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A Skill-specific Dynamic Labour Supply and Labour Demand Framework:

A Scenario Analysis for the Western Balkan Countries to 2030

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A Scenario Analysis for the Western Balkan Countries to 2030

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Abstract

This paper pursues a scenario analysis to shed light on past and potential future labour supply and labour demand dynamics of different skill groups in the six Western Balkan countries (WB6). It differentiates between four educational levels (low, medium-general, medium-VET, and high) and looks at a medium-term projection period until 2030. Starting from a baseline scenario, it examines how several different scenarios would affect the employment situation of different skill groups. These scenarios are built on the possible impact which potential labour market policies, education policies, migration flows and policies as well as GDP growth developments and structural change could have on 'surplus' and 'shortage' situations of different skill groups. Simulation results of the baseline scenario show that both labour shortage and excess labour for different skill groups would coexist alongside each other within the projection period. In all WB6 countries, the low educated (given their low activity rates) would experience labour shortages either already within or shortly after the projection period. Similarly, while Med-VETs, Med-GENs and the highly educated would also face labour shortages within or shortly after the projection period in the majority of WB6 countries, in some of these countries, there would also be evidence of growing excess labour, such as among Med-VETs in Montenegro and Kosovo, Med-GENs in Kosovo and the highly educated in Bosnia and Herzegovina and Montenegro. Additional scenarios point to important country-specific policy options that can help to mitigate these projected labour market imbalances among different skill groups and, furthermore, contribute to an improved economic development trajectory for these economies.

Keywords: dynamic labour supply-labour demand model, scenario analysis, skill demand by educational groups, skill shortages and surplus, net migration flows, Western Balkan countries

JEL classification: J11, J21, J23

Preface

This report forms part of the regional study on ‘Migration dynamics from a human capital perspective in the Western Balkans’. The study was launched in 2020 by the European Training Foundation (ETF) and carried out jointly with the Vienna Institute for International Economic Studies (wiiw) with the aim of shedding light on the triangular relationships between human capital formation, labour markets and migration, and of analysing the role that the malfunctioning of education systems and labour markets plays in migration.

The report benefited from discussions and comments made by the wiiw (Michael Landesmann and Hermine Vidovic) and the ETF project team (Ummuhan Bardak, Mirela Gavoci, Mariavittoria Garlappi, Cristiana Burzio, and Stefano Lasagni). The main data sources used in this report include national Labour Force Survey data (2010-2019) obtained from the State Statistical Offices of the six Western Balkan countries, detailed population statistics from Eurostat (including unabridged life tables), United Nations population and migration statistics, as well as data from the wiiw Annual Database.

The ETF and wiiw would like to thank all State Statistical Offices in the six Western Balkan countries for their collaboration, which provided the research team with access to the Labour Force Survey database (2010-2019). This report would not have been possible without their data and contributions.

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Annex

1. Introduction

This paper follows Peschner and Fotakis (2013) and Fotakis and Peschner (2015) and pursues a scenario analysis to shed light on past and potential future labour supply and labour demand dynamics of different educational/skill groups in the six Western Balkan countries (WB6 – Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia and Serbia). In this respect, it helps to identify surplus labour situations as well as the potential emergence of skill shortages of different educational groups.

A scenario analysis is a tool which examines and evaluates possible events or scenarios that could take place in the future and identifies the various feasible results or possible outcomes. While it helps decision makers in devising strategies and thinking about possible future scenarios, it does not predict the future.

The analysis starts with a baseline scenario in which demographic population projections are partly used from existing sources and partly developed by us; other labour market indicators (such as activity rates, productivity growth, etc.) are mostly derived from past trends. It then examines how a number of different scenarios would affect the employment situation of different skill groups: these scenarios are built on the possible impact which potential labour market policies, education policies, migration flow scenarios, development policies, GDP growth developments and structural change could have on 'surplus' and 'shortage' situations with regard to different skill groups. In particular, we examine whether the different scenarios would lead to different 'switchover points' when a 'surplus' labour situation changes into a 'skill shortage' situation for particular skill groups, and vice versa, as compared to the baseline scenario.

The analysis differentiates between four educational levels (based on ISCED 2011): *Low* (primary or lower secondary education); *Medium-general* (Med-GEN = upper secondary general education); *Medium-VET* (Med-VET = upper secondary vocational education and training); and *High* (tertiary education).

The analysis takes a medium-term perspective and looks at a projection period until 2030.

Simulation results of the *baseline scenario* show that within the projection period 2019-2030 situations of labour shortage and excess labour for different skill groups would exist in parallel in the six Western Balkan countries. Particularly, in Albania, North Macedonia and Serbia, all four skill groups would face labour shortages either already within or shortly after the projection period. Furthermore, in Bosnia and Herzegovina, while the low-educated and Med-VETs would experience labour shortages within or shortly after the projection period, the highly educated would be in a situation of excess labour (with labour market equilibrium for Med-GENs). Similarly, in Montenegro, the low-educated would face labour shortages within or shortly after the projection period but Med-VETs and the highly educated would face excess labour (with labour market equilibrium for Med-GENs). Finally, in Kosovo there would be labour shortages among the low- and the highly educated shortly after the projection period but substantial and persistent excess labour among the medium educated (i.e. Med-VETs and Med-GENs).

Additional scenarios point to important country-specific changes and policy options that can help to mitigate these projected labour market imbalances among different skill groups. The policy scenarios are explored in a 'stacked manner': they serve, at first, to partially address one or the other labour market imbalances (such as the low activity rates of low educated, or the relevance of projected migration flows for labour supply), but they then build up to explore policy scenarios which affect the labour demand and labour supply sides in a way that amount to a structural 'up-grading' of the WB economies and which could also lift overall growth performance as well as their employment absorption capacities. Thus, we investigate an 'education scenario' in which the supply of the higher skill groups is strengthened but, as this might accentuate excess supply of these groups (which was one of the factors that has led to their high migration propensity), we then allow for changes on the demand side through structural policies (increasing the demand for the higher educated) thereby also lifting the GDP growth prospects of WB economies.

We start to explore these scenarios by investigating the possible importance of migration flows over the period investigated, by contrasting a *zero net migration* scenario across all educational groups with the base scenario. Such a scenario would generally have little discernible effect in the majority of WB6 countries, as in these economies projected migration flows do not amount to high shares of the labour supply in the different skill groups. However, notable exceptions are found in Bosnia and Herzegovina, North Macedonia and Kosovo. *Labour market policies*, which aim to increase the activity rates of the low-educated and Med-VETs, would help to avert projected labour shortages among the low-educated and Med-VETs in Albania and among Med-VETs in North Macedonia. Conversely, they would 'overshoot' and generate excess labour supply among the low-educated and Med-VETs in Bosnia and Herzegovina and the low-educated in North Macedonia, Serbia and Kosovo. *Education policies,* which put strong emphasis on upgrading the skill mix of the working-age population towards Med-GENs and the highly educated, would not only exacerbate projected labour shortages among the low-educated and Med-VETs in all WB6 countries (except Kosovo) but also generate or further exacerbate excess labour among Med-GENs and the highly educated in all WB6 countries. *Joint labour market and education policies* would lead to labour market shortages among the low-educated and Med-VETs in all WB6 countries, except for Bosnia and Herzegovina and Kosovo, where the low-educated would face excess labour beyond the projection period. By contrast, in all WB6 countries, Med-GENs and the highly educated would instead experience substantial excess labour. A situation of *higher than projected GDP growth* would result in labour shortages in all Western Balkan countries except for Kosovo, where Med-VETs, and temporarily also the low-educated and Med-GENs, would still experience excess labour. *Structural change* (in a direction that would increase the demand for the higher-skilled) would on the one hand avert actual or imminent labour shortages and, in some cases, further enhance existing excess labour among the low-educated and Med-VETs; on the other hand, it would lead to labour shortages among Med-GENs and the highly educated in all WB6 except for Kosovo. *Higher GDP growth and structural change together* would lead to moderate labour demand effects among the low-educated and Med-VETs but would result in significant increases in labour demand among Med-GENs and the highly educated in all WB6 countries, further aggravating already existing or imminent labour shortages. Finally, *development policies* which combine labour market and education policies with the high GDP growth and structural change scenarios would result in labour shortages among the low-educated (either within or shortly after the projection period) in Albania, Montenegro and North Macedonia and in excess labour in Bosnia and Herzegovina, Serbia and Kosovo. Med-VETs would experience labour shortages within or shortly after the projection period in all WB6 except for Kosovo. There would also be labour shortages – either during or shortly after the projection period – among Med-GENs and/or the highly

educated in Albania, Montenegro, North Macedonia and Serbia but excess labour among Med-GENs and/or the highly educated in Bosnia and Herzegovina, Montenegro and Kosovo.

It thus emerges from these scenario analyses that depending upon starting points (initial labour supply composition by educational groups), as well as demographic and migration projections and evolving supply and demand structures associated with different scenarios, different WB economies are faced with differentiated challenges with regard to labour market excess supply and shortage situations in the future, and therefore different mixes of policies will have to address these.

The rest of the paper is structured as follows: Section 2 discusses the different data sources while Section 3 discusses the methodological framework and explains in detail how labour supply and labour demand are modelled (Sections 3.1 and 3.2, respectively). Section 4 outlines the various scenarios. Results from the scenario analysis are discussed in Section 5 while Section 6 summarises the key findings and provides policy recommendations.

2. Data sources

The data for this analysis are drawn from four different sources: First, the national (micro-level) labour force surveys (LFS) of each WB6 country for an envisaged period of analysis from 2010 to 2019. Annual LFS are generally available for the envisaged period of analysis for all WB6 countries except Kosovo, where annual LFS data are only available for the period 2012 to 2019.

However, some labour force surveys are subject to substantial breaks, such as the ISCED break between 2013 and 2014 in Montenegro and Serbia or the census break between 2010 and 2011 in Albania. Furthermore, for Kosovo the labour force surveys between 2012 and 2014 are not fully comparable owing to methodological changes and specific implementation conditions (see Leitner, 2021). Hence, in view of this, the analysis only uses LFS data for the years following any substantial data breaks to avoid any break-related biases, namely:

› 2010-2019: Bosnia and Herzegovina, North Macedonia

› 2011-2019: Albania

› 2014-2019: Montenegro, Serbia

› 2015-2019: Kosovo

Since other data used in the analysis (see below) are only available until 2018, we also use annual LFS data up to 2018 for the projections and we use LFS data for 2019 for the purpose of near-casting.

The analysis is conducted at the more detailed educational attainment level, where ISCED classifications and labels as reported in each of the yearly LFS datasets are used to construct four educational/skill groups. Following Leitner (2021), we distinguish the following educational groups:

› 'Low' for persons with primary and lower secondary education as their highest educational attainment level (ISCED 1-2). Persons without any formal education were excluded from the analysis.[1]

› 'Medium' for persons with upper-secondary or post-secondary education as their highest educational attainment level (ISCED 3-4); this group is further differentiated by particular education tracks into medium-general and medium-VET to account for the importance of vocational education and training in the region:

- 'Medium-general' (Med-GEN) for persons who followed the general upper secondary education track (i.e. gymnasium/grammar school) and have a diploma from the general upper secondary track as their highest educational attainment level;

[1] Persons without any formal education account for less than 3% of the working-age population aged 15+ in each WB6 country.

- ‘Medium-VET’ (Med-VET) for persons who instead followed the vocational secondary track (and attended 1-2-, 3- or 4-year VET programmes) and hold diplomas from one of the upper-secondary VET programmes as their highest educational attainment level; and

› ‘High’ for persons with some form of tertiary education as their highest educational attainment level (ISCED 5 and higher) which encompasses diplomas from higher education, Bachelor and undergraduate studies (BA), Master’s degree and specialised studies (MA), and doctorate (PhD) studies.

From the annual national LFS datasets, we extract information on the working-age population 15+, the active and employed populations as well as net migration, and we further calculate skill-specific activity rates, employment shares and the skill structure of the working-age population 15+.

