MONTENEGRO

SELECTED ISSUES

May 2018

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MONTENEGRO

SELECTED ISSUES

May 4, 2018

Approved By
European Department

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CONTENTS

LONG-TERM GROWTH PROSPECTS AND THE OUTPUT GAP IN MONTENEGRO[1]

The methodologies used in this paper to estimate medium-term and long-term growth—the production function approach and filtering—typically assume stable population growth and an economy not too exposed to external shocks. These assumptions usually apply to relatively large and closed economies. They are not fully satisfied in Montenegro, a small and relatively new country, but this offers opportunities and pitfalls at the same time. In a scenario where Montenegro joins the EU, implements growth-enhancing structural reforms, improves governance, builds human and physical capital, growth could easily exceed the illustrative "high-growth policy scenario" described below. Moreover, in such a virtuous circle, population could exceed the "best" scenario derived from UN population forecasts, which in their median variant drives modest growth in the baseline scenario. The paper shows that the difference between virtuous and vicious circles are mainly driven by policies rather than by model uncertainty.

A. Introduction

1.   Projections of long-term growth allow policy makers to assess future available resources, and they have implications for today's policy choices for fiscal sustainability, pensions, health care, and education. Updating long-term projections regularly and drawing conclusions from this exercise should improve the quality of decision making even if the exercise itself includes significant elements of uncertainty. Similarly, potential output and the output gap are unobserved, yet they are key for policy making. Output gap estimates are used to measure the amount of slack in the economy, help identify the fiscal stance, and gauge the impact of structural reforms. These estimates serve as the basis for macroeconomic policy discussions and guide the appropriateness and timing of consolidation or stimulus policies.

2.   Long-term growth is best considered in a production-function context using labor, capital and total factor productivity as inputs. We calculate an estimate of long-term growth based on current policies —the baseline projection—and estimates around the baseline that are due to model uncertainty and those due to policy choices. We also consider upside and downside scenarios for each factor to get a better view of the possible distribution of outcomes. Variations due to model uncertainty are reasonably small, and there is substantial room for policy maneuver, even if the policies themselves are not necessarily easy.

3.   For medium-term projections, there are different methods to estimate potential output and the output gap, and it is difficult to assess which is more accurate. For small open economies, the challenges are even bigger as large external shocks and structural breaks create larger fluctuations in the growth profile. In addition, in Montenegro the available time series are

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[1] Prepared by Marzie Taheri Sanjani and Min Song.

short and not all data that would be necessary for a complete analysis are available. Conventional methods in the literature are statistical filtering approaches (Hodrick and Prescott (1997), Baxter and King (1999), Christiano Fitzgerald (2003), Clark (1987), Marcet and Ravn (2004)), econometric approaches (Borio et. el. (2013), Bens et. el. (2010), Blagrave (2015)) and methods based on economic models (Justiniano et. el. (2012), Smets and Wouters (2007), Rabanal and Taheri Sanjani (2015)). Each of the three standard approaches—univariate filters, multivariate filters, and production functions—has advantages and disadvantages. In this paper, we focus on statistical filtering, i.e. two variations of the Hodrick-Prescott (HP) filter, and production function-based methods because of data availability.

4.   Montenegro has had a volatile historic growth profile, which adds to the complexity of the computation of long-run growth. Montenegro is a small, open, euroized economy that is highly dependent on tourism and external financing. It has experienced volatile growth since independence in 2006, driven by domestic and external shocks. The short period of reliable GDP data, starting only in 2006, also makes the analysis more challenging.[2] After a protracted period of consolidation following the global financial

Real GDP Growth
(Percent)

Sources: Central Bank of Montenegro; and IMF staff estimates.
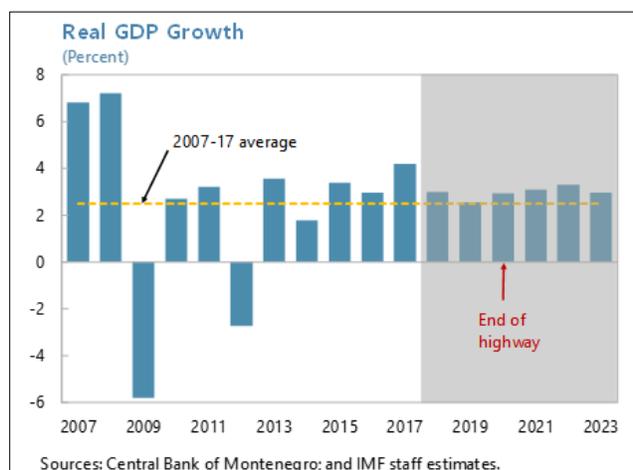
crisis, the economy is growing, bolstered by large investment projects, including the construction of the first section of the Bar-Boljare highway.[3] The first section has contributed to growth through demand effects since 2015. It is expected to be completed by 2019, after which some supply side effects are expected.

5.   Results suggest that long-term growth is likely to decline in the absence of major policy efforts due to population dynamics. Our baseline projects growth declining from about 3 percent in 2018 to around zero in 2050. Our policy-based scenarios imply a range of long-run growth paths of 1¼ percentage points above or below our baseline estimates, and possibly more for the upside if productivity improves. Productivity growth has the largest potential impact and could be increased through education and improvements in the business environment. Improvements to labor markets also have potentially large positive effects, as do incentives towards more capital accumulation. Finally, we estimate potential GDP and the current output gap. The analysis suggests that there currently is a small positive output gap.

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[2] There is some pre-2006 GDP data, but it is based on a different, less reliable methodology and data. The current methodology was first applied in 2006. For the purpose of this project, and in line with the authorities, we focus on post-2006 data for which the methodology is consistent with the ESA 2010 and NACE 2 standards.

[3] See 2017 Montenegro – Selected Issues Paper on the impact of the highway, which is likely to have lower economic returns than standard investment projects.

B. Estimating Long-Term Growth, Production Function Approach

6.   The production function (PF) method is based on the standard neoclassical growth model. Output is obtained after combining three inputs in a production function: labor, physical capital, and total factor productivity (TFP). Real GDP is defined by the familiar Cobb-Douglass growth accounting formula with constant returns to scale as: $Y_t = A_t K_t^{1-\alpha} L_t^{\alpha}$

7.   In the equation above Y_t is the level of output, L_t is the level of employed labor, K_t is the level of physical capital, and A_t is the so-called Solow residual, which accounts for technological and human-capital factors. The parameter alpha (α) is the labor share of the economy. Output growth is broken down into contributions from capital (K), labor (L), and TFP (A). For the historical period 2006-17, we compute A as the residual of the growth accounting formula, while for the projection period 2018-50 we make assumptions about the growth rates of capital, labor, and TFP. The capital stock dynamics follow the standard accumulation process: $K_t = K_{t-1}(1 - \delta) + I_t$, with I_t indicating the level of real investment at every period and δ the depreciation of the previous period's capital stock. In the baseline model, the labor share (α) is set at the EU-average value 65 percent—following the discussion in D'Auria et. el. (2010) and Bosworth and Collins (2003). We use a rate of 6 percent for capital depreciation (delta), and we assume the capital stock ratio to GDP (K/Y) in 2005 was 1.8, as provided by the authorities and validated by comparisons. We explore how sensitive the results are to the assumptions.

8.   Growth over 2006-17 was 2.5 percent on average and 2.4 percent annualized. Due to the variability of growth the annualized growth figures are more representative, but there is little difference in practice. In the baseline model, capital contributed 2.3 percentage points on an annualized basis, labor 0.7 percentage points, and TFP subtracted 0.5 percentage points per year. The negative contribution of TFP is unusual and only at the 20th percentile of 10-year average TFP growth rates of emerging and advanced economies measured over

Contributions to Growth - Baseline Scenario
(Percent)

Sources: Monstat; UN Population Prospects 2017; and IMF staff estimates.

2005-14. It is mechanically mainly explained by the global financial crisis (GFC) and the Europe-related 2012 crisis. Abstracting from the crisis years 2009 and 2012, TFP growth was 0.6 on average, which is more in line with other countries at similar levels of development. However, the low historical TFP growth could also reflect the ongoing process of moving from a planned to a market economy, which renders some of the capital stock obsolete. Capital stock obsolescence above the assumed depreciation rate would reduce measured TFP because capital would be overestimated (see sensitivity analysis). However, it could also reflect more general productivity problems.
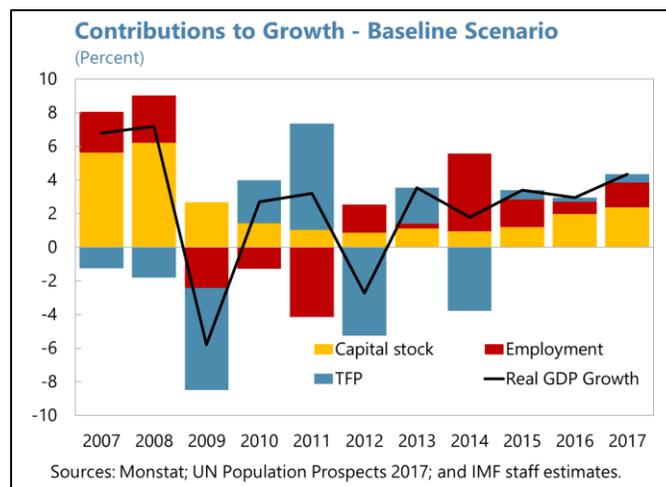
Contributions to Growth – Baseline Scenario, 2007-17

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2007-17	2006-17 (annualized)
Historical output growth	**6.8**	**7.2**	**-5.8**	**2.7**	**3.2**	**-2.7**	**3.5**	**1.8**	**3.4**	**2.9**	**4.4**	**2.5**	**2.4**
Capital (0.35)	5.6	6.2	2.7	1.4	1.0	0.9	1.1	0.9	1.2	2.0	2.4	2.3	2.3
Labor (0.65)	2.4	2.8	-2.4	-1.3	-4.2	1.7	0.3	4.6	1.6	0.7	1.5	0.7	0.7
TFP	-1.2	-1.8	-6.0	2.6	6.3	-5.3	2.1	-3.8	0.6	0.2	0.5	-0.5	-0.5

Sources: Monstat; and IMF staff estimates.

9.   TFP is very sensitive to changes in model parameters. To study the sensitivity of historical TFP growth to underlying assumptions about the model parameters, we consider variations of the following parameters around the baseline: (i) the labor share; (ii) the depreciation rate; and (iii) the initial capital stock. The text table summarizes these parameter assumptions, and results for TFP are summarized further below. When the labor share goes up to 75 percent, the average TFP growth rate rises to 0.0 percent relative to -0.5 percent in baseline. A higher labor share reduces

Baseline Assumptions and Sensitivity Analysis

Labor share	**0.65**
High labor share	0.75
Low labor share	0.55
Depreciation	**0.06**
High depreciation rate	0.08
Low depreciation rate	0.04
Initial capital ratio in 2005	**1.8**
High initial capital ratio	2.3
Low initial capital ratio	1.3

Source: IMF staff estimates.

capital's historical contribution and increases TFP and labor's contribution. More depreciation increases measured TFP because the capital stock does not grow as fast, implying greater output/efficiency per unit of capital. If the depreciation of capital is assumed at 8 percent, the average TFP growth rate increases to -0.1 relative to -0.5 in the baseline. A larger initial stock of capital also increases measured TFP to 0.0 percent per year because capital accumulation is relatively smaller when the same amount of investment is added to a higher base. Depreciation and the initial capital stock only redistribute between capital accumulation and TFP because the contribution from employment is not changed. Interestingly, the historical contribution from labor only varies by 0.2 percentage points per year, whereas capital and TFP vary by 1.4 and 1.2 percentage points, respectively. In sections C, D, and E, we discuss how various factors contribute

Sensitivity of Historical Growth, 2007-17
(Average)

	Baseline	Alpha=75	Alpha=55	Delta=8	Delta=4	K/Y=2.3	K/Y=1.3	Max	Min
TFP	-0.5	0.0	-1.1	-0.1	-0.9	0.0	-1.2	0.0	-1.2
Capital	2.3	1.6	2.9	1.9	2.7	1.7	3.0	3.0	1.6
Labor	0.7	0.8	0.6	0.7	0.7	0.7	0.7	0.8	0.6

Sources: Monstat; and IMF staff estimates.

to Montenegro's long-run growth outlook and suggest some policies that can boost those factors' contribution.

C. Employment Projections

10.   Montenegro's labor markets are rigid, and weak demographics and low labor force participation constrain growth. Nevertheless, Montenegro's aging is a little less pronounced than in Southern Europe or Europe as a whole and in line with developments in Eastern Europe. Besides demographics, feeble labor force participation and high structural unemployment add to labor market rigidities (panel chart below). Montenegro's youth unemployment is high relative to its peer countries, and unemployment spells last longer on average. Labor utilization has recently supported growth. In 2015-17, unemployment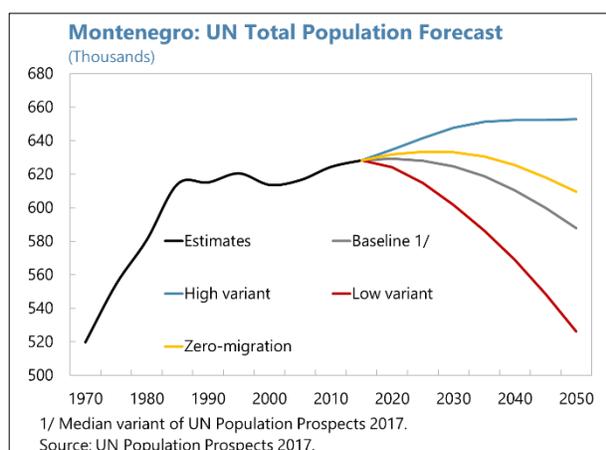 and labor participation improved, but long-term unemployment remained high (estimated at about 10 percentage points) and the labor force participation rate for the 15+ year-old population remained relatively low at around 50 percent. Montenegro's low participation rate is partly explained by high remittances and low female participation.

