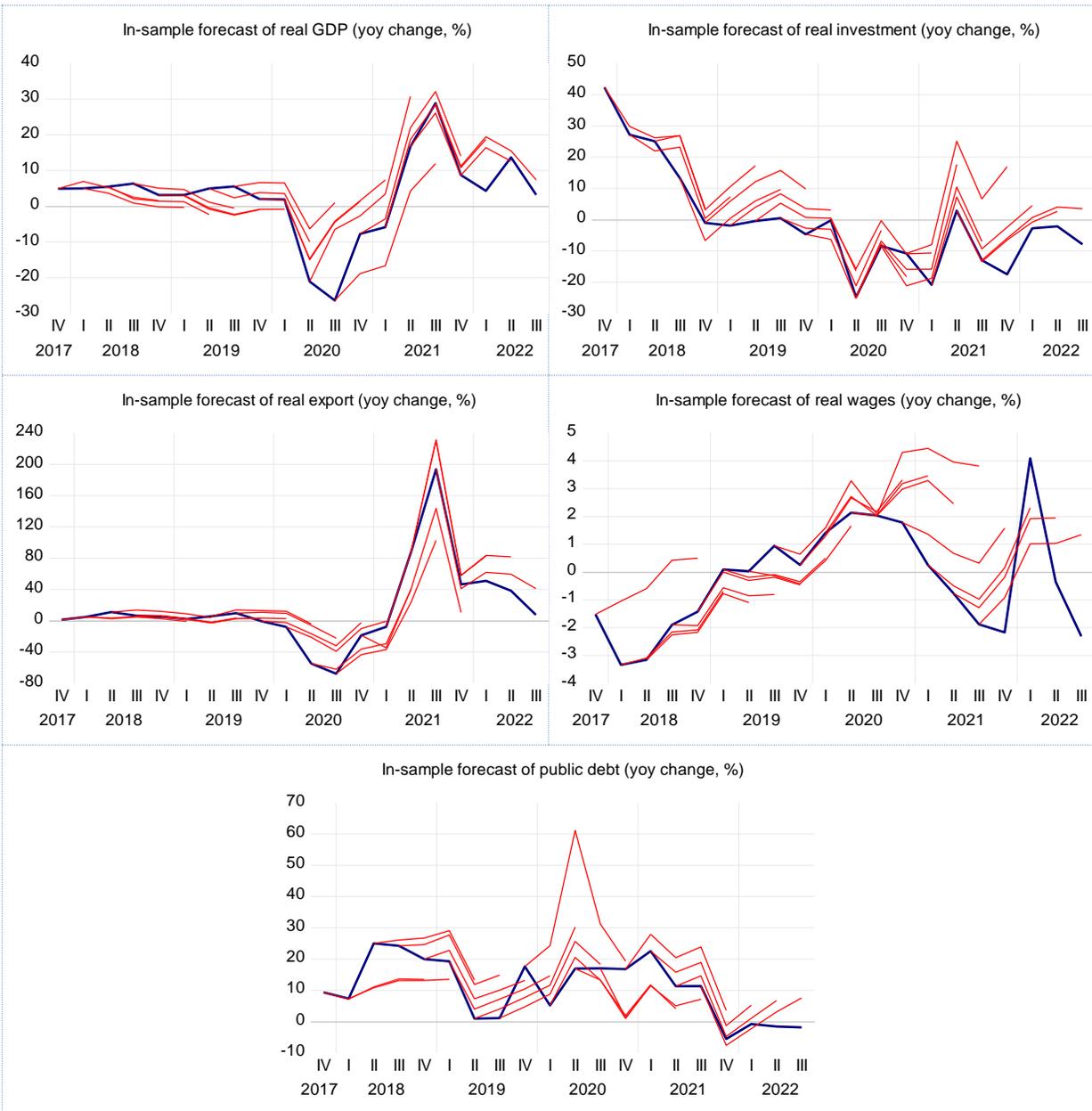
A3.3: Kosovo



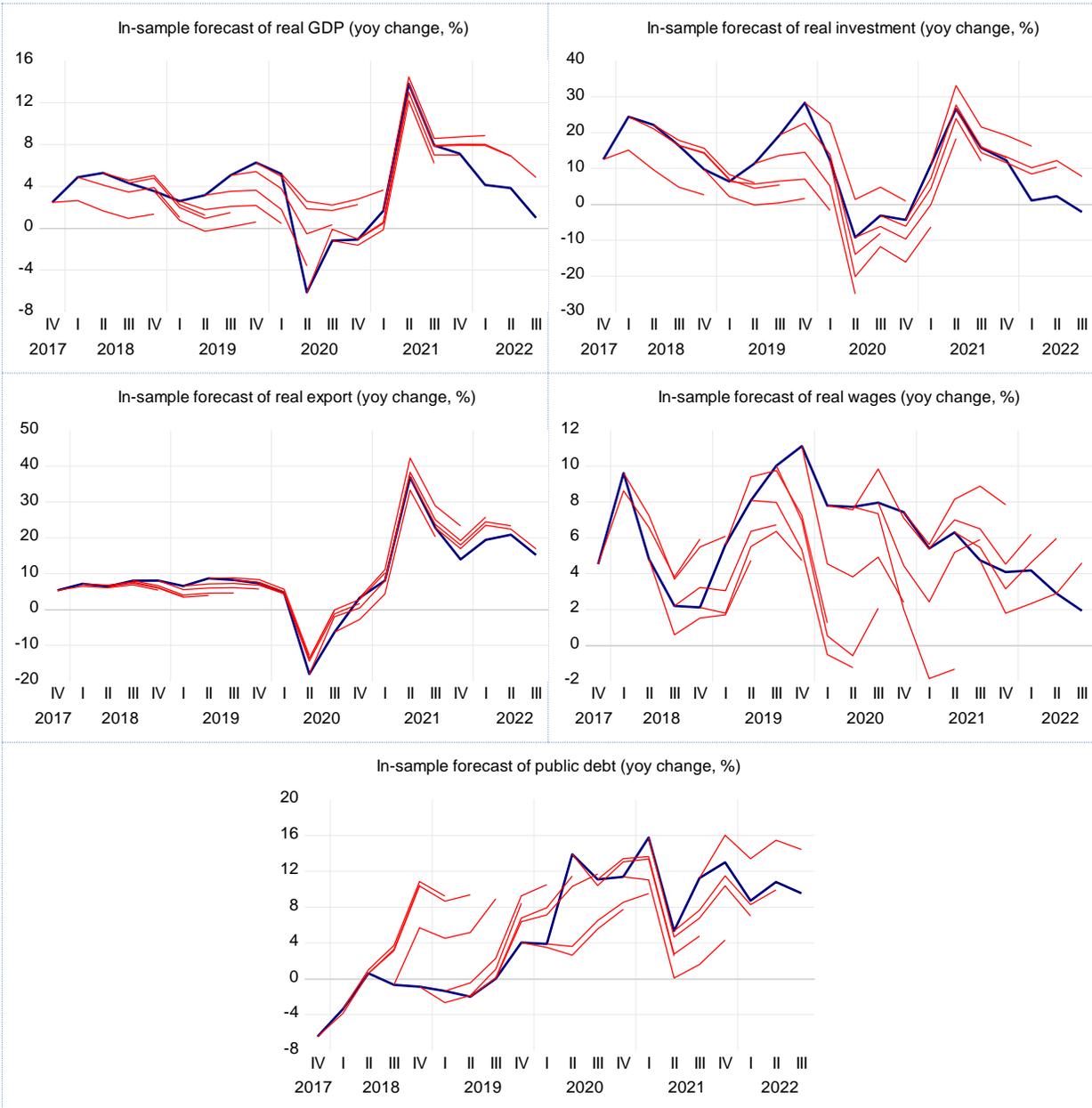
A3.4: North Macedonia



A3.5: Montenegro



A3.6: Serbia



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