Second, the analysis uses data from Eurostat such as its detailed unabridged life tables[2] differentiated by age and gender as well as its detailed population statistics[3], also differentiated by age and gender. Eurostat’s life tables are used for projections of the working-age population 15+ and are generally available until 2018 for all WB6 countries except for Bosnia and Herzegovina. Eurostat’s population statistics are available until 2019 for all WB6 countries except for Bosnia and Herzegovina. Bosnia’s population statistics were taken from census information for 2013 from the Agency for Statistics of Bosnia and Herzegovina (BiHAS).[4] For Albania, Eurostat’s population statistics were incomplete and only available until the age of 84. The missing information for the age cohort 85+ was taken from the statistical database of the Albanian Institute of Statistics (INSTAT).[5]

Third, the analysis uses data from the United Nations, such as the UN unabridged model life tables[6] (from the ‘Coale-Demeny South’ model) for Bosnia and Herzegovina for which, as mentioned above, no life tables are available. Furthermore, it uses UN international migrant stock 2019 data[7] which provide estimates of international migrants by age, sex and origin for 1990, 1995, 2000, 2005, 2010, 2015 and 2019. The estimates are based on official statistics on the foreign-born or foreign population. From UN international migrant stock 2019 data, net migration flows were calculated between 2010 and 2019 for North Macedonia to complement net migration data calculated from annual LFS data (for more details see section 3.1).

Finally, data on real GDP were taken from the wiiw Annual Database (ADB) which generally provides a broad range of key macroeconomic and structural indicators for several CESEE countries, including all WB6 countries. Data on real GDP were extracted from the ADB until 2019.

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2 Generally, life tables are available in most countries from birth to age 90 years or beyond by single years of age (known as unabridged life tables). Life tables are used to measure mortality, survivorship, and the life expectancy of a population at varying ages. Source: demo_mlifetable.

3 Source: demo_pjan.

4 See: http://www.bhas.ba/data/Publikacije/Bilteni/2020/DEM_00_2019_TB_0_HR.pdf.

5 See: http://www.instat.gov.al/en/themes/demography-and-social-indicators/population/#tab2.

6 See https://www.un.org/en/development/desa/population/publications/mortality/model-life-tables.asp.

7 Available at: https://www.un.org/en/development/desa/population/migration/data/estimates2/estimates19.asp.

3. Methodological framework and key characteristics of the baseline scenario

Sections 3.1 and 3.2 outline the underlying methodological framework. They explain how labour supply and labour demand are modelled and projected into the future by means of trend extrapolation. They also briefly discuss the key actual and projected determining elements of labour supply and labour demand which enter and determine the baseline scenario.

3.1. LABOUR SUPPLY

The dynamics of labour supply by educational attainment level/skill group are captured by developments in the active population and modelled as follows: formally, labour supply in country c of skill type s at time t (denoted S_{cst}) – i.e. the number of persons of a particular skill type active in the labour market – is determined by the number of persons of working age in country c with skill level s at time t (N_{cst}) multiplied by the skill-specific activity rate in country c at time t (A_{cst}):

$$S_{cst} = A_{cst} N_{cst} \tag{1}$$

The two key determinants of skill-specific labour supply are further specified as follows: The working-age population N_{cst} in country c of skill type s at time t is the product of the working-age population of skill type s in country c at time $t-1$ and its skill-specific growth rate at time t, i.e. $N_{cst} = N_{cst-1}(1+n_{cst})$. In the analysis, the working-age population (of a particular skill type) is defined as those aged 15+.

The activity rate A_{cst} is defined as the ratio of the number of active persons aged 15+ (employed and unemployed) in country c of skill type s at time t and the corresponding population aged 15+. It is assumed to follow its longer-term trend and is projected into the future by means of annualised skill-specific growth rates of the past 5 to 10 years (depending on data availability), defined as $a_{cs} = (A_{csEND}/A_{csSTART})^{(1/n)} - 1$. $START$ refers to the first year data are available (which differs across WB6 countries – see section 2 for a discussion) and END to the last year data are available which is also the starting point of the simulation. Hence, the skill-specific activity rate a_{cst} evolves as follows $A_{cst} = A_{cst-1}(1+a_{cs})$. After substituting both elements into equation (1), labour supply S_{cst} in country c with skill level s at time t is specified as follows:

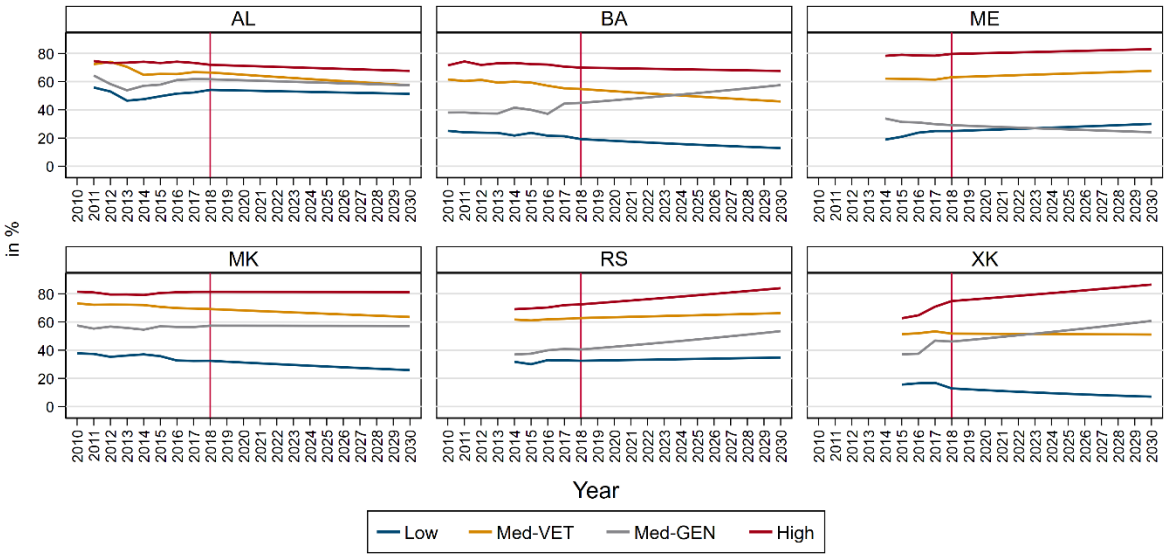
$$S_{cst} = A_{cst-1}(1+a_{cs}) N_{cst-1}(1+n_{cst}) \tag{2}$$

Figure 1 depicts observed and future projected skill-specific activity rates (labour force in % of the working-age population 15+ of the respective skill group) for all WB6 countries (gender-differentiated skill-specific activity rates are presented in Figure A.1 in the Annex) that are used in the baseline scenario. It points to a clear ordering, irrespective of country considered: until 2018, activity rates were always highest among the highly educated, followed by those with Med-VET and Med-GEN as their highest level of education. By contrast, the low educated were always the bottom of the class. In this

context, Albania stands out since, compared to the other countries in the region, activity rates of all educational groups were high. This is related to the high female employment rate (mainly in the large agricultural sector) and the large informal sector in Albania.

Furthermore, projections foresee that activity rates of the low educated (following previous trends) will continue to fall until 2030 in all WB6 countries except for Montenegro and Serbia, where slight increases are to be expected. Projections also foresee a further fall in activity rates of those with Med-VET as their highest level of education in Albania, Bosnia and Herzegovina and North Macedonia and either an increase or no change at all in the remaining WB6 countries. As concerns those with either Med-GEN or high as their highest level of education, activity rates are projected to increase in the majority of WB6 countries (except for Albania and partly also for Montenegro). Moreover, except for Albania and Bosnia and Herzegovina, projections foresee that the activity rates of the highly educated will exceed 80% at some point over the period to 2030.

Figure 1 / Observed (until and including 2018) and projected skill-specific activity rates 15+



Source: LFS for Albania, Bosnia and Herzegovina, Montenegro, North Macedonia, Serbia and Kosovo; own calculations.

As concerns projections of the *working-age population 15+*, information for each educational attainment group is necessary. However, this data is not readily available from official sources (such as the EU, UN or OECD which all only develop projections for the entire (working-age) population). Hence, in view of this data gap, differentiated projections of the working-age population 15+ were developed in the course of the analysis.

For this purpose, the *cohort component population projection method* is used which projects separately for each birth cohort the components of population change, namely future births (fertility), deaths (mortality), and net migration. In the analysis, we use one-year age cohorts and project one-year time intervals.

Fertility

Since we take 2018 as the starting point of the simulation (some data are only available until 2018 – see section 2 for more information), persons who will become part of the working-age population 15+ in the next 12 years (i.e. until the end of the projection horizon – 2030) are already alive. Hence, there is no need to project future fertility.

Mortality

To model future mortality, we take a standard approach and use country-specific unabridged life tables to calculate annual survival rates. Survival rates are used to calculate the number of people who will be alive at a future date in time. From the unabridged life tables, we use information on the total number of person-years in the stationary population for each age interval (L_x) to calculate 1-year survival rates[8] as follows: $s_{x+1} = L_{x+1}/L_x$ where x refers to the age interval. Since the survival rates in the WB6 countries are quite stable between 2010 and 2018, we only use the survival rate for 2018 – the last year before the beginning of the projection horizon. The survival rate of 2018, together with information on the sex-specific age-composition of the population in 2018, is used to calculate the future 'surviving' working-age population 15+.

This approach was feasible for all WB6 countries but Bosnia and Herzegovina. In particular, for Bosnia and Herzegovina information on the sex-specific age-composition of the population is only available for the year 2013 – in which a census was conducted. Furthermore, as there are no life tables for Bosnia and Herzegovina, the detailed (age-specific) UN model life tables were used. The future Bosnian 'surviving' working-age population was then calculated based on detailed information on the sex-specific age-composition of the population in 2013.

However, this approach only provides an estimate of the total working-age population 15+ which is not differentiated by skill level. Hence, to get such a differentiation, the actual and projected working-age population 15+ is further split into the four skill groups by means of the past and future projected skill composition of the working-age population 15+. In this context, annualised growth rates of skill shares (in the total working-age population 15+) between 2010 and 2018 (depending on data availability) were used to project the skill composition of the working-age population 15+ into the future. Since the sum of projected skill shares sometimes slightly deviated from 100%, an additional correction procedure was applied to guarantee that the four projected skill shares always add up to 100%.

[8] The survival rate of a particular age cohort into the next age cohort.

Figure 2 / Observed (until and including 2018) and projected skill composition of the working-age population 15+

Source: LFS for Albania, Bosnia and Herzegovina, Montenegro, North Macedonia, Serbia and Kosovo; own calculations.

Figure 2 depicts the observed and projected skill composition of the working-age population 15+ (as used in the baseline scenario). For the period until 2018, it points to similar patterns in Bosnia and Herzegovina, Montenegro and Serbia, where the group of Med-VETs dominates (with around 50%), followed by the low educated, the highly educated, and, finally, the group of Med-GENs as the smallest group. In North Macedonia, the group of Med-VETs and the low educated are largest with around 40% each, followed by the highly educated and Med-GENs. By contrast, in Albania, the low educated are by far the largest group (with between 50% and 60%), followed by the group of Med-GENs and the highly educated. Unlike in all other WB6 countries, Med-VETs are a very small group, accounting for only around 10% of the working-age population 15+. Similarly, in Kosovo, the skill composition of the working-age population is also strongly skewed towards the low educated, who account for around 40% of the working-age population 15+, followed by the Med-VETs and Med-GENs, who account for between 20% to 30%. By contrast, with only around 10%, the highly educated represent the smallest group.

Furthermore, projections foresee that except for Kosovo, the share of the low educated will continue to decrease until 2030 in all other WB6 countries, particularly in Albania, Bosnia and Herzegovina and North Macedonia. In return, the shares of the remaining educational groups are projected to increase or remain constant. Projections foresee that the increase in the share of the highly educated is most pronounced in Albania. Compared with all WB6 countries, Kosovo, whose projections are based on a relatively short period, stands out: while the share of the low educated is projected to further increase and reach almost 50% until 2030, the remaining educational groups are all projected to fall until 2030, albeit at a slow pace. The share of the smallest group of the highly educated is projected to fall below 10% until 2030.

Net migration

Migration is measured in terms of net migration, defined as the difference between immigration and emigration. However, since there are no official statistics which report immigration and emigration by educational attainment of migrants, data on net migration by educational attainment are taken from the results of the cohort approach (see Leitner, 2021).