Labor Force Participation Rate
(Percent) /1

1/ 15+ population data used for labor force participation rate.
2/ 2015 data used for 2016 BLR data.
Sources: International Labour Organization; and IMF staff calculations.

Unemployment Rate by Duration
(Percent)

Sources: Monstat, Labor Force Survey; and IMF staff calculations.
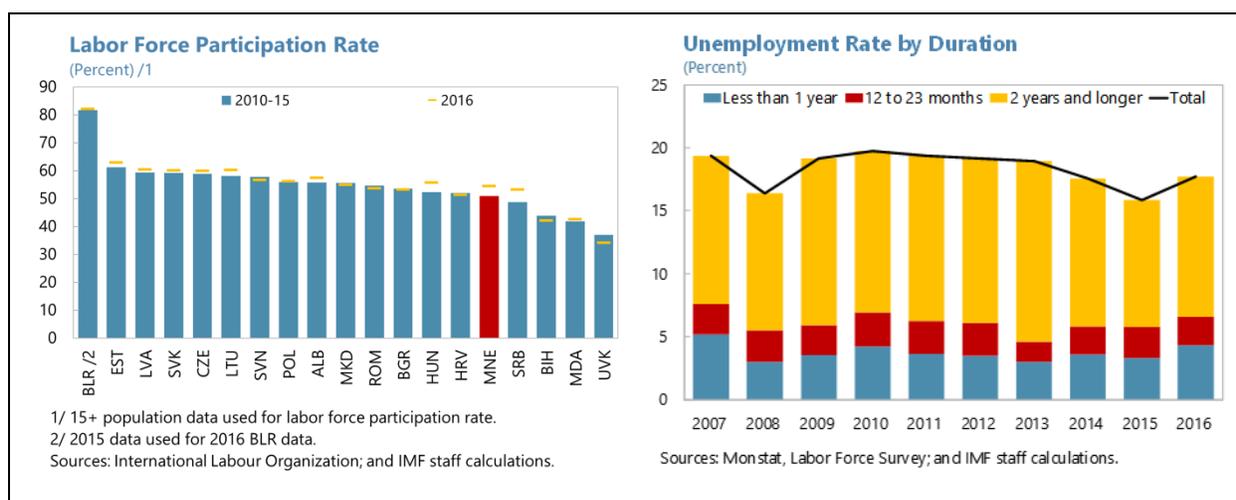
11.   Montenegro's population is projected to decline significantly over the medium term with likely negative effects on growth. The population fell during 1995-2002, since the end of the socialist regime, mainly due to emigration. The pace of emigration has slowed significantly, but continued emigration together with the aging of the working population and declining birth rates will contribute to a shrinking working-age population. The United Nations projects that Montenegro's population will decline from an estimated 629 thousand inhabitants in 2017 to 588 thousand by 2050 in the baseline medium fertility variant (a decline of almost 7 percent). Even in the high fertility variant, the population would

Montenegro: UN Total Population Forecast
(Thousands)

1/ Median variant of UN Population Prospects 2017.
Source: UN Population Prospects 2017.

increase only marginally to 653 thousand. Assuming no net emigration between 2016-50, would limit the decline in population from 588 thousand to 610 thousand (3 percent decrease from 2017).

12.   As a result of population aging, the working population is projected to decline even faster than the overall population. In the baseline, the working age population is projected to decline from 421 thousand to 352 thousand, a decline of 16 percent. A change in fertility has a delayed impact on the working-age population because the newly born enter the working-age population only 15 years from now and would raise/lower the projected number for 2050 by some +/- 30 thousand (+/- 9 percent). The zero-migration scenario has a greater initial impact on the working-age population because it is mostly people of working age who leave.

13.   In the baseline projections, we assume that employment grows broadly at the rate of the working-age population (15-65-year-old cohort). We also assume that the labor force participation (LFP) ratio relative to the 15-65-year-old cohort will increase by 0.2 percentage points per year, reflecting increased female labor market participation and increases in the effective pension age. We also assume that the unemployment rate improves by 0.2 percentage points per year reflecting a gradual reduction in structural unemployment from its high current level. In the baseline, which could be considered somewhat optimistic because of the labor force participation rate and unemployment assumptions, employment would stay essentially stable in the 225-230 thousand range through 2050. In a no-change scenario with constant labor force participation and unemployment rates, employment would fall from 229 thousand in 2017 to 192 thousand (16 percent decline).

Montenegro: UN Working Age Population Forecast
(Thousands; 15-64)

Estimates — Baseline 1/
High variant — Low variant
Zero-migration

1/ Median variant of UN Population Prospects 2017.
Source: UN Population Prospects 2017.

LFP and Unemployment Rates - Baseline Scenario
(In percent)

Labor force participation rate (15-64 year-olds)
Unemployment rate (RHS)

Sources: UN Population Prospects 2017; and IMF staff estimates.

14.   The employment scenarios use various assumptions for labor force participation, unemployment, fertility, and migration, which are factors the authorities can influence to some extent. A 0.25 percentage point per year increase/decrease in the labor force participation rate would raise/lower employment by some 25 thousand by 2050 (+/- 11 percent). A 0.25 percentage point per year decrease/increase in the unemployment rate would raise/lower employment by some 20 thousand by 2050 (+/- 9 percent). Using the high/low fertility rate variants

of the UN population projection would raise/lower employment by some 20 thousand by 2050 (+/- 9 percent). Finally, the zero-migration variant of the UN population projection would raise employment by 9 thousand by 2050 by itself (4 percent) and some 20 thousand in a combined scenario. In a high-growth upside scenario, which includes a 0.25 percentage point per year increase in labor force participation, a 0.25 percentage point per year decrease in the unemployment rate, the UN high fertility rate, and no net

Employment, 2006-50
(Thousands)

Sources: Monstat; UN Population Prospects 2017; and IMF staff projections.
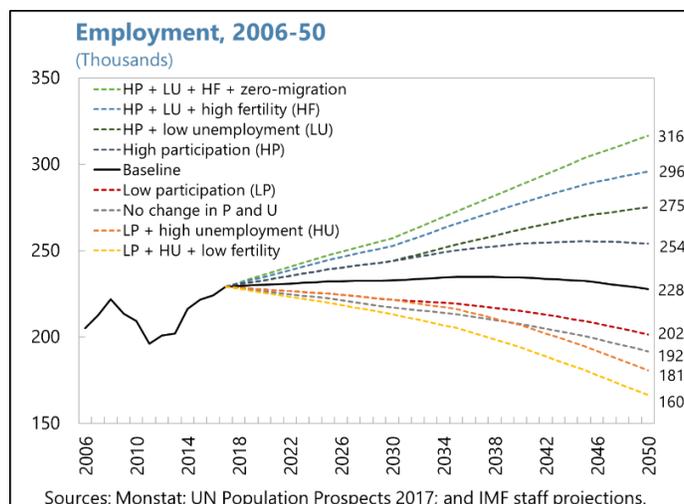
outward migration, employment would increase by 87 thousand to 316 by 2050 (38 percent). In the worse-case scenario, combining low LFP, high unemployment and low fertility employment would fall by 63 thousand to 160 thousand by 2050 (28 percent).

15.   Labor market policies can expand labor supply and lift potential growth.[4] To increase the level of employment, we recommend the following labor market policies: (1) make hiring and firing processes more flexible while preserving adequate employee protection; (2) reduce the effective labor tax wedge; (3) support policies that increase female participation (parental leave, child care); (4) increase the effective pension age through pension reform; (5) reduce the skill mismatch by improving the education system; and (6) discourage emigration and encourage immigration by improving domestic opportunities.

D.   Growth of the Capital Stock

16.   The initial capital stock and the depreciation rate are difficult to estimate. Two publicly available estimates for Montenegro are the Penn World Tables (PWT, version 9.0) and the IMF Fiscal Affairs Department's (FAD's) Investment and Capital Stock Dataset. Both databases have starting dates for the capital stock that are earlier than reliable GDP estimates, which only start in 2006. The PWT estimate for the capital-to-GDP ratio in 2006 is 2.3 calculated in constant national prices (2.8 in current US$ PPP terms)

Real Capital Stock by Source, 2006-17
(Ratio to GDP)

Sources: Penn World Table (PWT), version 9.0; Monstat; FAD Investment and Capital Stock Dataset (ICSD); and IMF staff estimates.

whereas the FAD database shows 1.2. Most of the difference is explained by different depreciation rates. The PWT implicit depreciation rate is 4 percent on average, whereas the FAD database

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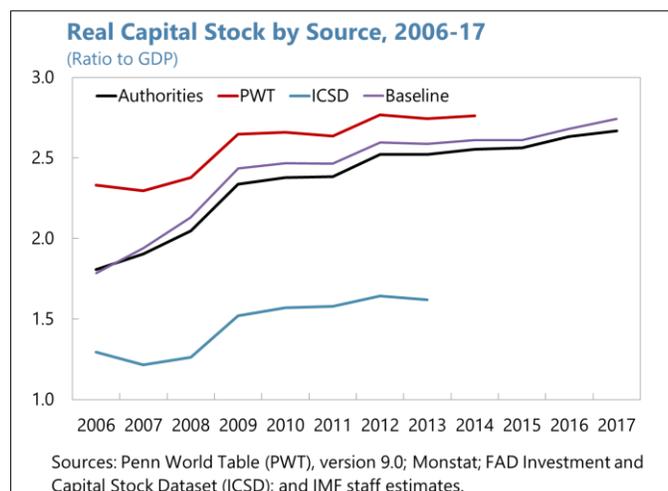
[4] Refer to chapter on labor market issues for details.

implicitly uses 6.8 percent on average. The authorities estimate that the capital-to-GDP ratio was 1.8 in 2005, and they assume a depreciation rate of 5 percent. There is some evidence th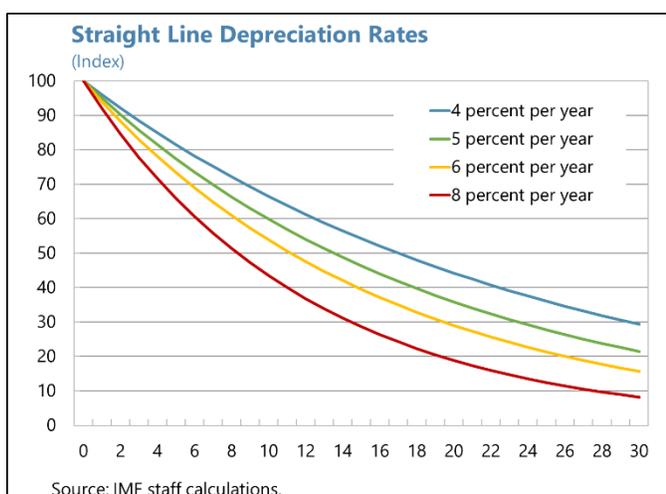at depreciation rates are increasing over time because the capital stock today consists more of short-lived IT investments and because product life cycles are declining.[5] We chose a depreciation rate of 6 percent per year, which implies a half-life for the average capital good of 11 years versus 17 years for 4 percent depreciation and 8 years for 8 percent depreciation. We

Real Capital Stock, 2006-17
(Ratio to GDP)

- Baseline
- High initial capital stock (+0.5)
- Low initial capital stock (-0.5)
- High depreciation rate (+2%)
- Low depreciation rate (-2%)

Sources: Statistical Office of Montenegro; and IMF staff estimates.

choose a ratio of 1.8 for the capital stock in 2005 because it provides a reasonable evolution of the capital stock and matches the authorities' numbers.
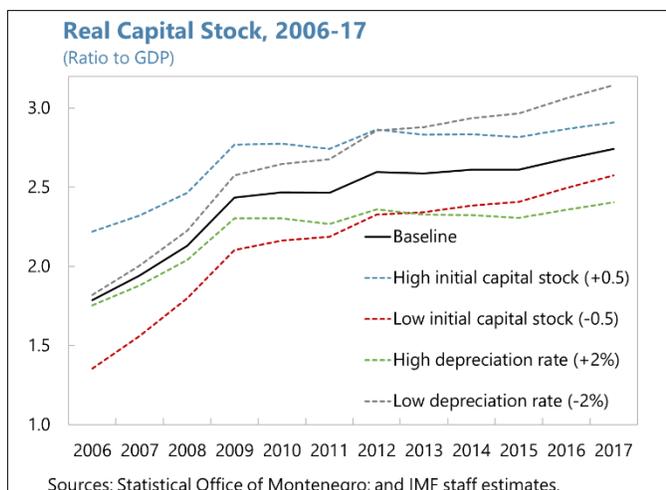
17.   Baseline projections of the capital stock are based on staff's macro-framework investment projections until 2023 and the average historical investment-to-GDP ratio (2006-17) for the long-term. In the baseline case, the investment ratio post-2023 is set at 28 percent, which is a relatively high in absolute terms but within the highest and lowest 5-year rolling averages between 2006-17 (32 percent and 22 percent respectively).[6] We also consider high and low depreciation rates and high and low initial capital ratios but using the same real investment path as in the baseline. We also use a high investment case with 2 percentage points of GDP higher investment over the projection period and a low case with 2 percentage points lower investment.