This approach uses national Labour Force Survey (LFS) data, whose rotating sample design does not allow the same person to be tracked over time but whose stratification and weighting scheme allows the identification of representative groups (age cohorts) that can be followed over time. In view of zero fertility and in the absence of (substantial) mortality among the sub-population of interest (i.e. those aged 15 to 39), differences in the size and skills composition of an age cohort between two consecutive years give a good approximation of the extent and skill composition of (cohort-specific) net migration in a year. This is a reasonable assumption for the sub-population of interest (15-39), which is characterised by zero fertility and little mortality. In terms of skill composition, it differentiates between the four educational levels: Low, Medium-general, Medium-VET, and High. Generally, this approach is applied to the six Western Balkan countries and the period 2010-2019. However, because of various substantial breaks in the LFS data (as discussed in section 2 above), shorter periods were used in some WB6 countries (2011-2019 for Albania, 2014-2019 for Serbia and Montenegro, and 2015-2018 for Kosovo) (for more information, see Leitner 2021).

However, since net migration flows as estimated by the cohort approach are very volatile and available for only a relatively short period, a trends-extrapolation approach could not be applied to determine future net migration flows. Instead, we calculated skill-specific averages of annual net migration (as calculated from the cohort approach) between 2010 and 2019 (depending on data availability) which we used to approximate future (constant) skill-specific net migration flows.

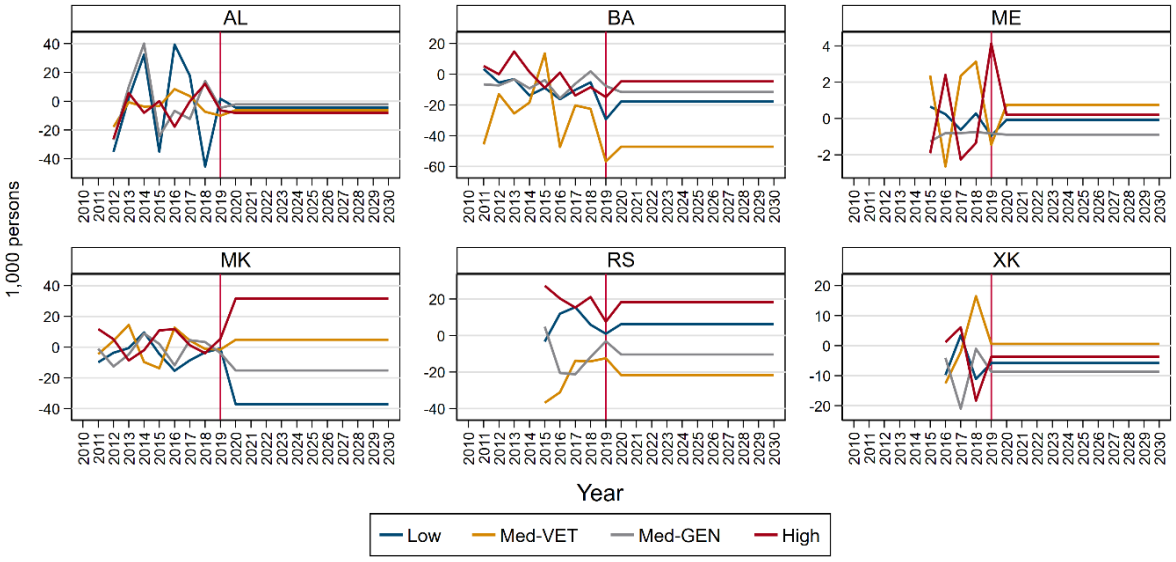
This approach was feasible for all WB6 countries but North Macedonia, for which estimates from the cohort approach were substantially lower than figures from other sources, such as the United Nations. This discrepancy is related to the fact that there had been no census since 2002 in North Macedonia so that emigration dynamics which have taken place since then are neglected and not reflected in the LFS data, which uses the 2002 Population and Housing Census as a sampling frame. However, while the cohort approach underestimates the true extent of net migration, it is still informative in terms of the general migration structure by skill level. In view of this, we use UN migrant stock data, and calculate net migration flows for the period 2010-2019 and then apply the skill structure of net migration from the cohort approach to split the overall net migration flow into skill-specific net migration flows.

Figure 3 depicts yearly skill-specific net migration flows as calculated with the cohort approach, as well as projected (constant) net migration flows for the projection period that were used in the baseline scenario. It points to rather erratic patterns with periods of net immigration following periods of net emigration in quick succession. In Albania, net migration flows of Med-GENs (during the first 5 years) and the low educated (for the whole period) are particularly erratic and are related to two key events. First, the global financial crisis of 2008 which led to a substantial economic depression in Greece and Italy – the two key destination countries of Albanian migrants – and initiated a wave of mass return migration, particularly among the low educated. Second, the mass emigration in 2015 of Albanians

seeking asylum in the EU and the subsequent return (by order) of unsuccessful asylum applicants in the following years.

Furthermore, projected (mean) net migration flows vary considerably across WB6 countries. In Albania and Bosnia and Herzegovina, projections foresee net emigration across all educational groups, without exception. However, while projected net emigration is highest among the highly educated in Albania, it is highest among the group of Med-VETs in Bosnia and Herzegovina. In Kosovo, projections foresee net emigration among all educational groups – except for the group of Med-VETs – which is highest among the group of Med-GENs. In all three countries, projections foresee net emigration among the highly educated which is indicative of continued brain drain. However, the extent of brain drain varies across countries. In the remaining WB6 countries, projected net migration patterns foresee net immigration among the highly educated (i.e. brain gain). Projections also foresee net immigration among the group of Med-VETs in Montenegro and North Macedonia and among the low educated in Serbia. By contrast, the remaining educational groups are projected to experience further net emigration.

Figure 3 / Annual net migration flows as calculated with the cohort approach (until and including 2019) and projected mean net migration flows

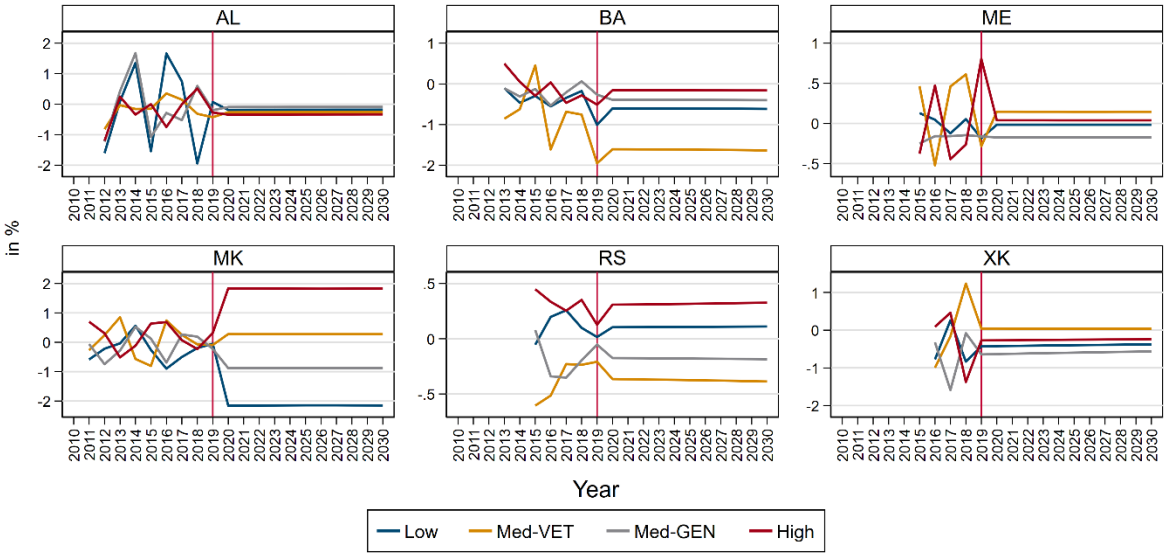


Note: For Kosovo the 2019 LFS data were not used in the cohort approach, as they appeared peculiar.
Source: Leitner (2021).

To provide a better idea of the extent of net migration in the WB6 countries, net migration numbers should be considered in relation to the size of the population. Hence, Figure 4 depicts yearly skill-specific net migration flows expressed as a share of the total working-age population 15+. It generally highlights that until 2019 the shares of either net immigration or net emigration were relatively low and in the range of -2% and +2% at most as in the case of Albania, Bosnia and Herzegovina and Kosovo. In the remaining WB6 countries, the share of net migration was even lower.

Furthermore, projected (constant) mean net migration flows also account for only a small share.

Figure 4 / Annual net migration flows as calculated with the cohort approach (until and including 2019) and projected mean net migration flows as share of the total working age population 15+



Note: For Kosovo the 2019 LFS data were not used in the cohort approach, as they appeared peculiar.
Source: Leitner (2021).

3.2. LABOUR DEMAND

Following Stehrer and Leitner (2019), labour demand dynamics are captured by and analysed in terms of the implied employment growth rate, defined as the difference between (real) GDP growth and labour productivity growth (defined as real GDP per employed person), or formally $\frac{\Delta E_t}{E_t} = \frac{\Delta Y_t}{Y_t} - \frac{\Delta \Phi_t}{\Phi_t}$ where E denotes employment, Y refers to real GDP and Φ to labour productivity. Expressed in annual growth rates this becomes

$$e_{ct} = y_{ct} - \varphi_{ct} \tag{3}$$

To model trends in the implied employment growth rate, the difference in the trend growth rates of GDP and of labour productivity is used, each calculated as means over the whole period 2010-2018. This, however, only gives an average implied employment growth rate of total employment e_c. To obtain skill-specific employment levels E_{cst}, the following two-step approach is taken: first, the average implied employment growth rate is used to project total employment into the future as follows: $E_{ct} = E_{ct-1}(1 + e_c)$; second, past as well as future projected total employment levels are then multiplied by the respective past and projected skill-specific employment shares $Esh_{cst} = \frac{E_{cst}}{E_{ct}}$ as follows

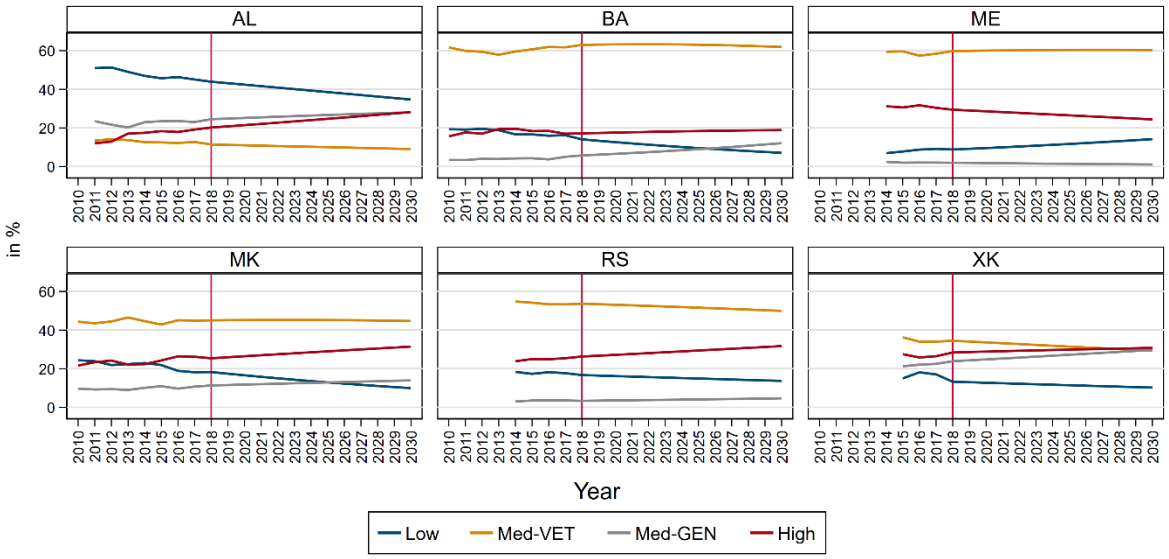
$$E_{cst} = E_{ct} Esh_{cst} \tag{4}$$

As concerns future skill-specific employment shares Esh_{cst}, a linear trend model is applied and annualised growth rates of employment shares of the past 5-10 years (depending on data availability) are used to model their future evolution.

Figure 5 shows the observed and projected employment shares by educational group that are used in the baseline scenario. It points to a similar employment structure in Bosnia and Herzegovina, Montenegro, North Macedonia and Serbia before 2018 with high employment shares among the group of Med-VETs, followed by the highly educated, the low educated and, finally, the group of Med-GENs. At around 60%, the employment shares were highest among the group of Med-VETs in Bosnia and Herzegovina, Montenegro and Serbia. In Kosovo, employment shares are also highest among the group of Med-VETs, followed by the highly educated, the group of Med-GENs and, finally, the low educated. By contrast, Albania was characterised by a different employment structure which was dominated by the low educated, followed by the group of Med-GENs and the highly educated. With only around 10%, the employment share was lowest among the group of Med-VETs.

By and large, projections foresee a shift in the employment structure from the low educated and the group of Med-VETs to the group of Med-GENs and the highly educated. This particular structural shift is foreseen for all WB6 countries except for Montenegro. Projections for Montenegro, which are based on a relatively short period, foresee a reverse shift until 2030, from the highly educated to the low educated (with essentially no shifts among the remaining educational groups). Projections foresee that this low-to-high structural shift will be most pronounced in Albania.

Figure 5 / Observed (until and including 2018) and projected skill-specific employment shares



Source: LFS for Albania, Bosnia and Herzegovina, Montenegro, North Macedonia, Serbia and Kosovo; own calculations.

4. Scenarios

To shed light on potential future developments of labour supply and labour demand for each educational attainment level and the role played by currently observable trends and potential future labour market policies, education and training policies, migration flows and policies, likely GDP growth developments as well as structural shifts in labour demand, we specify and analyse different scenarios.

In this context, the baseline scenario is the benchmark scenario based on extrapolations of past trends. The remaining alternative scenarios are variants thereof and provide information about changes in the results which stem from the variation in a single selected element of the model. However, alternative scenarios are not specified with regard to their plausibility – i.e. how likely they are to be implemented – but as possible reactions to emerging challenges in the labour market in terms of labour shortages and surplus labour as projected in the baseline scenario for different educational groups which give rise to possible opportunities for policy intervention. This is instructive and helpful as different potential policy options can be identified which help to mitigate country and skill-specific labour market issues. Furthermore, the magnitude of projected changes (on top of what is projected in the baseline scenario) are intentionally kept small as large changes are very unrealistic in this short projection period.

At the time of writing, the COVID-19 pandemic has already lasted for almost a year and has had severe impacts on societies, economies and labour markets. According to the World Bank (2020) all countries in the Western Balkans have entered into partly deep recessions but are expected to gradually recover in 2021 and 2022, with medium term growth expected to return to pre-crisis levels as the pandemic is brought under control. Hence, in view of this positive medium-term outlook, no explicit COVID-19 scenario is built. Instead, it is assumed that the COVID-19 crisis is of a temporary nature and that the Western Balkan countries will quickly return to their relatively high pre-crisis growth trajectories, which makes a pessimistic growth scenario less likely and relevant.

In particular, the following scenarios are specified:

- *Baseline scenario:* extrapolation of past trends.
- *No migration scenario*: zero net migration for all educational groups.
- *Labour market ('activation') policy scenario*: increase in the (otherwise low or falling – see Figure 1 above) activity rates of the low educated over the projection period and constant activity rates (at the 2018 level) of Med-VETs in the case of falling activity rates. We take into account country-specific situations in the design of this scenario: a moderate increase in the activity rate of the low educated by 5ppts in Albania (where activity rates of the low-educated are already relatively high), an increase in the activity rate of the low-educated to the pre-projection level of 20% in Bosnia and Herzegovina and Kosovo and to 40% in the three most economically advanced WB6 countries Montenegro, North Macedonia and Serbia. And constant (instead of otherwise falling) activity rates of Med-VETs in Albania, Bosnia and Herzegovina and North Macedonia.

- *High policy attention to education scenario:* strong and active role of the state in upgrading the skill mix of the working-age population 15+ which translates into a reduction in the skill shares of the low educated and Med-VETs and a parallel increase in the skill shares of Med-GENs and the highly educated over the projection period. We again take the country-specific structure into account: reduction in the skill shares of the low-educated and Med-VETs of 15ppts in total in Albania, Montenegro and North Macedonia, of 12ppts in Serbia, and of only 10ppts in Bosnia and Herzegovina and Kosovo, where in view of the comparatively low level of economic development, a stronger education policy intervention is less likely. Skill shares were reduced most in those skill groups which account for the largest share of the working-age population 15+, namely the low-educated in Albania and North Macedonia and Med-VETs in Montenegro. Due to similar skill shares in the pre-projection period and similar projected skill share changes over the projection period, the skill shares of the low-educated and Med-VETs were reduced to the same extent in Bosnia and Herzegovina, Serbia and Kosovo.
- *Joint labour market policy and high policy attention to education scenario:* combination of both scenarios (as defined above) to shed light on the overall effect of both supply-side policy interventions together which, in isolation, address labour shortages either among the low-educated and Med-VETs or among Med-GENs and the highly educated.
- *High GDP growth scenario:* future GDP growth is 1ppt higher than average GDP growth of the past 5 years (at a constant labour productivity growth rate).
- *Structural change scenario:* shift in labour demand from the low-educated and Med-VETs to more educated groups, which could be due to skill-biased technical change and/or changes in the structure of the economy towards activities requiring more advanced skills. Reduction in the employment shares of the low-educated and Med-VETs by 10ppts in total over the projection period in all WB6 countries and increase by 5ppts each over the projection period among Med-GENs and the highly educated. Employment shares were reduced the most in those skill groups which had the largest potential for structural change (i.e. the highest projected employment shares): hence, in all WB6 countries except Albania, employment shares of Med-VETs were reduced the most, while in Albania employment shares of the low-educated were reduced the most.
- *Joint high GDP growth and structural change scenario:* combination of both scenarios (as defined above) which takes into account that higher growth and structural change are intertwined and ideally occur together.
- *Development scenario:* this scenario combines four scenarios into one joint scenario, namely the labour market policy intervention scenario, the high policy attention to education scenario, the high GDP growth scenario, and the structural change scenario. It shows the overall net effect from all four scenarios which would emerge if a country embarked on an improved economic development trajectory which comes in the form of higher GDP growth and structural shifts in labour demand towards more advanced skills.

5. Findings

In what follows, simulation results of the various scenarios for labour supply (captured by developments in the active population) and labour demand (captured by developments in the employed population) for each of the four educational groups are presented and discussed, using levels of labour supply and labour demand in 2018 as starting points (which is indicated by the vertical red line in each figure) for projections until 2030.

5.1. RESULTS OF THE BASELINE SCENARIO

Figure 6 presents simulation results of the baseline scenario and shows that situations of labour shortage and excess labour for different educational groups would coexist alongside each other over the projection period (2019-2030) in the WB6. In particular, in several of the WB6 countries, labour shortages would soon emerge, especially in the group of the low-educated and Med-VETs. In Albania and Serbia, the low-educated would experience labour shortages towards the end of the projection period. Due to the relatively stable projected supply of and the strong increase in the demand for the low-educated, Montenegro would relatively soon experience a situation of labour shortage among the low-educated. Furthermore, in Bosnia and Herzegovina and North Macedonia labour shortages of the low-educated are also imminent and very likely to occur shortly after the projection horizon. Similarly, Kosovo is also heading towards a situation of labour shortage among the low-educated, but this will only materialise some time after 2030.

Furthermore, results suggest that labour shortages would also emerge among the group of Med-VETs, especially in Albania, North Macedonia and Serbia which would however only materialise towards the end of the projection period. Similarly, labour shortages among Med-VETs are also imminent in Bosnia and Herzegovina and are likely to emerge shortly after 2030. By contrast, Med-VETs in Montenegro and Kosovo would continue to experience non-negligible excess labour beyond the projection period.

The situation is more differentiated among Med-GENs and the highly educated. In Serbia, Med-GENs would already face labour shortages towards the end of the projection period while they would do so only shortly after the projection period in Albania and North Macedonia. By contrast, in Kosovo, similar to Med-VETs, excess labour among Med-GENs would persist beyond the projection period. In Bosnia and Herzegovina and Montenegro, the supply of and the demand for Med-GENs would be well aligned and in a state of equilibrium.

Moreover, simulation results show that the highly educated would face labour shortages towards the end of the projection period in Albania and North Macedonia and shortly after the projection period in Serbia and Kosovo. By contrast, excess labour would continue to grow and persist beyond the projection period in Bosnia and Herzegovina and Montenegro.

5.2. RESULTS OF THE NO MIGRATION SCENARIO

Simulation results of the no migration scenario show little visible effects in the majority of WB6 countries (see Figure 7). This is related to the fact that even though net migration flows by educational group – as calculated and projected from the cohort approach – are sizeable in absolute terms, they only make up a small share of the total working-age population 15+ (see Figure 5 above).

There are some exceptions to this, however. Particularly, in view of the substantial net emigration among the group of Med-VETs in Bosnia and Herzegovina, zero net migration would help to alleviate the imminent labour shortage and somewhat delay the date when the labour shortage is projected to occur under the baseline scenario. Similarly, no net migration would also be beneficial for the low-educated in North Macedonia and push the date when the labour shortage is projected to arise (following the baseline scenario) further back. A situation of labour shortage would still occur shortly after 2030 though.

Furthermore, the comparatively high net migration flows among the group of Med-GENs and the highly educated also have a visible effect in Kosovo and North Macedonia. Because of the more substantial net emigration among Med-GENs (in both countries) and among the highly educated (in Kosovo only), zero net migration would lead to an increase in the active population and either further enhance excess labour supply (as in the case of Med-GENs in Kosovo) or help to somewhat delay the date when the labour shortage occurs (as in the case of Med-GENs in North Macedonia and of the highly educated in Kosovo). Conversely, under the zero migration scenario, the high estimated net immigration among the highly-educated in North Macedonia would result in a substantial fall in their active population and immediately cause labour shortages right at the beginning of the projection period.

5.3. RESULTS OF THE LABOUR MARKET POLICY SCENARIO

Simulation results of the labour market policy scenario show that the labour supply among the low-educated and, where relevant, among Med-VETs would increase in response to an increase in their activity rates (see Figure 8). For Albania, this would alleviate the labour market shortage of the low-educated and delay the date when the labour shortage occurs. However, a labour shortage situation would still arise shortly after the projection period which suggests that a stronger labour market policy intervention is needed to avert any labour shortages in the longer run. In Bosnia and Herzegovina, North Macedonia and Serbia, the labour shortage situation as projected by the baseline scenario would be averted altogether and instead a situation of excess labour would emerge. Furthermore, in Kosovo, an increase in the activity rate of the low-educated to the pre-projection period would significantly increase their labour supply and create a situation of substantial excess labour. By contrast, in Montenegro, the labour supply effect among the low-educated would be too insubstantial to alleviate their projected labour shortage which suggests that a much stronger increase in their activity rate would be needed to avert the imminent labour shortage.

Furthermore, the labour market situation of the group of Med-VETs would also improve. Particularly, labour shortages – as projected by the baseline scenario – would be averted altogether in Albania and postponed to the early 2030s in North Macedonia. By contrast, in Bosnia and Herzegovina, the labour shortage situation as projected by the baseline scenario would be averted altogether and instead, a situation of substantial and persistent excess labour would emerge.

5.4. RESULTS OF THE HIGH POLICY ATTENTION TO EDUCATION SCENARIO

Figure 9 presents simulation results of the high policy attention to education scenario which assumes a strong role of the state in upgrading the skill mix of the working-age population towards Med-GENs and the highly educated. It shows that in all six Western Balkan countries except Kosovo projected labour shortages among the low-educated and Med-VETs under the baseline scenario would further intensify. In Kosovo, this policy would help to significantly lower the substantial excess labour among Med-VETs but to also create a situation of labour shortage among the low-educated much earlier than under the baseline scenario.