Straight Line Depreciation Rates
(Index)

- 4 percent per year
- 5 percent per year
- 6 percent per year
- 8 percent per year

Source: IMF staff calculations.

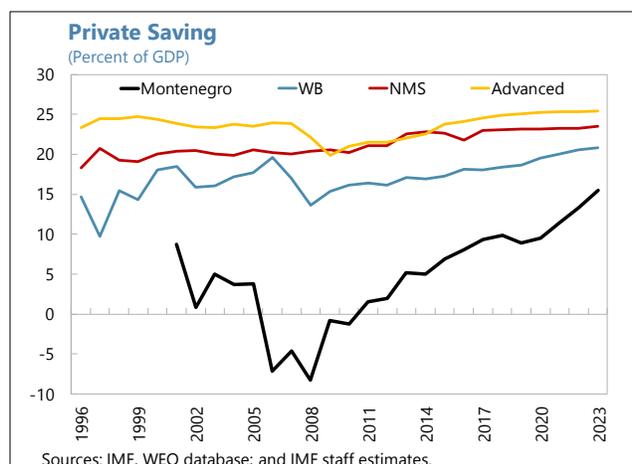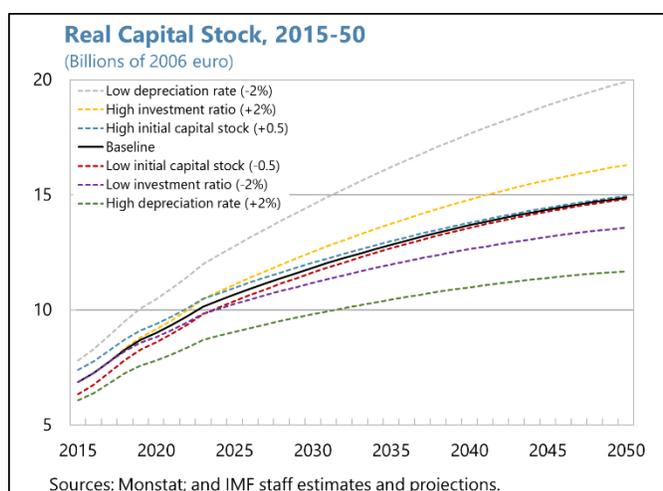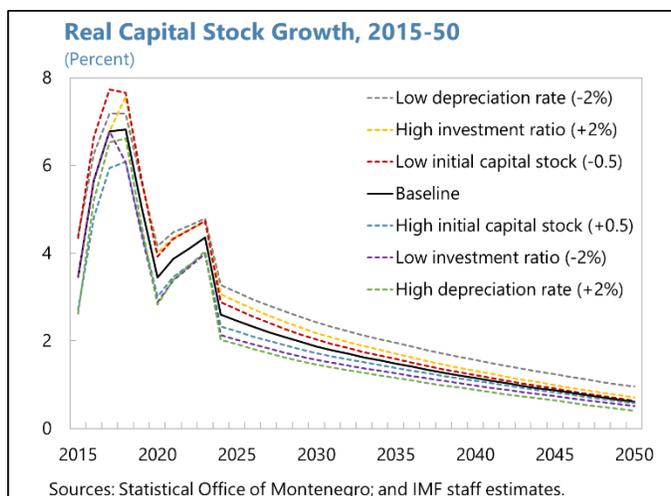[5] IMF (2017), "FAD Investment and Capital Stock Database 2017: Manual & FAQ - Estimating Public, Private, And PPP Capital Stocks."

[6] We are using the real investment-to-GDP ratio calculated from real GDP components. The real ratio is higher than the nominal investment-to-GDP ratio due to investment deflator issues. In 2017, the nominal ratio was 30 percent relative to a real ratio of 33 percent.

18.   The scenarios with high/low depreciation rates and high/low initial capital stocks should be considered different models of the economy because they are not policy variables. The initial capital stock obviously is not a variable that can be altered by policy choices, and the depreciation rate probably is also not responsive to policy changes. The variations in these parameters assume that the model of the economy is different both for the past and the future. A high initial capital stock of 2.8 times GDP in 2005 (22 percent higher than the baseline) results in in a capital stock growth that is only 0.2 percent lower than the baseline over the projection period (due to higher depreciation of a larger stock) (and vice-versa), suggesting that the initial capital stock assumption is not very crucial for capital accumulation. This can also be seen by the fact that both the high and low initial capital stocks converge with the baseline over the projection period. By contrast, a 2 percentage point higher/lower depreciation rate results in a capital stock growth rate that is 0.34/0.67 percent

Real Capital Stock Growth, 2015-50
(Percent)

- Low depreciation rate (-2%)
- High investment ratio (+2%)
- Low initial capital stock (-0.5)
- Baseline
- High initial capital stock (+0.5)
- Low investment ratio (-2%)
- High depreciation rate (+2%)

Sources: Statistical Office of Montenegro; and IMF staff estimates.

Real Capital Stock, 2015-50
(Billions of 2006 euro)

- Low depreciation rate (-2%)
- High investment ratio (+2%)
- High initial capital stock (+0.5)
- Baseline
- Low initial capital stock (-0.5)
- Low investment ratio (-2%)
- High depreciation rate (+2%)

Sources: Monstat; and IMF staff estimates and projections.

lower/higher than in the baseline, suggesting that the depreciation rate assumption is important. The only policy variable for capital accumulation is an increase in the investment ratio, where a 2 percentage point increase/decrease results in a capital accumulation rate that is 0.2/0.2 percent higher/lower than the baseline over 2018-50, but with more of an impact at the beginning of the period. The projections of the capital stock show more of a differentiation than the growth rates. The biggest difference occurs for the scenarios with a higher/lower depreciation rate.

19.   Domestic savings may not be sufficient to finance investment over the long term. Montenegro's private savings is well below the average of its Western Balkan peers but has been on an upward trend since 2008, on the back of higher remittances, growth rates and income. Currently, a large part of investment in Montenegro is financed by the government, which temporarily

Private Saving
(Percent of GDP)

- Montenegro
- WB
- NMS
- Advanced

Sources: IMF, WEO database; and IMF staff estimates.

endangered debt sustainability and cannot continue at the high present level. The gap between investment needs and total saving ratios thus raises concerns for the sustainability of future investment and should be solved through an increase in domestic savings and be complemented by better prospects for domestic investment.

Gross Domestic Savings
(Percent of GDP)

Source: IMF staff estimates.

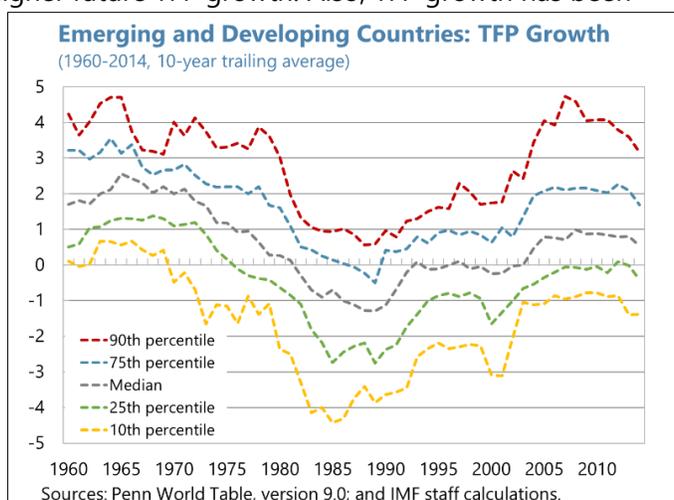**20. Appropriate policies can improve the capital accumulation channel for growth.** The following policies are recommended: (1) create conditions conducive for domestic or FDI projects with significant impacts on economic activity; (2) increase domestic savings; (3) create fiscal space to maintain/increase public investment; (4) improve public investment selection and management frameworks; and (5) strengthen financial markets to facilitate domestic and foreign investment.
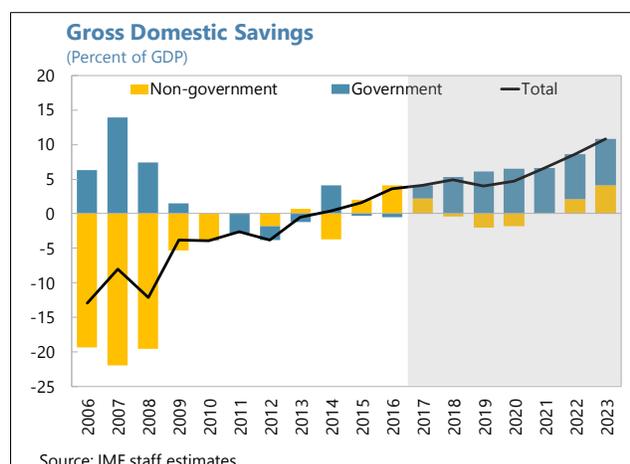
## E. Total Factor Productivity Projections

21. Montenegro's historical productivity growth has been slow. Productivity has been low and its growth weak due to structural and institutional reasons. Institutional obstacles prevent the diffusion and efficient use of available technologies (e.g. high risks or adverse business climate that discourage FDI).[7] Moreover, structural features of Montenegro, such as the high share of tourism and other labor-intensive industries, may have contributed to low productivity growth.

22. In the baseline model, we assume zero contribution from TFP over the projection period. Our baseline assumption is based on the historical experience, as explained in section B, but adds 0.5 percentage point per year to reflect higher future TFP growth. Also, TFP growth has been positive under most model specifications since 2015, so this would be in line with the recent past. There is no satisfactory way to model TFP growth, since it is the residual in the data. Therefore, we also conduct sensitivity analysis for different model assumptions and for high and low TFP growth rates. The high-growth scenario assumes 0.5 percent TFP growth, which is more in line with the experience of other emerging market economies. The latest median 10-year trailing TFP growth rate for

Emerging and Developing Countries: TFP Growth
(1960-2014, 10-year trailing average)

- 90th percentile
- 75th percentile
- Median
- 25th percentile
- 10th percentile

Sources: Penn World Table, version 9.0; and IMF staff calculations.

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[7] The Fall 2016 European Regional Economic Issues Paper "Effective Government for Stronger Growth" provides some analysis on these factors.

emerging markets was 0.5 percent for the 2005-14 period. The low-growth scenario assumes minus 0.5 percentage points contribution from TFP growth, in line with the historical baseline estimation and around the current 20th percentile for emerging markets. The text-chart illustrates the level of TFP under different scenarios/models. Note that the TFP contribution projections for all the other models also add 0.5 percentage points to their historical averages, which are the base for the projections.[8] That is, the TFP

TFP, 2006-50

Sources: Statistical Office of Montenegro; and IMF staff estimates.

for the high (low) labor share, low (high) initial capital stock, and high(low) depreciation scenarios is set at the historical TFP growth for that scenario plus 0.5 percent, the difference between the baseline historical average TFP contribution and zero. Thus, all models get the same expected TFP boost for the projection period as the baseline scenario. As we will see below, the differences in the historical TFP averages across models drive the overall model-based growth projections much more than the other assumptions.
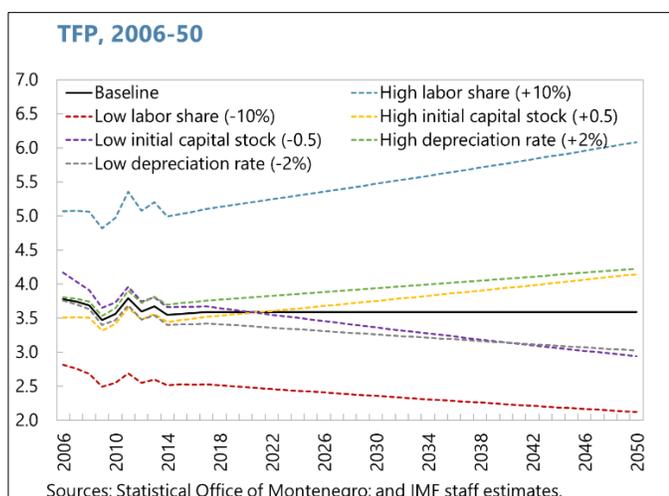
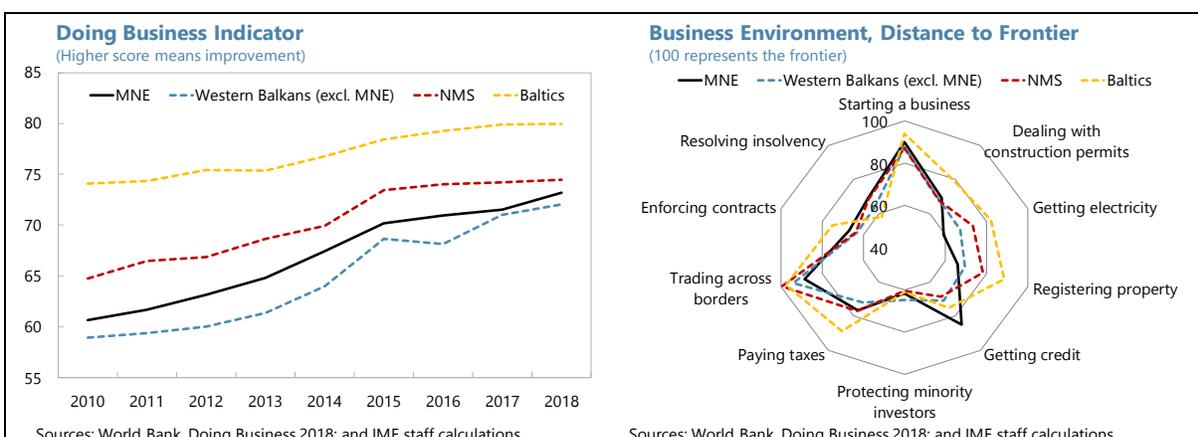| Average TFP Growth, 2007-17		2007-10 average	2011-15 average	2016	2017	2007-17 average	2006-17 annualized average
Production function (Baseline)		-1.5	0.1	0.3	0.5	-0.4	-0.5
High labor share (+10%)	Alpha=75	-0.5	0.3	0.7	0.9	0.1	0.1
Low labor share (-10%)	Alpha=55	-2.4	-0.1	-0.2	0.1	-0.9	-1.0
High depreciation rate (+2%)	Delta=8	-1.0	0.5	0.4	0.6	0.0	-0.1
Low depreciation rate (-2%)	Delta=4	-1.9	-0.3	0.0	0.4	-0.8	-0.8
High initial capital stock (+0.5)	K/Y=1.3	-0.6	0.4	0.5	0.8	0.1	0.0
Low initial capital stock (-0.5)	K/Y=2.3	-2.7	-0.2	-0.1	0.2	-1.1	-1.1
Source: IMF staff estimates.							

23.   Equalizing the TFP contribution across models results in smaller differences in projection outcomes. Using the same TFP assumption across models answers the question of what would happen if, for example, the labor share in the economy was 65 percent in the past, but then decreases to 55 percent for the projection period. This is somewhat unrealistic but could happen for the labor share, where there is some evidence that the labor share has been decreasing over time. In

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[8] The high/low TFP growth assumptions are a policy scenario. Varying labor share, the initial capital stock and the depreciation rates are different models of the economy which assume that, for example, the labor share is different throughout the historical and projections periods.

addition, for the depreciation rate it is plausible that capital goods become obsolete faster than in the past. The realism of the different TFP assumptions will be discussed in the context of the overall growth projections.

24.   Structural reforms could raise long-run productivity. Despite structural constraints, productivity is expected to increase as Montenegro progresses with the EU accession process, spurring important institutional improvements. Domestic reforms such as improvements to the credit registry and collateral registration will facilitate financial deepening and help allocate resources to more productive sectors. Furthermore, diversification into green and renewable sources of energy could reduce input costs. Montenegro has made steady progress in improving its business climate, although there are countries that have improved more. The enforcing of contracts and resolving insolvencies are areas where further improvements would be desirable.

Doing Business Indicator
(Higher score means improvement)

Sources: World Bank, Doing Business 2018; and IMF staff calculations.

Business Environment, Distance to Frontier
(100 represents the frontier)

Sources: World Bank, Doing Business 2018; and IMF staff calculations.

F.   Long-Term Growth—Putting Together the Factors

25.   Growth falls substantially in the baseline projection, reflecting a declining labor force and decreasing contributions from investment. We project potential output from 2018 to 2050 using a growth accounting framework. The average growth rate for 2018-23 is projected at 1.7 percent per year but would decline to only 0.1 percent per year in the 2041-50 decade. In the baseline scenario, employment will likely have a negative contribution on average, unless both labor force participation and unemployment improve

Contributions to Long-Term Growth - Baseline Scenario
(Percent)

Sources: Monstat; UN Population Prospects 2017; and IMF staff estimates.

significantly since the baseline already assumes a moderate improvement in both. The highway project will contribute to capital accumulation in the near term. However, in the absence of TFP growth, even the relatively projected high investment rates add increasingly less to a growing capital
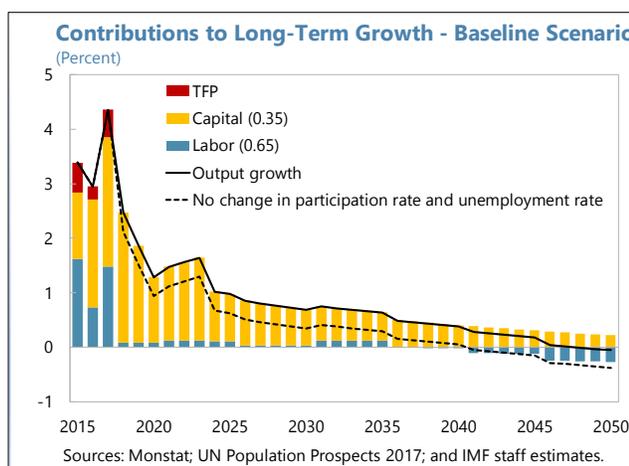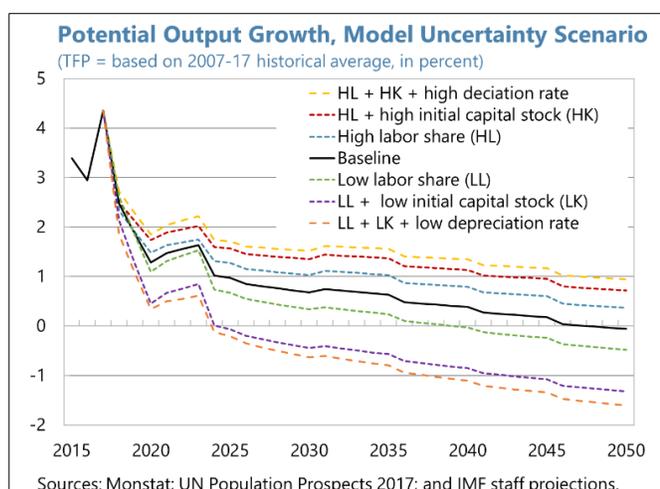
stock in the long run. In the absence of structural reform, the contribution from TFP is likely limited and probably the main bottleneck for long-run growth prospects in Montenegro. The baseline projections could be considered moderately optimistic because the scenario with no change in the labor force participation and unemployment rate projections yields considerably lower growth rates (see graph). On the other hand, one might also question the TFP contribution assumption, which is below the recent median of emerging and advanced countries.

Baseline Contributions to Growth, 2018-50					
(Percent)					
	2018-23	2024-30	2031-40	2041-50	2018-50
Labor	0.10	0.05	0.05	-0.19	-0.01
Capital	1.62	0.78	0.51	0.30	0.70
TFP	0.00	0.00	0.00	0.00	0.00
Total	**1.71**	**0.83**	**0.56**	**0.11**	**0.69**
Source: IMF staff estimates and projections.					

26.   Model uncertainties do make a difference, but they are not very large initially. Among the different model assumptions (depreciation, labor share, and initial capital stock), the initial capital stock has the largest impact long-term impact and the depreciation has the smallest impact. The impact of the model assumptions increases over time because employment and capital growth decline in the baseline, and thus the different TFP assumptions for these different models dominate. For the medium-term 2018-23

Potential Output Growth, Model Uncertainty Scenario
(TFP = based on 2007-17 historical average, in percent)

Legend:
- HL + HK + high deciation rate
- HL + high initial capital stock (HK)
- High labor share (HL)
- Baseline
- Low labor share (LL)
- LL + low initial capital stock (LK)
- LL + LK + low depreciation rate

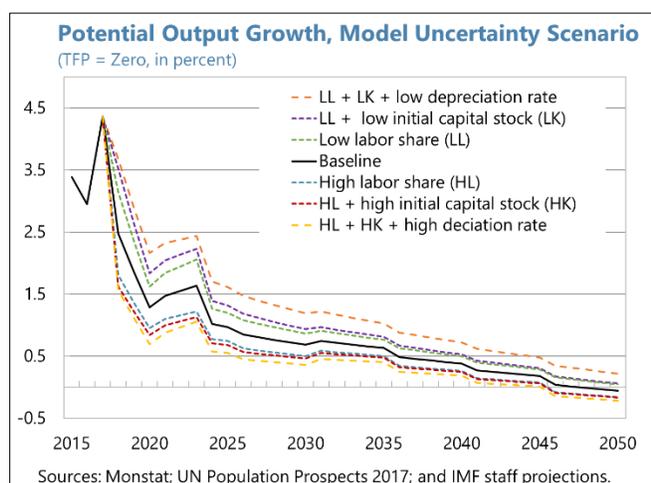Sources: Monstat; UN Population Prospects 2017; and IMF staff projections.

projections, the worst model assumptions combined (low depreciation rate, low labor share, and low initial capital stock) compared to the best model assumptions only results in a difference of 1.1 percentage points per year on average, but the difference increases to 2.5 percentage points on average for 2041-50. The sensitivity analysis implies that the maximum model average growth rate over the 2018-50 projection period is 1.5 percent. This would assume that the economy operates with a high depreciation rate, a higher labor share, and a high initial capital stock. Given these assumptions, the projected factor accumulation results in a higher growth rate. However, most of this is driven by TFP, which would contribute almost 1 percentage point per year on average in this model.

Model Uncertainty Contributions to Growth (Based on 2006-17 historical TFP) (Percent)					
	2018-23	2024-30	2031-40	2041-50	2018-50
Maximum model growth	**2.21**	**1.61**	**1.48**	**1.09**	**1.52**
Sum positive uncertainty	**0.49**	**0.78**	**0.92**	**0.98**	**0.83**
HL + HK + high deciation rate	0.17	0.15	0.19	0.22	0.19
HL + high initial capital stock (HK)	0.24	0.31	0.33	0.35	0.32
High labor share (HL)	0.09	0.32	0.39	0.42	0.33
Baseline	**1.71**	**0.83**	**0.56**	**0.11**	**0.69**
Low labor share (LL)	-0.08	-0.31	-0.39	-0.41	-0.32
LL + low initial capital stock (LK)	-0.61	-0.76	-0.81	-0.83	-0.77
LL + LK + low depreciation rate	-0.20	-0.16	-0.23	-0.27	-0.22
Sum negative uncertainty	**-0.89**	**-1.23**	**-1.42**	**-1.52**	**-1.32**
Minimum model growth	**0.82**	**-0.40**	**-0.86**	**-1.41**	**-0.63**

Source: IMF staff estimates and projections.

27.   The TFP assumptions explain the counter-intuitive result that a high depreciation rate and a high initial capital stock results in the highest overall growth rate because the slower capital accumulation rates are more than offset by a higher TFP growth. Similarly, a higher labor share results in a higher growth rate despite employment's negative contribution because the TFP effect dominates. In fact, the difference in growth rates between the high-growth model and the low-growth model of 2.2 percent over 2018-50 is almost as large as the difference in the TFP assumptions of 3.0 percentage points between these two models. To the extent that the estimates of the historical differences in TFP growth are overestimated, the differences in the model projections would also be overestimated. It appears likely that the estimated difference between the high and low growth model of 3.0 percentage points based on the 2006-17 data is too high. This is probably partly explained by the short data period for estimation.

28.   Equalizing the TFP assumptions results in smaller and more intuitive model differences. If the TFP contributions were held at zero for all the models as in the baseline, the results answer the following question: "suppose the economy had a depreciation rate of 6 percent in the past, but now increases to 8 percent, what would be the effect of this change?" Under this assumption, the effect on the projections would be smaller overall and reverse the order. The depreciation rate would have the highest impact and the initial capital stock


Potential Output Growth, Model Uncertainty Scenario (TFP = Zero, in percent)

Sources: Monstat; UN Population Prospects 2017; and IMF staff projections.

would have the smallest impact, which is intuitive.[9] Also, the impact would decline over time because differences in capital stocks would decline. The difference in the model assumptions would decline from 1.6 percentage points in 2018-23 to 0.5 percentage points in 2041-50.

Model Uncertainty Contributions to Growth (Zero TFP growth) (Percent)					
	2018-23	2024-30	2031-40	2041-50	2018-50
Maximum model growth	**2.64**	**1.42**	**0.96**	**0.41**	**1.20**
Sum positive uncertainty	**0.93**	**0.59**	**0.40**	**0.31**	**0.51**
LL + LK + low depreciation rate	0.24	0.28	0.22	0.17	0.22
LL + low initial capital stock (LK)	0.24	0.10	0.04	0.02	0.08
Low labor share (LL)	0.45	0.21	0.14	0.11	0.20
Baseline	**1.71**	**0.83**	**0.56**	**0.11**	**0.69**
High labor share (HL)	-0.45	-0.21	-0.14	-0.11	-0.20
HL + high initial capital stock (HK)	-0.12	-0.05	-0.02	-0.01	-0.04
HL + HK + high deciation rate	-0.10	-0.12	-0.08	-0.05	-0.08
Sum negative uncertainty	**-0.67**	**-0.38**	**-0.24**	**-0.18**	**-0.33**
Minimum model growth	**1.05**	**0.45**	**0.32**	**-0.07**	**0.36**
Source: IMF staff estimates and projections.					