By contrast, in the majority of Western Balkan countries, labour shortages among Med-GENs and the highly educated as projected by the baseline scenario would disappear and turn into excess labour. In some WB6 countries, however, excess labour as projected by the baseline scenario would further intensify in this context, such as among Med-GENs in Kosovo and the highly educated in Bosnia and Herzegovina and Montenegro.

5.5. RESULTS OF THE JOINT LABOUR MARKET POLICY AND HIGH POLICY ATTENTION TO EDUCATION SCENARIO

Figure 10 depicts simulation results of the joint labour market policy and high policy attention to education scenario. It shows that the labour market situation of the low-educated and Med-VETs as projected by the baseline scenario would further deteriorate and that in all WB6 countries labour shortages would already emerge during the projection period. The only exceptions are the low-educated in Bosnia and Herzegovina and Kosovo who would face excess labour beyond the projection period. In Kosovo, excess labour among the low-educated would be particularly pronounced.

By contrast, in all WB6 countries, Med-GENs and the highly educated would instead experience substantial excess labour.

5.6. RESULTS OF THE HIGH GDP GROWTH SCENARIO

Simulation results of the high GDP growth scenario highlight that higher projected future growth would result in an increase in labour demand among all educational groups but to varying degrees (see Figure 11). Therefore, in contrast to the baseline scenario which projects labour shortages mainly among the low-educated and Med-VETs until 2030, the six Western Balkan countries would experience labour shortages among almost all educational groups until 2030.

Notable exceptions can be found in Montenegro and Kosovo. In Montenegro, both Med-VETs and the highly educated would instead face labour shortages shortly after 2030. In Kosovo, apart from the highly educated (where a labour shortage would emerge earlier), there would still be excess labour mainly among Med-VETs but temporarily also among the low-educated and Med-GENs.

5.7. RESULTS OF THE CHANGE IN ECONOMIC STRUCTURE SCENARIO

Simulation results of the change in economic structure scenario which assumes a shift in labour demand from the low-educated and Med-VETs to Med-GENs and the highly educated are depicted in Figure 12 below. It highlights that, except for the low-educated in Montenegro who would still soon face a labour shortage, situations of actual or imminent labour shortage among the low- educated and Med-VETs as projected by the baseline scenario would be averted. Instead, in some WB6 countries situations of excess supply would emerge such as among the low-educated in Albania, North Macedonia, Serbia and Kosovo or among Med-VETs in Albania, Montenegro and Kosovo.

By contrast, Med-GENs and the highly educated would experience labour shortages in all Western Balkan countries except for Kosovo. In Kosovo, this shift in labour demand would help to greatly reduce excess labour supply within the projection period.

5.8. RESULTS OF THE JOINT HIGH GDP GROWTH AND THE CHANGE IN ECONOMIC STRUCTURE SCENARIO

Simulation results of the joint high GDP growth and structural change scenario are shown in Figure 13 below. It points to a sizeable increase in labour demand among Med-GENs and the highly educated in all WB6 countries, aggravating existing or imminent labour shortages. In fact, in all WB6 countries, Med-GENs and the highly educated would face partly substantial labour shortages during the projection period.

Conversely, labour demand effects are rather moderate among the low-educated and Med-VETs and, wherever more substantial, would either lead to or exacerbate excess labour. This is the case for the low-educated in Albania, North Macedonia, Serbia and Kosovo and for Med-VETs in Montenegro and Kosovo.

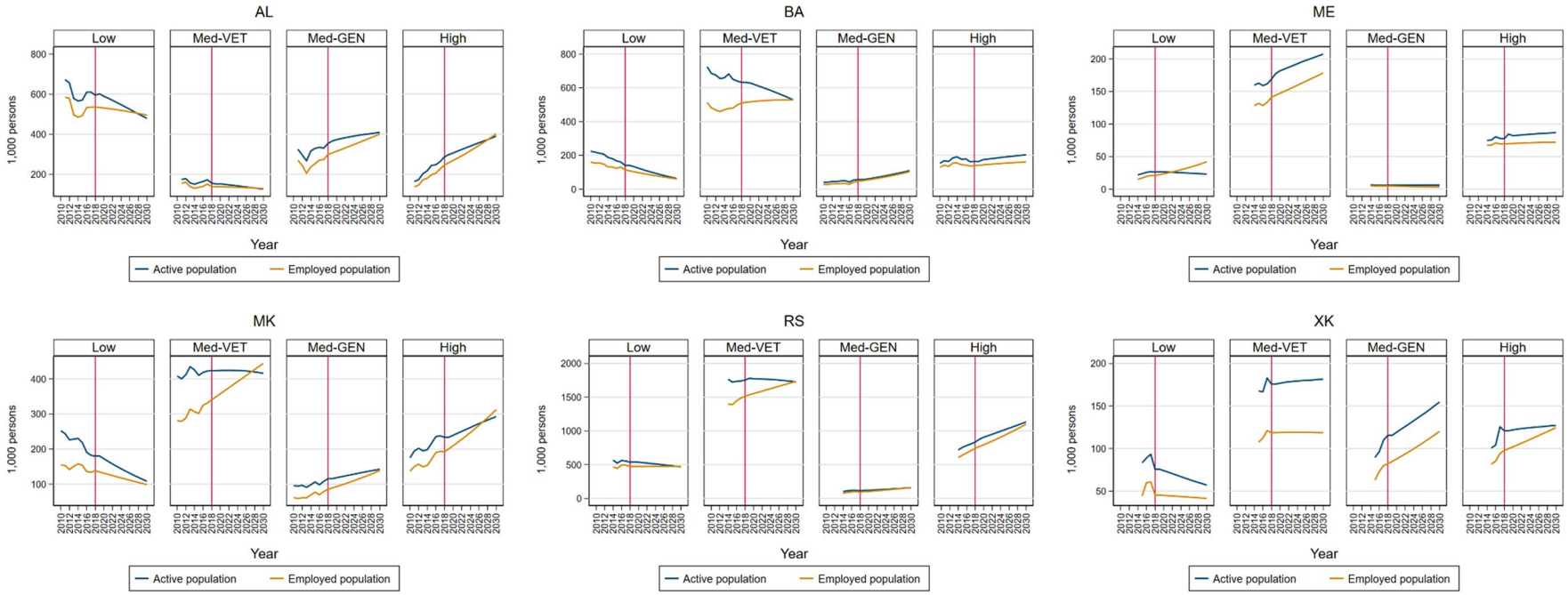
5.9. RESULTS OF THE DEVELOPMENT SCENARIO (COMBINING ALL PREVIOUS SCENARIOS)

Simulation results of the development scenario point to important changes (see Figure 14). In particular, while the low-educated in Albania, Montenegro and North Macedonia would still face labour shortages either within or shortly after the projection period, those in Bosnia and Herzegovina, Serbia and Kosovo would experience excess labour. Labour shortages of the low-educated are moderate in Bosnia and Herzegovina and Serbia, but substantial in Kosovo.

Similarly, there would be labour shortages among Med-VETs in Albania, Montenegro, North Macedonia and Serbia within the projection period and in Bosnia and Herzegovina sometime after the projection period. By contrast, in Kosovo, Med-VETs (like the low-educated) would face high and persistent excess labour.

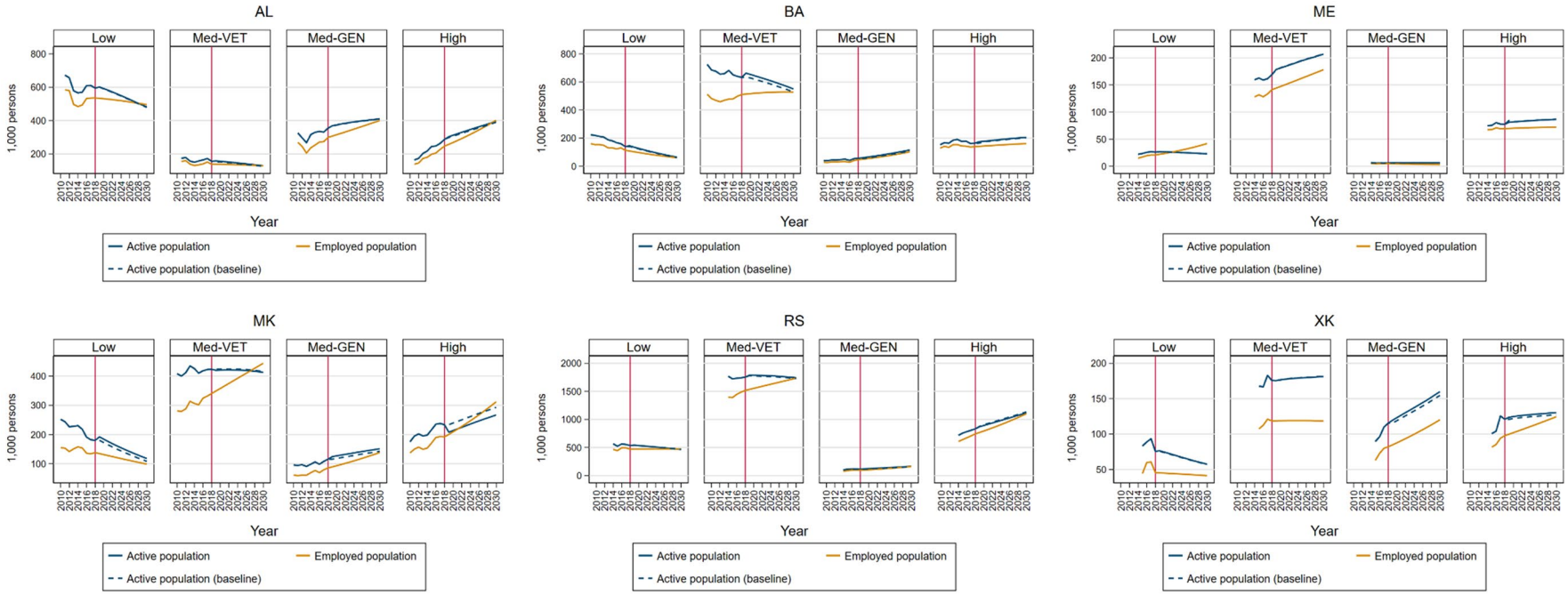
The strong increase in labour demand – which in many cases exceeds the more moderate increase in labour supply – would also result in labour shortages among Med-GENs and the highly educated in many WB6 countries. Specifically, there would be labour shortages – either during or shortly after the projection period – among both Med-GENs and the highly educated in Albania, North Macedonia and Serbia and among Med-GENs only in Montenegro. However, there would also be excess labour, such as among Med-GENs and the highly educated in Bosnia and Herzegovina and Kosovo and the highly educated in Montenegro.