29.   Policy changes can result in important changes in income over time. The best combination of policy levers could raise average growth over the projection period from 0.7 percent to 2 percent per year, which is significant. The policy levers available to the government are mostly related to TFP (including human capital), labor force participation, unemployment, fertility, migration, and investment. The government has little leeway to influence the depreciation rate or the labor share. The most important

Potential Output Growth, Policy-Based Scenario
(Percent)

Sources: Monstat; UN Population Prospects 2017; and IMF staff projections.

policy lever is productivity growth, which also includes improvements in human capital. The projections assume scope for upside of 0.5 percentage points per year, but in principle higher improvements are possible and have been achieved in other countries.[10] The other two most

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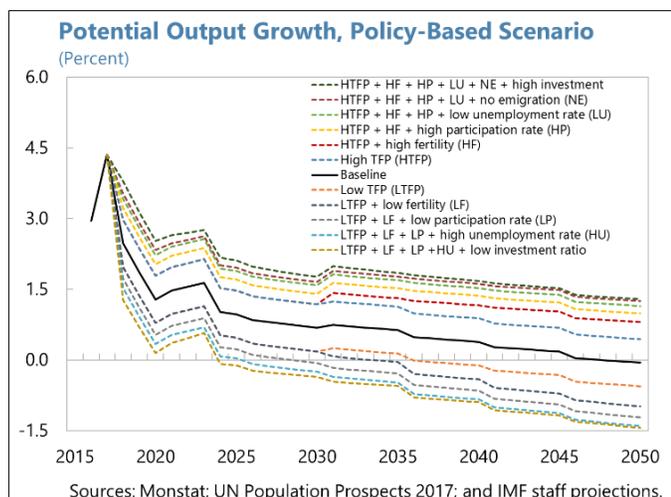
[9] Changing the initial capital stock retroactively makes little sense but would be equivalent to a natural disaster that destroys part of the capital stock (possible) or the economy inherited additional capital stock for free (not very realistic).

[10] The most recent 10-year trailing TFP growth of the 75th percentile of emerging markets was 1.7 percentage points per year.

important policy levers are increasing labor force participation and reducing the unemployment rate. A ¼ percentage point increase in the labor force participation rate per year would increase growth by 0.22 percentage points per year on average with a slightly higher initial impact. Similarly, a ¼ percentage point reduction in the unemployment rate would increase growth by 0.17 percentage points per year, again with a higher initial impact. Increasing the fertility rate to the level of the UN high fertility variant would also have an average impact of 0.17 percentage points per year, but would only take effect in 2031-50. Reducing net emigration to zero would only have an effect of 0.09 percentage points per year, which would be fairly evenly distributed across time. Finally, increasing the investment ratio by 2 percentage points per year over the projection period would only raise growth by 0.10 percent per year, but this is likely underestimated because a permanently higher investment ratio would probably endogenously increase TFP. In that sense, the short-term impact, which is 0.2 percentage points over the 2018-23 period, is probably more representative.
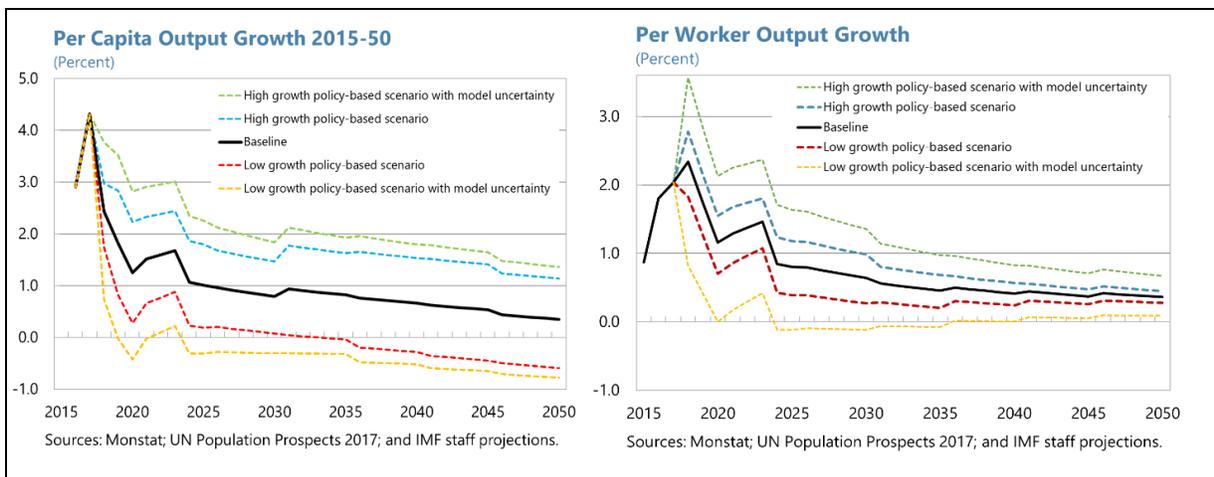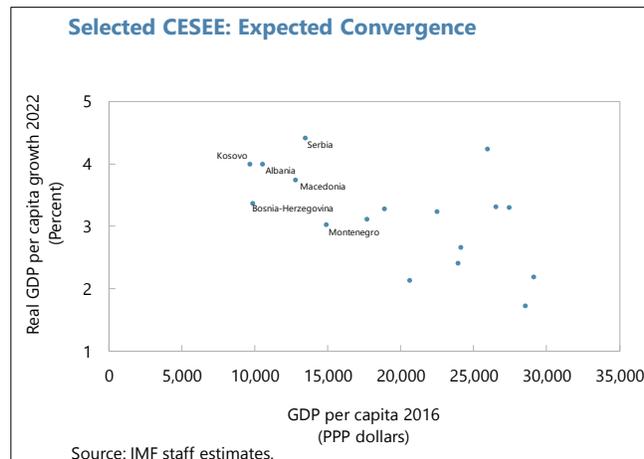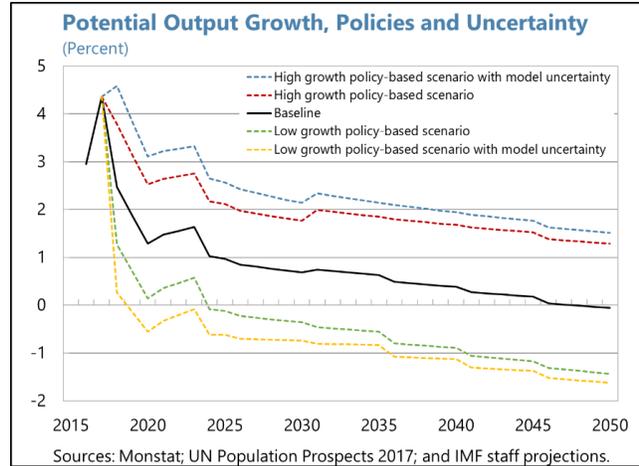
Policy Contributions to Growth					
(Percent)					
	2018-23	2024-30	2031-40	2041-50	2018-50
High growth scenario (simple average)	**2.92**	**1.95**	**1.83**	**1.45**	**1.94**
Sum positive policy contributions	**1.21**	**1.12**	**1.27**	**1.35**	**1.25**
No emigration	0.09	0.07	0.08	0.10	0.09
High investment ratio (+2%)	0.19	0.13	0.08	0.04	0.10
Low unemployment rate (-0.25%)	0.19	0.18	0.17	0.16	0.17
High fertility	0.00	0.00	0.22	0.35	0.17
High participation rate (+0.25%)	0.24	0.23	0.21	0.19	0.22
High TFP (+0.5%)	0.50	0.50	0.50	0.50	0.50
Baseline	**1.71**	**0.83**	**0.56**	**0.11**	**0.69**
Low TFP (-0.5%)	-0.50	-0.50	-0.50	-0.50	-0.50
Low participation rate (-0.25%)	-0.25	-0.25	-0.24	-0.23	-0.24
Low fertility	0.00	0.00	-0.23	-0.39	-0.19
High unemployment rate (+0.25%)	-0.19	-0.19	-0.19	-0.18	-0.19
Low investment ratio (-2%)	-0.19	-0.13	-0.08	-0.04	-0.10
Sum negative policy contributions	**-1.13**	**-1.07**	**-1.24**	**-1.35**	**-1.22**
Low growth scenario (simple average)	**0.58**	**-0.24**	**-0.68**	**-1.25**	**-0.53**

Source: IMF staff estimates and projections.

30.   Policy levers likely have a more important role than model uncertainty. The policy levers we consider could improve growth by 1¼ percentage points or more per-year over the projection period. The projected impact of policy levers is probably underestimated because higher growth rates would induce higher investment and capital accumulation, TFP growth, and immigration, which is not included in the projections. By contrast, model uncertainty only adds

between 0.5-0.8 percentage points on the upside and somewhat wider range on the downside (0.3-1.2 percentage points). In addition, the different model assumptions are unlikely to be truly additive since the difference in the parameter assumptions is relatively large (for example, for the depreciation rate) and the probability that all three model assumptions are in the worst or best case is probably quite low. By contrast, the policy lever assumptions are relatively reasonable and could easily go together. For

Potential Output Growth, Policies and Uncertainty
(Percent)

Sources: Monstat; UN Population Prospects 2017; and IMF staff projections.

example, high investment and TFP growth often go together and could very well be consistent with lower unemployment, higher labor force participation, and lower emigration.

31.   In the baseline, Montenegro would likely not converge with the rest of EU but could do so with significant policy efforts. The convergence hypothesis states that economies with lower per capita GDP should converge to higher income levels due to decreasing returns on capital—assuming similar technologies, saving, demographic features, and human capital. EU accession, adoption of new technologies and enhanced institutions, higher FDI, and increased overall efficiency could help to close income gaps,

Selected CESEE: Expected Convergence

Source: IMF staff estimates.

especially if they are leveraged to achieve higher productivity growth in Montenegro. Montenegro's legal, judiciary, and regulatory institutions are still catching up with EU standards. Per-capita growth in the baseline is modest, but it would increase to almost 2 percent on average in the best policy-

Per Capita Output Growth 2015-50
(Percent)

Sources: Monstat; UN Population Prospects 2017; and IMF staff projections.

Per Worker Output Growth
(Percent)

Sources: Monstat; UN Population Prospects 2017; and IMF staff projections.

based scenario, which would help reach EU level incomes over time. Real GDP per-worker would grow less because the best policy scenarios include higher fertility and no net immigration, which lowers the per-worker output.

G.   Potential Output and the Output Gap Using HP Filter Approach

32.   Univariate filters' simplicity for estimating potential GDP and the output gap make them appealing, but they are not free of pitfalls. Unlike structural methods and multivariate filtering approaches, univariate filtering approaches like the Hodrick-Prescott (HP) filter simply assume that potential output is a smoothed trend around actual output. These approaches are easy to interpret and communicate, but they have some conceptual shortcomings. By construction, HP filters estimate a smooth and relatively stable trend with symmetric cyclical deviations from the actual data. These cyclical deviations are, on average, relatively small and corrected relatively quickly depending on the degree of smoothing. They also suffer from the "end-point problem," which implies excessive sensitivity to the final observations. Essentially the filters assume that the beginning and end-point variations are mainly changes to the trend and not cyclical variations. The end-point limitation results in frequent revisions to

Potential Output Gaps
(Percent of potential GDP)

- Two sided HP (lambda=100)
- One sided HP (lambda=100)
- Two sided HP (lambda=6.25)
- One sided HP (lambda=6.25)

Source: IMF staff estimates.