Figure 6 / Labour supply and labour demand – baseline scenario



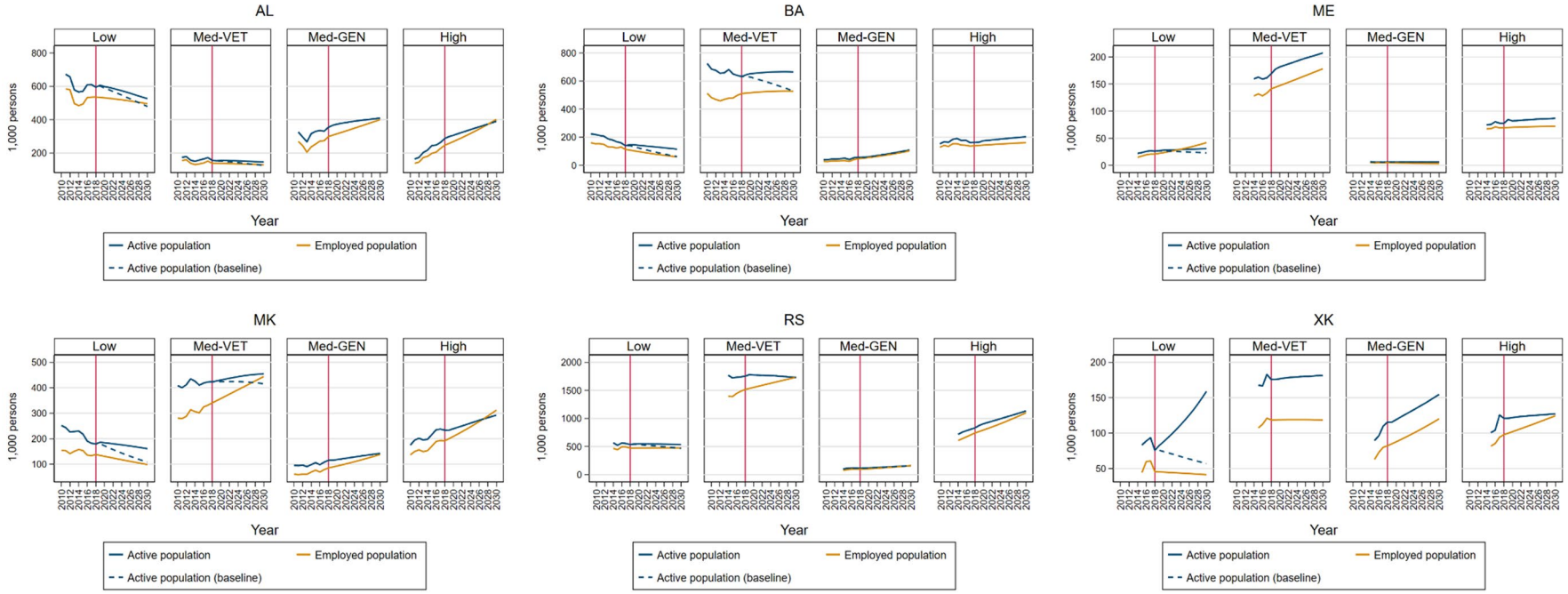
Note: Active population refers to labour supply, employed population refers to labour demand. Educational levels are divided into four categories: Low (primary or lower secondary education), Medium-general (upper secondary general education/gymnasium), Medium-VET (upper secondary vocational education and training), and High (tertiary education), based on ISCED. Projections start in 2019.
Source: LFS for Albania, Bosnia and Herzegovina, Montenegro, North Macedonia, Serbia and Kosovo; own calculations.

Figure 7 / Labour supply and labour demand – No migration scenario



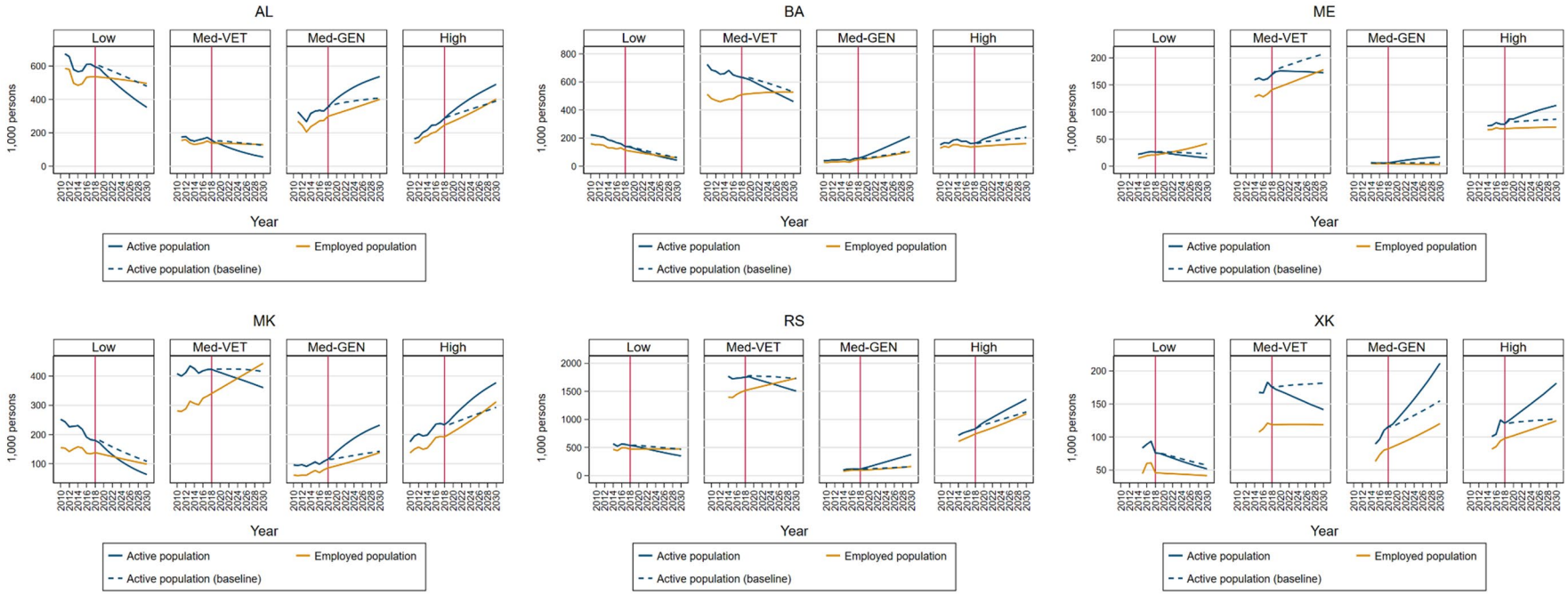
Note: Active population refers to labour supply, employed population refers to labour demand, and active population (baseline) refers to labour supply under the baseline scenario. Educational levels are divided into four categories: Low (primary or lower secondary education), Medium-general (upper secondary general education/gymnasium), Medium-VET (upper secondary vocational education and training), and High (tertiary education), based on ISCED. Projections start in 2019.
Source: LFS for Albania, Bosnia and Herzegovina, Montenegro, North Macedonia, Serbia and Kosovo; own calculations.

Figure 8 / Labour supply and labour demand – Labour market policy scenario



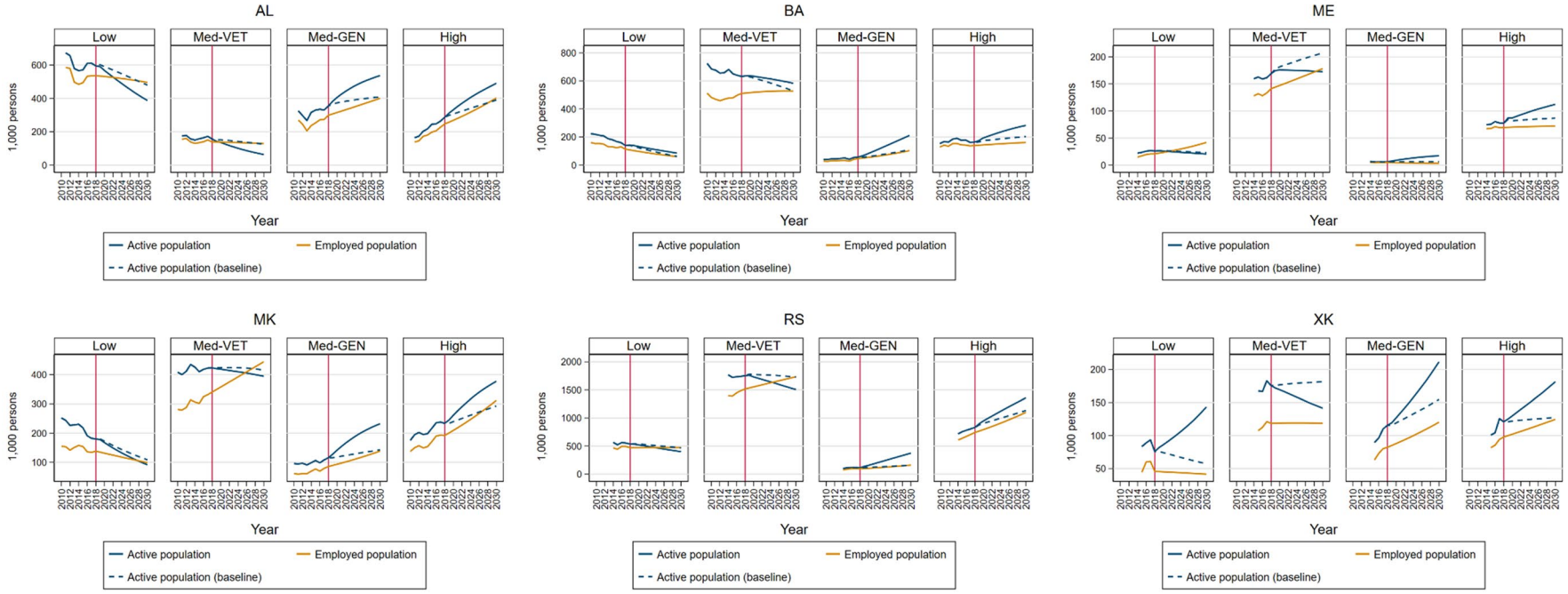
Note: Active population refers to labour supply, employed population refers to labour demand, and active population (baseline) refers to labour supply under the baseline scenario. Educational levels are divided into four categories: Low (primary or lower secondary education), Medium-general (upper secondary general education/gymnasium), Medium-VET (upper secondary vocational education and training), and High (tertiary education), based on ISCED. Projections start in 2019.
Source: LFS for Albania, Bosnia and Herzegovina, Montenegro, North Macedonia, Serbia and Kosovo; own calculations.

Figure 9 / Labour supply and labour demand – High policy attention to education scenario



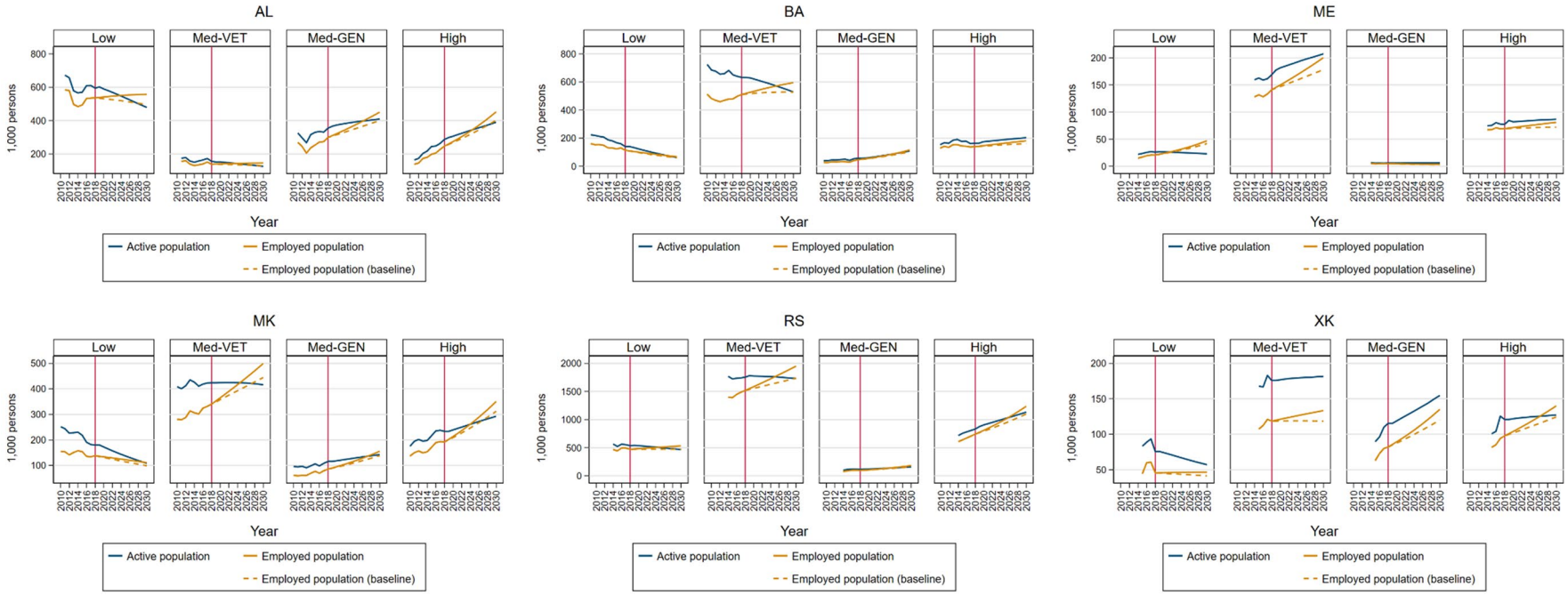
Note: Active population refers to labour supply, employed population refers to labour demand, and active population (baseline) refers to labour supply under the baseline scenario. Educational levels are divided into four categories: Low (primary or lower secondary education), Medium-general (upper secondary general education/gymnasium), Medium-VET (upper secondary vocational education and training), and High (tertiary education), based on ISCED. Projections start in 2019.
Source: LFS for Albania, Bosnia and Herzegovina, Montenegro, North Macedonia, Serbia and Kosovo; own calculations.

Figure 10 / Labour supply and labour demand – Joint labour market policy and high policy attention to education scenario



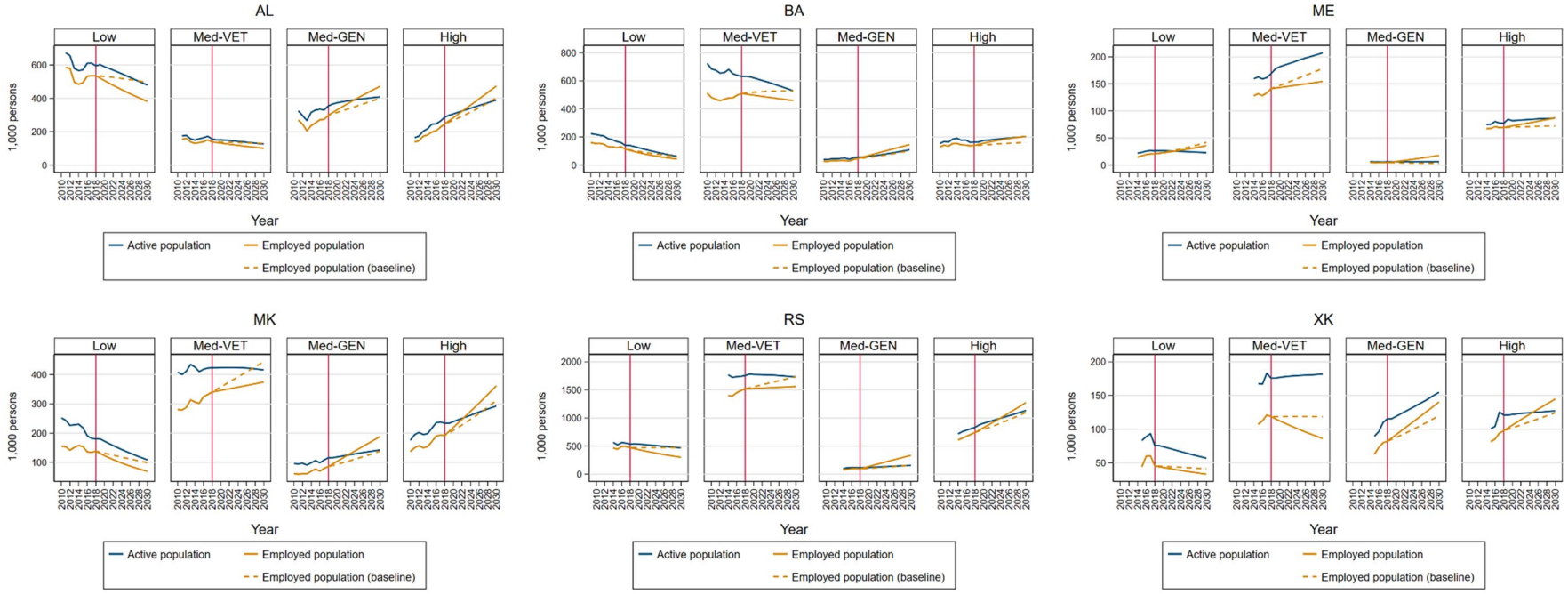
Note: Active population refers to labour supply, employed population refers to labour demand, and active population (baseline) refers to labour supply under the baseline scenario. Educational levels are divided into four categories: Low (primary or lower secondary education), Medium-general (upper secondary general education/gymnasium), Medium-VET (upper secondary vocational education and training), and High (tertiary education), based on ISCED. Projections start in 2019.
Source: LFS for Albania, Bosnia and Herzegovina, Montenegro, North Macedonia, Serbia and Kosovo; own calculations.

Figure 11 / Labour supply and labour demand – High GDP growth scenario



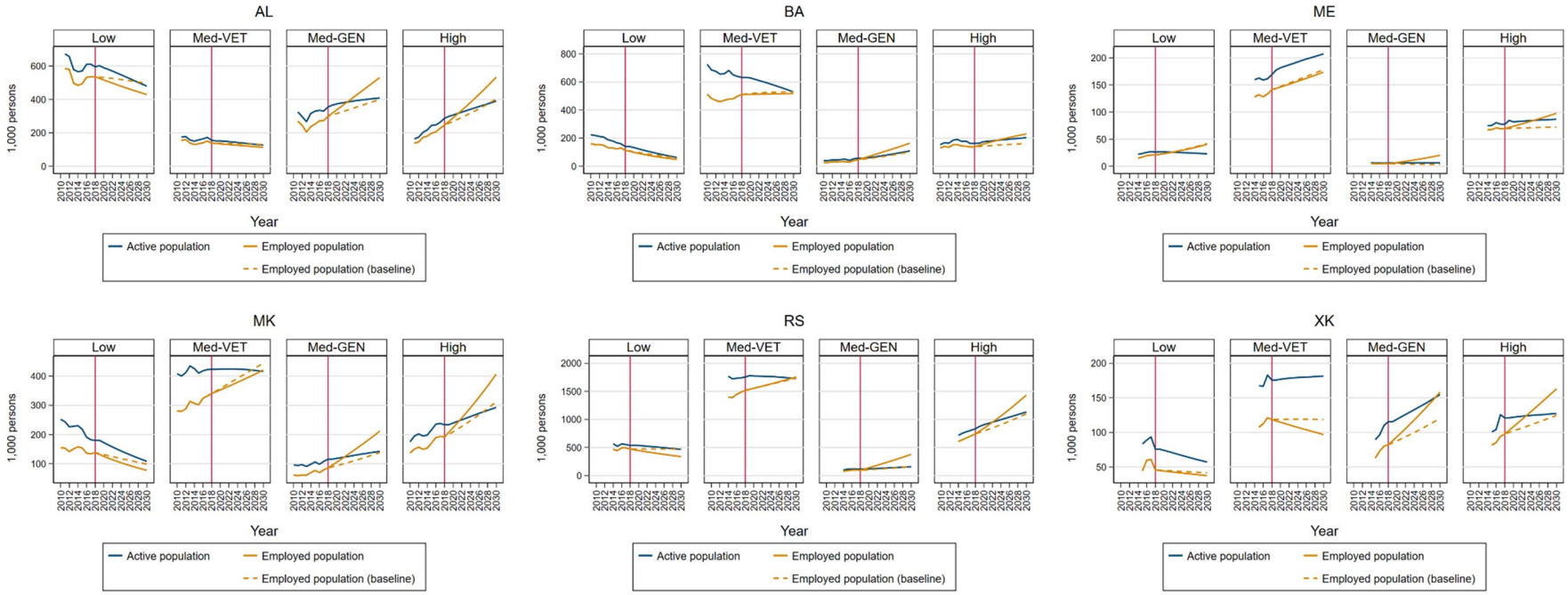
Note: Active population refers to labour supply, employed population refers to labour demand, and employed population (baseline) refers to labour demand under the baseline scenario. Educational levels are divided into four categories: Low (primary or lower secondary education), Medium-general (upper secondary general education/gymnasium), Medium-VET (upper secondary vocational education and training), and High (tertiary education), based on ISCED. Projections start in 2019.
Source: LFS for Albania, Bosnia and Herzegovina, Montenegro, North Macedonia, Serbia and Kosovo; own calculations.

Figure 12 / Labour supply and labour demand – Change in economic structure scenario



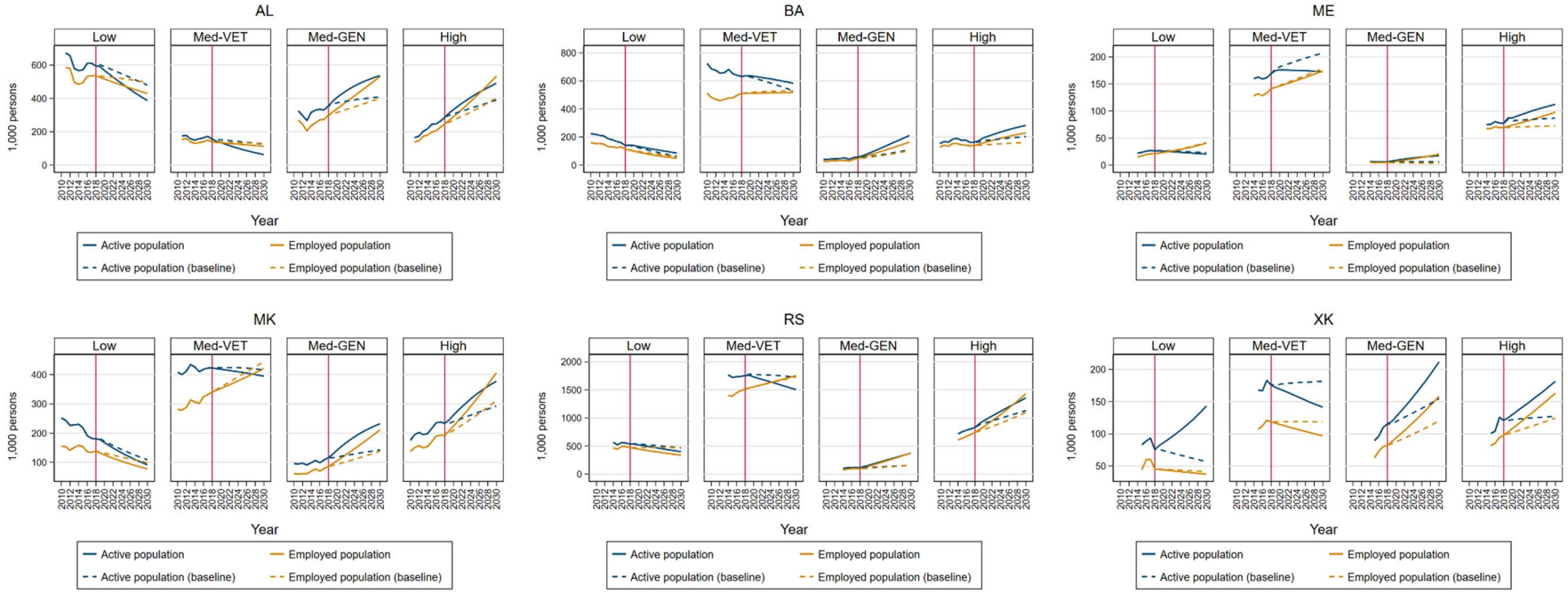
Note: Active population refers to labour supply, employed population refers to labour demand, and employed population (baseline) refers to labour demand under the baseline scenario. Educational levels are divided into four categories: Low (primary or lower secondary education), Medium-general (upper secondary general education/gymnasium), Medium-VET (upper secondary vocational education and training), and High (tertiary education), based on ISCED. Projections start in 2019.
Source: LFS for Albania, Bosnia and Herzegovina, Montenegro, North Macedonia, Serbia and Kosovo; own calculations.

Figure 13 / Labour supply and labour demand – Joint high GDP growth and structural change scenario



Note: Active population refers to labour supply, employed population refers to labour demand, and employed population (baseline) refers to labour demand under the baseline scenario. Educational levels are divided into four categories: Low (primary or lower secondary education), Medium-general (upper secondary general education/gymnasium), Medium-VET (upper secondary vocational education and training), and High (tertiary education), based on ISCED. Projections start in 2019.
Source: LFS for Albania, Bosnia and Herzegovina, Montenegro, North Macedonia, Serbia and Kosovo; own calculations.

Figure 14 / Labour supply and labour demand – Development scenario



Note: Active population refers to labour supply, employed population refers to labour demand. Active population (baseline) refers to labour supply and employed population (baseline) to labour demand under the baseline scenario. Educational levels are divided into four categories: Low (primary or lower secondary education), Medium-general (upper secondary general education/gymnasium), Medium-VET (upper secondary vocational education and training), and High (tertiary education), based on ISCED. Projections start in 2019.
Source: LFS for Albania, Bosnia and Herzegovina, Montenegro, North Macedonia, Serbia and Kosovo; own calculations.