Actual and Potential Growth Rates
(Percent)

- Real GDP
- Trend - Two sided HP(lambda=100)
- Trend - One sided HP(lambda=100)
- Trend - Two sided HP(lambda=6.25)
- Trend - One sided HP(lambda=6.25)

Source: IMF staff estimates.

historical output gap estimates, with the greatest degree of uncertainty reserved for the last and most needed data point for policy formulation.
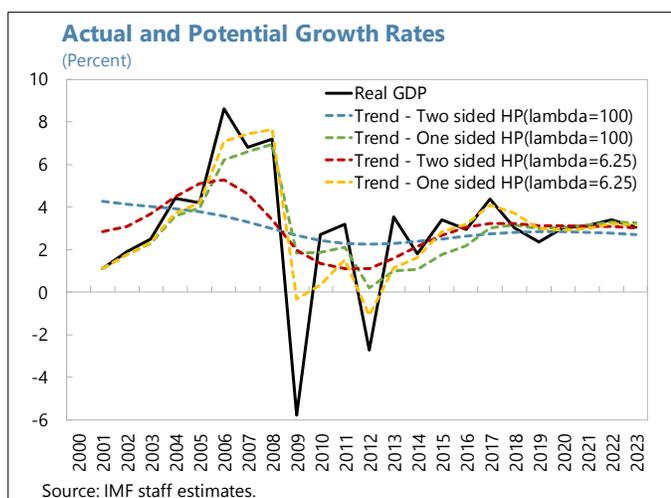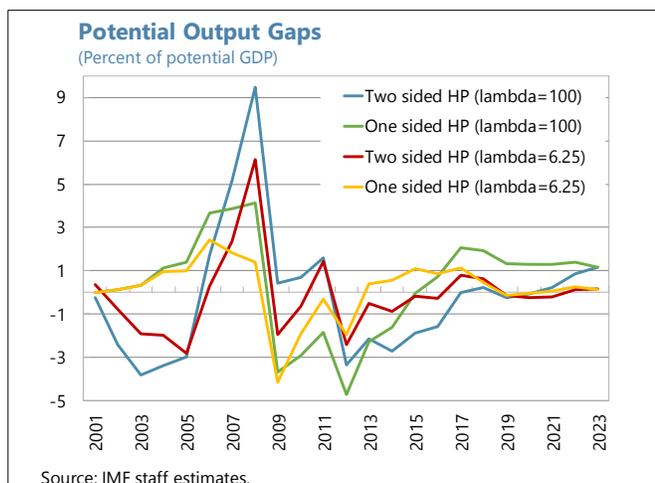
33.   We estimate variations of one-sided and two-sided HP filters using historical real GDP data (2006-17) and the macro-economic framework projection path (2018-23). The smoothing parameters are set at 100 and 6.25, reflecting the discussion in Ravn and Uhlig (2002). A lower value

of lambda provides a more rapid adjustment of the estimated potential output with respect to the actual data. Our results suggest that lambda=6.25 fits Montenegro's growth experience better, partially reflecting the relatively short available time series and thus greater uncertainty about the state of the economy. The main difference between one-sided and two-sided is that one-sided filters only use past data, while two sided filters use projected values as well. One-sided filters can be used for back testing and for real-time analysis (what is the

Nominal GDP and Nominal Potential
(LHS: million of euros, RHS: percent)

Source: IMF staff estimates.

current filtered value). Two-sided (or centered) filters are better-equipped for post-facto analysis, given that at any point in time they require future data. In our view, the two-sided HP filter with lambda=6.25 (HP2-6.25) seems to produce a more plausible result for the latest observation, 2017, and for the projection period 2018-23, illustrated in the chart above. The HP2-6.25 filter captures the periods of growth downturns well. It possibly underestimates the booms, which is mainly due to the "fast corrections" assumption described above. The output gap in 2017 and 2018 is estimated to be small and positive, reflecting the impact of the highway project. The output gap is closed at the end of our projection period, 2023.
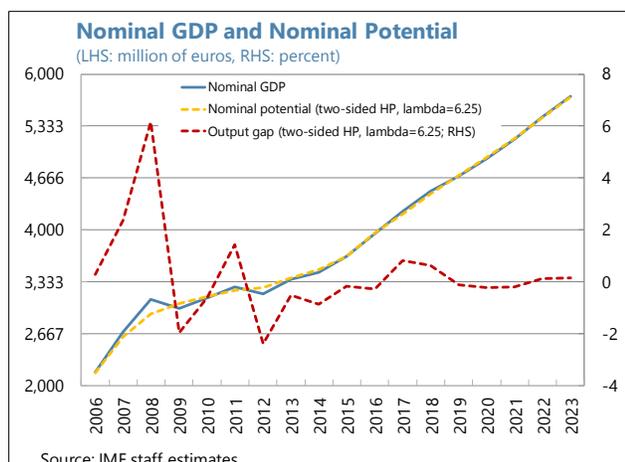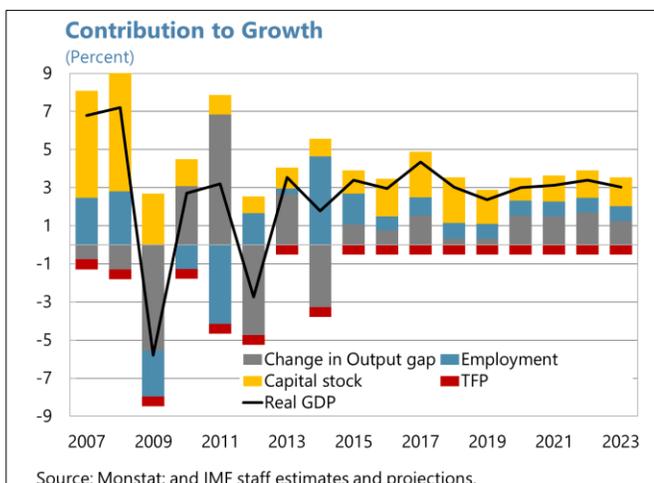
34.   The comparison between the baseline PF approach and the HP filter approach suggests that the framework assumptions may be somewhat optimistic. The difference between the real GDP growth rates over 2018-23 in the macro-economic framework and the ones implied by the baseline PF projections is explained by the TFP contribution, because the assumptions for employment growth and investment are the same. The text table below illustrates that the TFP contribution in the framework is larger compared to the TFP contribution in the baseline PF method. The difference arises mostly for the 2020-23, a period in which the contribution from TFP in the framework amounts to slightly more than 1 percentage points of GDP more than in the baseline PF approach. This could be consistent with the highway supply effect, which pushes up growth in the years after the highway investment is completed, and could be reflected in increased TFP during the years the supply impact takes effect. However, this effect should at least be partially reflected in a higher private investment ratio, which is the case, but it could also imply that the macro-economic framework assumptions are somewhat optimistic.

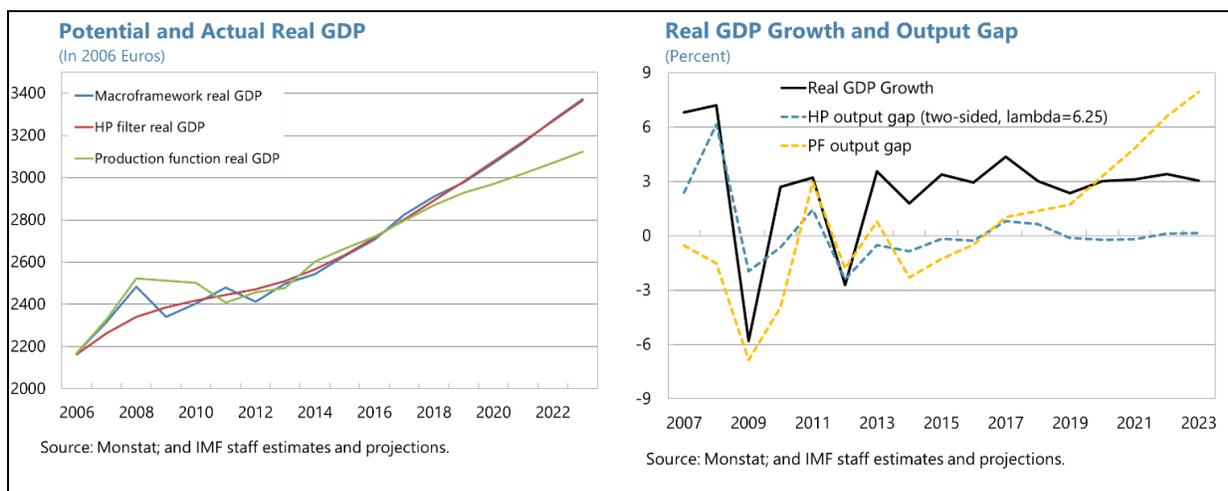| Feasibility of Framework Projections (Percent)							
	2006-17	2018	2019	2020	2021	2022	2023
Real GDP growth	3.0	3.0	2.4	3.0	3.1	3.4	3.0
Real growth - production function (baseline)	3.0	2.5	1.9	1.3	1.5	1.6	1.6
TFP contribution (framework)	0.0	0.6	0.5	1.7	1.6	1.8	1.4
TFP contribution (production function baseline)	-0.2	0.0	0.0	0.0	0.0	0.0	0.0

Source: IMF staff estimates and projections.

35.   The production function method could also be used to derive an estimate of potential GDP and the output gap. Estimated TFP includes both underlying TFP growth and cyclical variations. The underlying TFP growth is likely relatively smooth. Smoothed TFP could be used to construct a potential output series and the difference between this potential GDP and actual GDP would represent the output gap. Therefore, subtracting the annualized TFP growth or a trailing moving average from the estimated TFP provides an estimate of growth contribution from the change in the output gap (see graph). We constructed a potential output series using the annualized growth in TFP from 2006-23, which results in plausible behavior through 2017 but diverging values for 2018-23. The latter is explained by the lower TFP growth in our baseline PF method and thus produces increasing output gaps for 2018-23. The output gap in 2017 is almost identical in this methodology, which gives some comfort. However, the diverging overall results suggests that estimates of the output gap most likely must include substantial elements of judgement.

Contribution to Growth
(Percent)

Source: Monstat; and IMF staff estimates and projections.

Potential and Actual Real GDP
(In 2006 Euros)

Source: Monstat; and IMF staff estimates and projections.

Real GDP Growth and Output Gap
(Percent)

Source: Monstat; and IMF staff estimates and projections.

H.   Conclusion

36.   We estimate long-run growth in Montenegro using a production function approach using employment, capital, and total factor productivity (TFP) growth and discuss possible drivers of growth. Historical growth was driven mostly by capital with some contribution from labor, while TFP contributed negatively. Going forward, in the baseline growth accounting framework with no reforms, employment will likely have a slightly negative contribution because of demographic dynamics unless both labor force participation and unemployment improve

significantly. The highway project will contribute to capital accumulation in the near term, but the contribution from capital accumulation will likely fall despite relatively high investment ratios. Based on historical performance, the contribution from TFP is likely limited and constitutes the main bottleneck for long-run growth prospects in the no-reform baseline. Thus, structural reform efforts to increase TFP through human capital accumulation and improving the efficiency of the economy will be key for preventing growth rates from falling towards zero. The policy-based scenarios show that growth rates could increase by 2 percentage points per year in a high growth scenario and perhaps more if this high growth scenario leads to immigration and other positive feedback loops. We use a variant of the HP filter (two-sided HP approach) to produce an estimate of potential GDP and the output gap. The analysis shows that the output gap in both 2017 and 2018 is positive but small at less than 1 percent of GDP.

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STRUCTURAL FISCAL BALANCES[1]

An analysis of cyclically adjusted and structural fiscal balances in Montenegro offers an enhanced view of fiscal policy decisions, better isolating the underlying fiscal position. Fiscal policies have generally been pro-cyclical in Montenegro, expansionary during economic upswings and contractionary during downturns. Starting in 2018, however, fiscal policies should be appropriately counter-cyclical as Montenegro undertakes fiscal adjustment during an economic expansion. The structural fiscal balance excluding spending on the Bar-Boljare highway indicates that the necessary fiscal adjustment to restore sustainability is not as large as the headline fiscal balance would suggest. To avoid pro-cyclical fiscal policymaking in the future, the authorities should implement reforms to strengthen budget institutions, in particular medium-term budgetary frameworks, and maintain sound fiscal policies that would facilitate strong financial market access.

A. Introduction

1.   Fiscal policy analysis can be strengthened by distinguishing between discretionary fiscal decisions and the impact of the economic cycle. While changes to the fiscal position are frequently the result of discretionary policy decisions, they can also be caused by the economic cycle, which can boost or erode revenues. Most expenditures are independent of the cycle, but certain kinds of expenditures – known as automatic stabilizers, including for example unemployment benefits – can also vary with the state of the economy. The cyclically adjusted fiscal balance attempts to remove cyclical effects from the fiscal position, thus providing an estimate of the fiscal position if there were no output gap.

2.   The underlying fiscal balance, however, can also be influenced by factors beyond the economic cycle. Transitory factors such as one-off revenues and expenditures can have a large influence on fiscal results and may obscure the underlying fiscal position. The structural fiscal balance, which is an extension of the cyclically adjusted balance, also removes one-off revenues and expenditures. In so doing, the structural balance attempts to provide a more precise view of the underlying fiscal situation, which is necessary for judgments of fiscal sustainability and the need for fiscal adjustment.

3.   Montenegro's recent history of sharp economic cycles and one-off revenues and expenditures underscores the utility of the estimation of alternative measures of the fiscal balance. The post-independence economic boom and subsequent recession during the Global Financial Crisis had a sharp impact on revenues. Certain expenditure policy decisions have been one-off in nature and large enough that the headline fiscal balance may not provide an accurate point from which to assess the sustainability of public finances. In this paper, we estimate the cyclically adjusted and structural fiscal balances. As an extension, we also calculate the fiscal impulse, which provides insight into whether discretionary fiscal policy changes may be expansionary or contractionary for the economy. We find that in the past, fiscal policy has been pro-cyclical, serving

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[1] Prepared by William Lindquist.

to exacerbate the economic cycle. We close with recommendations for how fiscal institutions can encourage more counter-cyclical fiscal policymaking.

B. Cyclically Adjusted Fiscal Balance

4. Cyclical adjustment breaks down the overall fiscal balance into cyclical and cyclically adjusted components.[2]

$$OB = CB + CAB$$

where *OB* is the overall fiscal balance, *CB* is the cyclical balance (the cyclical component of the fiscal balance, which automatically varies with the economic cycle), and *CAB* is the cyclically adjusted balance, which is also the result of subtracting the cyclical balance from the overall balance. The cyclically adjusted balance can be computed by removing cyclical effects from revenues (R^{CA}) and expenditures (G^{CA}):

$$CAB = R^{CA} - G^{CA}$$

5. The calculation of cyclically adjusted revenues requires an estimation of the elasticity of revenues to the output gap. The elasticity estimates the extent to which changes in the output gap result in changes to revenues. There are two approaches for calculating cyclically adjusted revenues: (1) the aggregate approach; and (2) the disaggregated approach. In the aggregate approach, the elasticity is calculated based on the *overall* level of revenues, with GDP as the revenue base. In the disaggregated approach, elasticities are calculated for individual streams of revenue. For example, the elasticity of the personal income tax may be calculated using the wage bill as the tax base. In this paper, we use the aggregate approach for simplicity and in recognition of data gaps in Montenegro's economic statistics. The elasticity of revenues to the output gap is calculated by estimating the following regression:

$$\ln\left(\frac{Revenue}{Revenue^*}\right) = \propto\ + \beta_1 \ln\left(\frac{Y}{Y^*}\right) + u$$

This regression estimates the elasticity of revenues to the output gap (β_1) by relating the ratio of revenues/trend revenues to the output gap.[3] Several adjustments must be made to revenues before estimating this regression:

- First, revenues should be adjusted for one-off items, including: (1) tax debt rescheduling revenues received in 2017; (2) a one-time telecommunications fee in 2016; (3) large, one-time VAT, PIT, and social contributions made by EPCG in 2014; and (4) the repayment of a loan to

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[2] This section draws from Bornhorst et al (2011), "When and How to Adjust Beyond the Business Cycle? A Guide to Structural Fiscal Balances." IMF Technical Notes and Manuals.

[3] Technically, Y/Y^* is the ratio of output to potential output, which is estimated from an HP filter. The logarithm of a negative number (when the output gap is negative) would be undefined. Trend revenues are the result of an HP filter applied to the adjusted revenue series described above (using a two-sided HP filter with λ=100).

Prva Bank in 2009. The collection of these items was unrelated to the economic cycle and should be excluded from the revenue series used in the regression.

- Second, revenues should be presented in real terms, deflated by the GDP deflator, to match output which is presented in real terms.

- Third, revenues should ideally be adjusted to reverse the effects of changes in tax policies. Increases in a tax rate, for example, will likely raise revenues above the level expected from economic growth alone. In this case, we have not made these adjustments due to a lack of data, but the authorities could do this when they further develop the work on this issue.

6.   Revenues in Montenegro have historically varied strongly with the output gap. A regression of the revenue gap on the output gap, as defined above, yields an estimated elasticity of revenues to the output gap of 1.14 with a high level of statistical significance. The estimated effect is within a normal range for most countries (Table 1). The estimation of an elasticity greater than one suggests that each percentage point increase in output is associated with a percentage change in revenues greater than one.
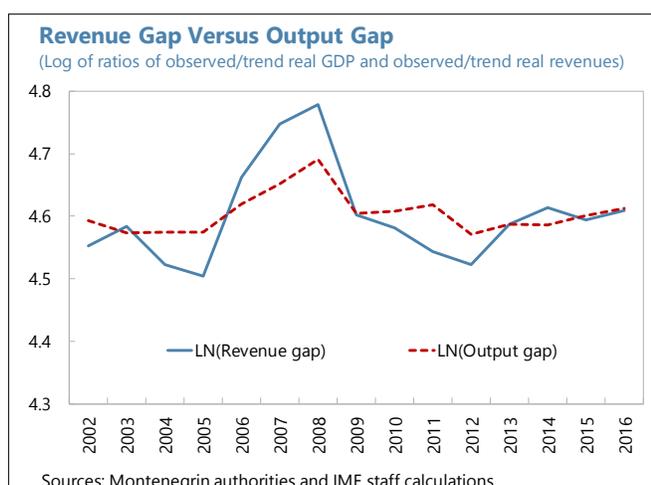

Revenue Gap Versus Output Gap
(Log of ratios of observed/trend real GDP and observed/trend real revenues)

Sources: Montenegrin authorities and IMF staff calculations

Table 1. OLS Estimation of Elasticity of Revenues to the Output Gap

Dependent variable: Log of revenues/trend revenues

Explanatory variables	Coefficient	Standard Error	t-statistic	P value
Log of output gap 1/	1.136	0.209	5.426	0.000
Constant	-0.624	0.963	-0.648	0.528
Number of observations 2/	15			
R-squared	0.694			

1/ Note that the output gap is defined as a ratio of observed to potential output.

2/ Annual data from 2002 to 2016

Source: IMF staff calculations

7.   Estimations of the elasticity of expenditures to the output gap suggest that expenditure policies have been pro-cyclical in Montenegro. With the exception of certain automatic stabilizers, expenditures in most countries are generally not thought to vary automatically with the output gap, and elasticities are frequently assumed to be zero. Following the same procedure as for the revenue gap (including adjustments for one-off expenditures),[4] we have also estimated the elasticity of expenditures to the output gap. The estimated elasticity is

Expenditure Gap Versus Output Gap
(Log of ratios of observed/trend real GDP and observed/trend real expenditures)

Sources: Montenegrin authorities and IMF staff calculations

around 0.6 with a p-value that indicates statistical significance at the 90 percent confidence level. Also, this result does not depend on the inclusion or exclusion of highway spending (Table 2). However, we do not believe this result suggests that expenditures vary automatically with the output gap. (Automatic stabilizers, such as unemployment benefits of 0.3 percent of GDP in 2017, are small.) Rather, expenditures have been pro-cyclical, increasing during periods of economic growth (and buoyant revenues) and facing cuts during downturns, as financing constraints take hold.
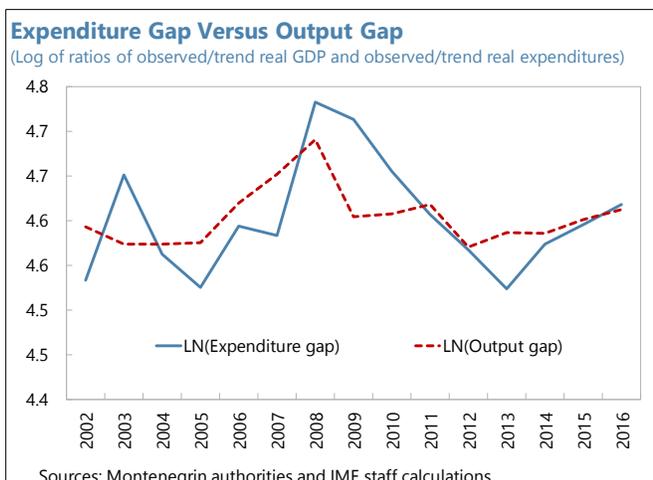
Table 2. OLS Estimation of Elasticity of Expenditures to the Output Gap

Dependent variable: Log of expenditures/trend expenditures 1/

Explanatory variables	Coefficient	Standard Error	t-statistic	P value
Log of output gap 2/	0.574	0.279	2.054	0.061
Constant	1.961	1.286	1.525	0.151

Number of observations 3/	15
R-squared	0.245

1/ Includes highway expenditures

2/ Note that the output gap is defined as a ratio of observed to potential output.

3/ Annual data from 2002 to 2016

Source: IMF staff calculations

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[4] Adjustments for one-off expenditures are detailed in the section on the structural fiscal balance.

8.   Estimated and assumed elasticities can be used to calculate the cyclically adjusted fiscal balance. The cyclically adjusted fiscal balance is calculated as follows:
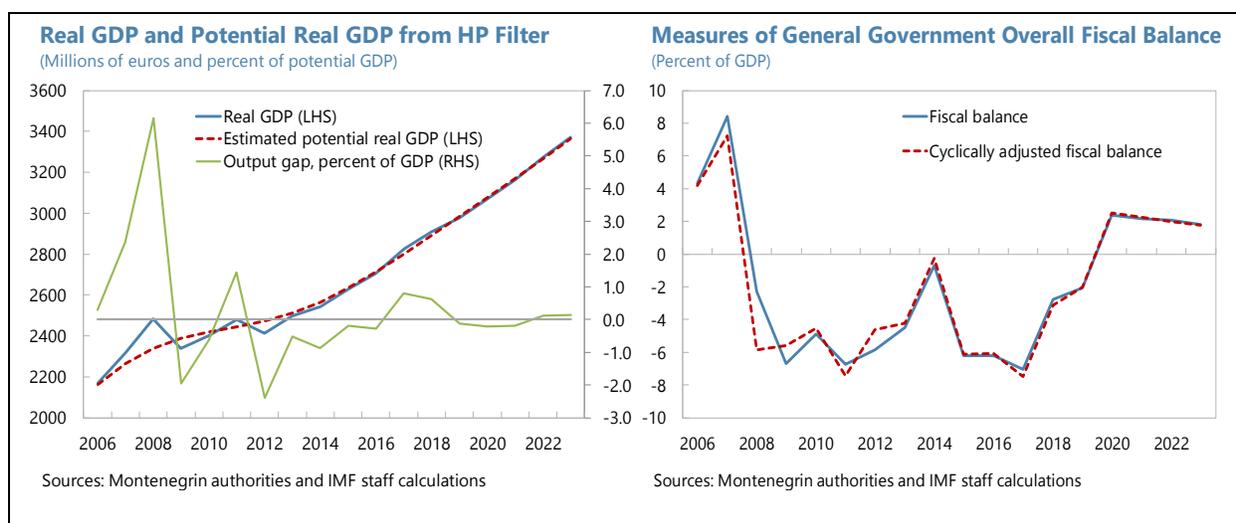
$$CAB = R\left(\frac{Y^*}{Y}\right)^{\varepsilon_R} - G\left(\frac{Y^*}{Y}\right)^{\varepsilon_G}$$

where ε_R and ε_G refer to the elasticities of revenues and expenditures, respectively, to the output gap. We use the estimated revenue elasticity of 1.14, but we use an expenditure elasticity of zero, since we do not believe that expenditures automatically change with fluctuations of output but rather are the product of policy decisions. With an expenditure elasticity of zero, the above equation for the cyclically adjusted fiscal balance becomes:

$$CAB = R\left(\frac{Y^*}{Y}\right)^{\varepsilon_R} - G$$

Note that we use the unadjusted revenue and expenditure series in this calculation, since the cyclically adjusted fiscal balance adjusts only for the output gap, not one-off revenues and expenditures.

9.   The calculated cyclically adjusted fiscal balance deviates from the headline fiscal balance. Montenegro experienced an economic boom over 2006-08 and then a subsequent recession. When the output gap was positive, strong economic growth boosted revenues, and the cyclically adjusted balance was not as strong as the headline balance. Similarly, as the output gap closed over 2012-16, the underlying fiscal position was somewhat stronger than that suggested by the overall balance. It is important to note that these output gap estimates have been produced using a two-sided HP filter with a lambda smoothing parameter of 6.25, which results in output gap estimates that are relatively small. As a result, the cyclically adjusted fiscal balance does not exhibit strong variations from the observed balance.

Real GDP and Potential Real GDP from HP Filter
(Millions of euros and percent of potential GDP)

Sources: Montenegrin authorities and IMF staff calculations

Measures of General Government Overall Fiscal Balance
(Percent of GDP)

Sources: Montenegrin authorities and IMF staff calculations

C. Structural Fiscal Balance

10.   The structural fiscal balance provides a better view of the underlying fiscal position by adjusting for non-recurring revenues and expenditures. Because revenues and expenditures may be increased in some years by one-off items, even without changes to tax or spending policies, the fiscal balance could automatically improve or deteriorate in the future. A view of the structural fiscal balance – which adjusts for one-off items in addition to the economic cycle – can be helpful in determining, for example, the necessity and size of fiscal adjustment measures.

11.   To calculate the structural balance, revenues and expenditures must be adjusted for one-off items. We can use the same adjusted revenue series described above that we created for the calculation of the elasticity of revenues to the output gap.[5] The identification of one-off expenditure items is more complicated, since many expenditure decisions are discretionary and could be considered one-off. The European Commission (EC) has outlined some principles to identify one-off measures.[6] According to the EC, one-offs should be: (1) large enough to have a significant impact on the fiscal balance, generally at least 0.1 percent of GDP; and (2) short-term in nature (concentrated in one year or a very limited number of years. Bornhorst et al (2011) suggest that one-off adjustments should be made sparingly. Keeping these guidelines in mind, we have excluded the following one-off expenditures:
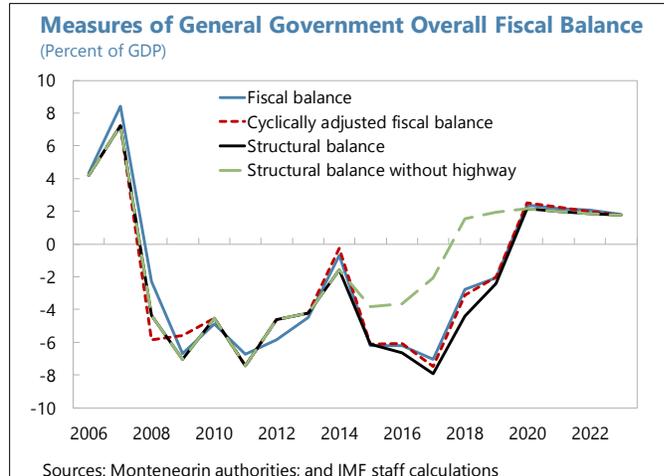
- *Loan to Prva Bank:* In 2008, the government provided a loan to Prva Bank for 1.4 percent of GDP. This operation was reversed in 2009 when the loan was repaid. (This revenue was also one-off in nature.)