6. Summary and conclusion

This paper pursues a scenario analysis to shed light on the potential future developments of labour supply and labour demand for different skill groups in the six Western Balkan countries. It differentiates between four educational levels, namely Low (primary or lower secondary education), Medium-general (upper secondary general education), Medium-VET (upper secondary vocational education and training), and High (tertiary education). It takes a medium-term perspective and looks at a projection period until 2030.

Simulation results of the *baseline scenario*, which rest on the extrapolation of past trends, show that within the projection period (2019-2030), situations of labour shortage and excess labour for different educational groups would coexist alongside each other in the WB6. In particular, in all WB6 countries, the low educated would experience a situation of labour shortage either already within the projection period or shortly after. The main factor here is the very low activity rates of the low-educated in the Western Balkans. Furthermore, in Albania, Bosnia and Herzegovina, North Macedonia and Serbia, the group of Med-VETs would also face labour shortages within or shortly after the projection period but would continue to experience substantial excess labour supply beyond the projection period in Montenegro and Kosovo. Similarly, Med-GENs would face labour shortages towards the end of or shortly after the projection period in Albania, North Macedonia and Serbia but persistent excess labour beyond the projection period in Kosovo. In Bosnia and Herzegovina and Montenegro, the supply of and the demand for Med-GENs would be well aligned and in a state of equilibrium. Likewise, in Albania, North Macedonia, Serbia and Kosovo, the highly educated would face labour shortages towards the end of or shortly after the projection period but persistent and growing excess labour beyond the projection period in Bosnia and Herzegovina and Montenegro.

Additional scenarios point to important country-specific labour market responses and indicate policy options which could help to mitigate projected labour market imbalances for different skill groups:

For instance, *policies which lead to zero net migration* among all educational groups would have little discernible effect in the majority of WB6 countries since net migration, while quite sizeable in absolute terms, only accounts for a small share of the total working-age population 15+. There are, however, some notable exceptions. In view of the sizable net emigration, zero net migration would alleviate the imminent labour shortage among the low-educated and Med-GENs in North Macedonia, Med-VETs in Bosnia and Herzegovina, the highly educated in Kosovo and would further enhance excess labour supply among Med-GENs in Kosovo. Conversely, in view of the substantial net immigration, zero net migration would cause a labour shortage among the highly educated in North Macedonia right at the beginning of the projection period.

Labour market policies, which mainly aim to increase the activity rates of the low-educated and Med-VETs, would lead to an increase in their labour supply and subsequently delay projected labour shortages among the low-educated and Med-VETs in Albania and among Med-VETs in North Macedonia. In some WB6, this would even turn projected labour shortages into excess labour supply,

such as among the low-educated and Med-VETs in Bosnia and Herzegovina or the low-educated in North Macedonia, Serbia and Kosovo. In Montenegro, however, the labour supply effect among the low-educated would be too small to alleviate their projected imminent labour shortage.

Likewise, *education policies* which put strong emphasis on upgrading the skill mix of the working-age population towards Med-GENs and the highly educated would, on the one hand, exacerbate projected labour shortages among the low-educated and Med-VETs in all WB6 countries (except Kosovo). On the other hand, in most WB6 countries, such policies would turn projected labour shortages among Med-GENs and the highly educated into excess labour and, in some WB6 countries, they would further intensify projected excess labour, such as among Med-GENs in Kosovo and the highly educated in Bosnia and Herzegovina and Montenegro.

Joint labour market and education policies would exacerbate labour market imbalances and lead to labour market shortages among the low-educated and Med-VETs during the projection period in all WB6 countries, except for Bosnia and Herzegovina and Kosovo, where the low-educated would face excess labour beyond the projection period. By contrast, in all WB6 countries, Med-GENs and the highly educated would instead experience substantial excess labour.

Higher GDP growth would result in an increase in labour demand among all educational groups and, with only a few exceptions, an increase in labour shortages within the projection period in all six Western Balkan countries. By contrast, in Kosovo, there would still be excess labour among Med-VETs and temporarily also among the low-educated and Med-GENs.

Structural change would generally avert actual or imminent labour shortage among the low- educated and Med-VETs as projected by the baseline scenario and, in some WB6 countries, lead to excess supply among the low-educated and Med-VETs in Albania and Kosovo, among the low-educated only in North Macedonia and Serbia and among Med-VETs only in Montenegro. By contrast, Med-GENs and the highly educated would experience labour shortages in all Western Balkan countries except for Kosovo.

Higher GDP growth and structural change together would lead to moderate labour demand effects among the low-educated and Med-VETs but would result in significant increases in labour demand among Med-GENs and the highly educated in all WB6 countries, which would aggravate already existing or imminent labour shortages among Med-GENs and the highly educated and lead to partly substantial labour shortages during the projection period in all WB6.

Finally, *development policies* which combine labour market and education policies with high GDP growth and structural change would still result in labour market imbalances among the four educational groups, as the purpose of the exercise was not to fine-tune the model to avoid any mismatches to exist even in this (from a development perspective) positive scenario. In particular, the low-educated would face labour shortages either within or shortly after the projection period in Albania, Montenegro and North Macedonia and excess labour in Bosnia and Herzegovina, Serbia and Kosovo. Med-VETs would experience labour shortages within or shortly after the projection period in all WB6 except for Kosovo, where (like the low-educated) they would face high and persistent excess labour. Moreover, there would be labour shortages – either during or shortly after the projection period – among both Med-GENs and the highly educated in Albania, North Macedonia and Serbia and among Med-GENs only in Montenegro.

Conversely, there would be excess labour among Med-GENs and the highly educated in Bosnia and Herzegovina and Kosovo and the highly educated in Montenegro.

The analysis points to important policy options. For instance, *policies which lead to zero net migration* would not have a significant impact on labour supply over the time horizon of this modelling exercise and would therefore not be particularly important in alleviating labour market imbalances in the WB6. The only exception is North Macedonia (a beneficiary of return migration flows from intra-regional migration), where such a policy should be avoided due to the detrimental effect it would have on the supply of the highly educated. By contrast, *labour market policies* in terms of increases in activity rates would increase the labour supply of the low-educated and Med-VETs, helping to avert labour market shortages. However, the scope of labour policy action differs across the WB6 and is comparably small in Albania, where activity rates of both educational groups are already high, but much higher in the remaining countries. An important aspect in this regard is gender-specific differences in activity rates which tend to be higher, the lower the level of education. Hence, increasing the activity rates of women is generally of key importance. In view of observable effects, the increase in the activity rate among the low-educated in Montenegro needs to be much higher to avert imminent labour market shortages. A higher activity rate of women should be an important policy objective. Conversely, in Kosovo, a more moderate increase would suffice to address projected imminent labour shortages among the low-educated. This also applies to Bosnia and Herzegovina, where a more moderate increase in the activity rate would be enough to address projected imminent labour shortages among Med-VETs.

Some important policy options can also be deduced from the *development scenario* which combines increases in GDP growth and structural change with labour market and education policies and therefore looks at a situation when countries have embarked on an improved economic development trajectory. In addition to labour market policies, it also points to the importance of *education policies* for upgrading the skill mix of the workforce. It shows that a shift in the skill mix of the working-age population towards Med-GENs and the highly educated is indispensable in all WB6 to be able to meet the growing demand for skilled labour from higher economic growth and structural change. It also highlights the fact that some labour market imbalances would occur in almost every WB6 country – which is to be expected in such a context. Despite applying an equally optimistic ‘development’ scenario as for the other WB6 economies, labour market imbalances remain most pronounced in Kosovo where all educational groups experience substantial excess labour. This suggests that in the case of Kosovo, much higher GDP growth would be needed to address the substantial labour market imbalances that would arise in the development scenario.

7. References

World Bank (2020). An Uncertain Recovery. Western Balkans Regular Economic Report No. 18.

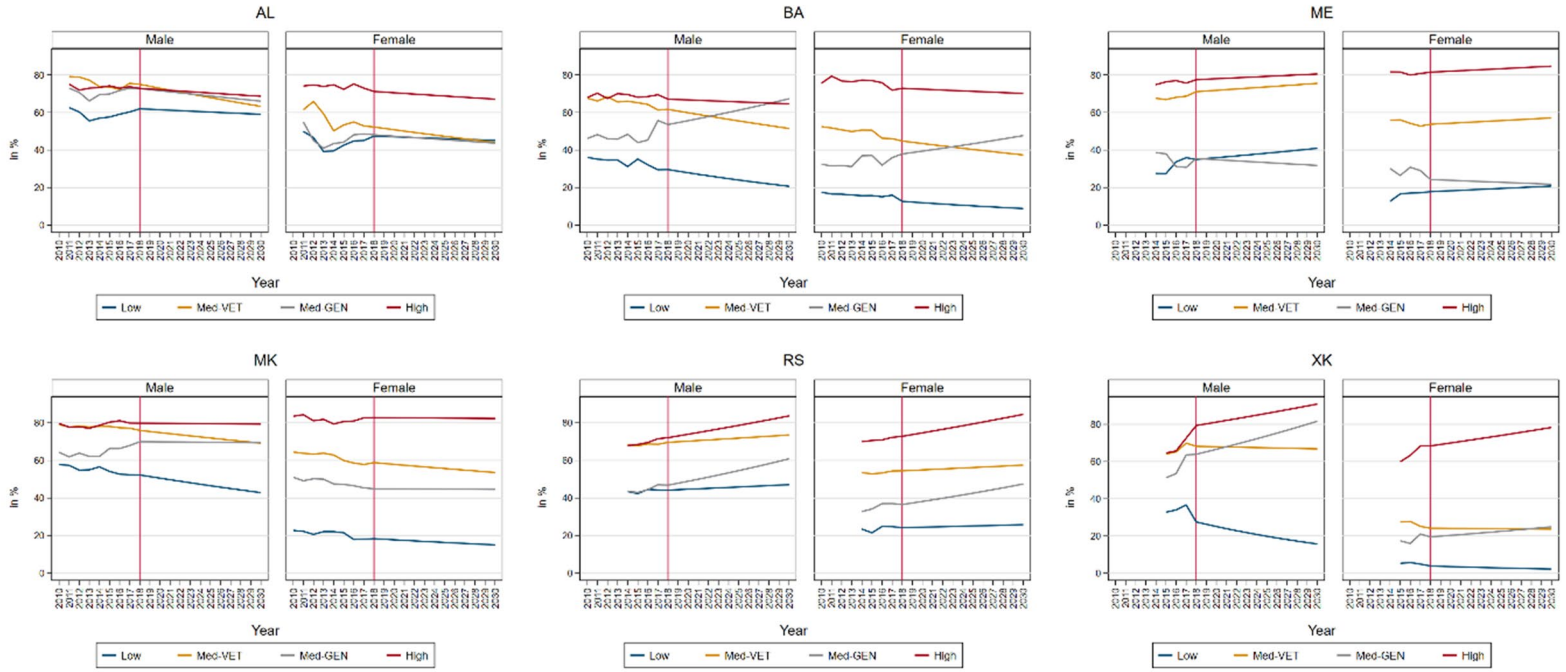
Fotakis, C., and Peschner, J. (2015). Demographic change, human resources constraints and economic growth – The EU challenge compared to other global players. European Commission (DG EMPL) Working Paper 1/2015.

Leitner, S. (2021). Net Migration and its Skill Composition in the Western Balkan Countries between 2010 and 2019: Results from a Cohort Approach Analysis. wiiw Working Paper No. 197.

Peschner, J., and Fotakis, C. (2013). Growth potential of EU human resources and policy implications for future economic growth. European Commission (DG EMPL) Working Paper 3/2013.

Stehrer, R., and Leitner, S.M. (2019). Demographic Challenges for Labour Supply and Growth. wiiw Research Report No. 439.

Figure A.1 / Past and future projected skill-specific activity rates by sex



Source: LFS for Albania, Bosnia and Herzegovina, Montenegro, North Macedonia, Serbia and Kosovo; own calculations.

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