- *Repayment of guarantees:* From 2009 to 2014, the government made payments on called guarantees, ranging from 0.1 to 3.2 percent of GDP each year. Since 2014, no payments have been made on guarantees. These payments can be treated as one-off in nature.

- *Transfers to public institutions:* In 2016, the government made a large one-off payment (0.8 percent of GDP) to universities.

- *Transfers to public enterprises:* A transfer to Montenegro Airlines in 2017 of 0.1 percent of GDP can be considered one-off.

12.   Special treatment is necessary for expenditures related to the Bar-Boljare highway. While these expenditures should be limited to 2015-19, highway spending has had a significant effect on spending for several years and has significantly altered the fiscal trajectory. We decided to present the structural fiscal balance with and without highway spending. This treatment is also useful for our analysis of the fiscal impulse (below).

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[5] In addition to the one-off revenues described previously, we also omit a dividend payment of 0.7 percent of GDP expected from EPCG in 2018 and the related corporate income tax payment of 0.1 percent of GDP.
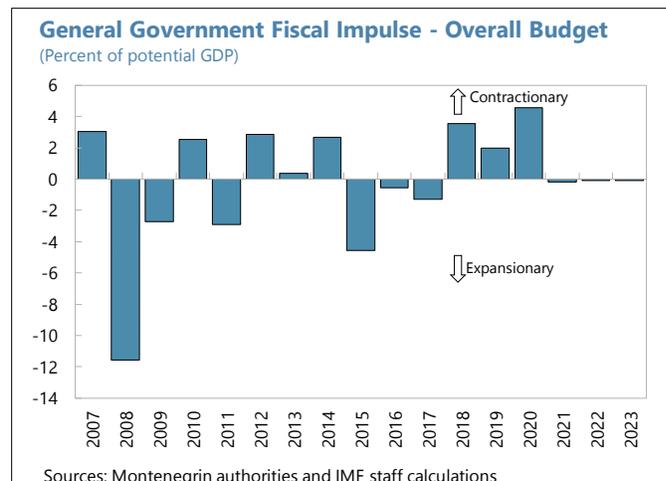
[6] See Larch and Turrini (2009), "The Cyclically Adjusted Budget Balance in EU Fiscal Policy Making: A Love at First Sight Turned into a Mature Relationship." European Commission Policy Paper 374.

13.   The structural fiscal balance (excluding highway spending) demonstrates that the underlying fiscal position is currently much stronger than the headline deficit would suggest. Including highway spending, the structural fiscal balance is broadly similar to the cyclically adjusted balance. The structural balance, however, is weaker than the cyclically adjusted balance from 2016-21 due to the use of one-off revenues. However, if we consider highway spending to be one-off in nature, the structural balance from 2015-19 is much stronger than the headline balance. This result indicates that the size of needed fiscal adjustment is much smaller than suggested by the overall balance alone. Of course, this conclusion only holds if the highway spending is truly one-off in nature and further phases of the highway are not financed through the budget.
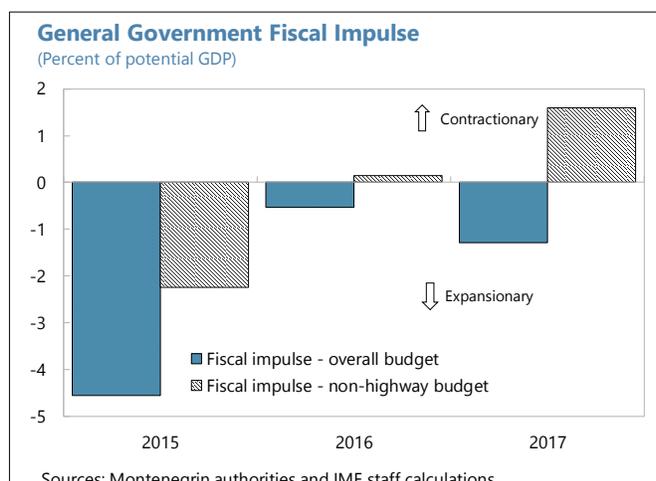
Measures of General Government Overall Fiscal Balance
(Percent of GDP)

Sources: Montenegrin authorities; and IMF staff calculations

D.   Fiscal Impulse

14.   The fiscal impulse provides insight into the direction of fiscal policy and its impact on the economy. Sometimes known as the "fiscal stance," the fiscal impulse is calculated as the change in the annual structural fiscal balance. By itself, the fiscal impulse does not estimate the impact of fiscal policy changes on economic growth, a calculation that also requires an estimate of the fiscal multiplier. However, the fiscal impulse does convey information on whether fiscal policy changes are expansionary, neutral, or contractionary on the economy. The fiscal impulse is also a useful complement to analyze the phasing of fiscal adjustment plans, including whether an adjustment is frontloaded or backloaded.

General Government Fiscal Impulse - Overall Budget
(Percent of potential GDP)

Sources: Montenegrin authorities and IMF staff calculations

15.   Fiscal policy in Montenegro has been expansionary in recent years. After the Global Financial Crisis, the fiscal impulse was on average neutral over 2009-11 before turning contractionary over 2012-14 during a period of fiscal consolidation. The beginning of the highway construction in 2015 marked the return of expansionary policies, which continued through 2017, when initial fiscal adjustment measures were offset by an acceleration of highway spending.

16.   The exclusion of highway spending tells a different story about 2015-17. The non-highway budget was neutral in 2016 and contractionary in 2017 as fiscal adjustment measures were implemented. Interestingly, despite the pre-election spending increases of 2016 (including an expansion of social benefits and a large increase in public sector wages), the non-highway budget was more expansionary in 2015 due to a decline in the revenue/GDP ratio in 2015, partly caused by a reduction in the "crisis tax" personal income tax rate on higher incomes.

General Government Fiscal Impulse
(Percent of potential GDP)

⇧ Contractionary

⇩ Expansionary

■ Fiscal impulse - overall budget
▨ Fiscal impulse - non-highway budget

2015   2016   2017

Sources: Montenegrin authorities and IMF staff calculations

17.   The fiscal stance will be tight in 2018-20 as highway spending ends. Because highway spending is not projected to accelerate significantly in 2018, it is relatively neutral on economic growth, but the non-highway budget will be very contractionary in 2018. In 2019 and 2020, the overall fiscal impulse (including the highway) will be negative – especially in 2020 – as highway spending ends. In this sense, the authorities have appropriately phased their fiscal adjustment so that the non-highway budget adjusts while the highway budget provides

General Government Fiscal Impulse
(Percent of potential GDP)

■ Fiscal impulse - overall budget
▨ Fiscal impulse - non-highway budget

⇧ Contractionary

⇩ Expansionary

2018   2019   2020   2021   2022   2023

Sources: Montenegrin authorities; and IMF staff projections.

stimulus to the economy, dampening the overall fiscal impulse (positive or negative) over 2017-20. When the end of highway spending in 2019-20 acts as a drag on the economy, the underlying fiscal adjustment will be largely completed. If the authorities had delayed the adjustment until 2019 or 2020, economic growth would likely be much weaker in those years.
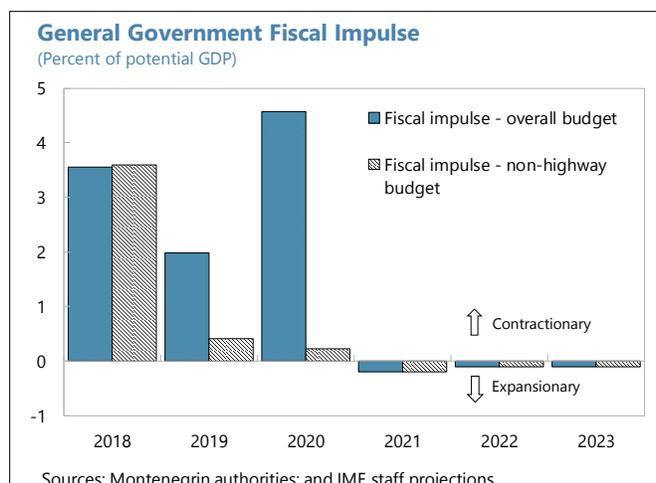
18.   The large size of the projected contractionary fiscal impulse in 2020 could present downside risk to staff's current economic growth projection of 3.0 percent. While staff has taken into account a large decline in public investment, the beginning of supply-side effects from the completed highway section will provide some offset against this drag. The size of these supply-side effects is very uncertain, though staff currently estimates that they will be relatively small, given that the first section of the highway will not provide economically significant transportation links.

19.   While Montenegro has a history of pro-cyclical fiscal policymaking, fiscal policies are currently counter-cyclical. As a general rule, policymakers should avoid generating an expansionary fiscal impulse in the presence of a positive output gap and a contractionary fiscal impulse during a time of negative output gap. These two situations have generally been the case in Montenegro's recent history. Over 2018-21, however, the fiscal impulse is projected to be contractionary, while the output gap will be positive or near zero, indicating that Montenegro's fiscal policies will be appropriately counter-cyclical.

Fiscal Pro-Cyclicality
(Percent of GDP)

Sources: Montenegrin authorities and IMF staff calculations
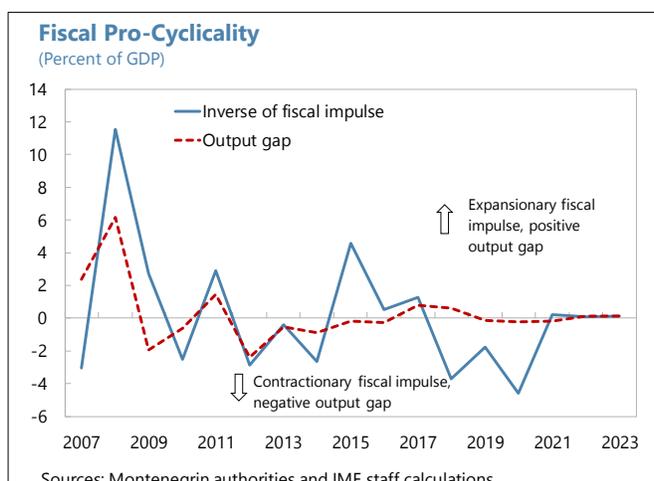
E.   Policy Recommendations

20.   The authorities should ensure that tax expenditures do not sever the important link between GDP and revenue growth. Currently, tax revenues are responsive to variations in output, indicating that revenues should grow in line with the economy. However, the authorities have granted several tax exemptions that could undermine the buoyancy of revenues. For example, goods and services for the construction of five-star hotels and energy facilities have a zero rating for the VAT, and marina services are taxed at the lower VAT rate. Newly established businesses in underdeveloped areas also enjoy corporate income tax holidays. The authorities should establish a framework to evaluate the cost of such tax expenditures and strongly consider whether these policies provide sufficient economic benefits to justify their cost.

21.   With fiscal spending strongly positively correlated with the economic cycle, the authorities should strengthen budget institutions to help control expenditures. The authorities should implement several reforms:

- *Medium-term budgetary framework:* Currently, the budget is adopted for a one-year period, with non-binding estimates of revenues and expenditures for two more years. Starting in 2019, the budget will be presented for a three-year period, including more details on expenditures at a granular level, but expenditures will remain only indicative for years two and three. The medium-term budgetary process should make medium-term expenditure levels more binding and force the authorities to reconcile and justify any changes in expenditures relative to the projections in the previous budget.

- *Medium-term projections:* The Ministry of Finance also needs to improve the economic and demographic parameters for baseline revenue and expenditure projections. For example, medium-term projections would be enhanced by the availability of high-quality projections for pension expenditures.

- *Process for costing new expenditures:* The Law on Budget and Fiscal Responsibility states that any proposer of a law or regulation that would lower tax receipts or increase expenditures should propose sources of financing or define the fiscal impact. However, the Law does not specifically mention the role of the Ministry of Finance. Any proposed law with fiscal implications should not be considered without analysis from the Ministry of Finance. The parliament approved the social benefit for mothers, for example, in 2015 without an analysis from the Ministry of Finance.

- *Investment spending:* The authorities should strengthen procedures to evaluate the economic and social returns of public investment projects to ensure that projects with the highest rates of return are chosen and implemented. With the authorities considering the completion of the Bar-Boljare highway project through a public-private partnership (PPP) structure, it will be critical to strengthen the PPP framework to avoid the assumption of large contingent fiscal liabilities from PPP projects.

- *Expenditure ceiling:* Currently, the growth rate of current spending must be less than the projected real GDP growth rate, while capital spending growth cannot exceed nominal GDP growth. If this rule were followed, current spending would continuously fall as a share of nominal GDP, which is not necessarily desirable nor feasible. In practice, these rules have not been consistently followed. The authorities should reform these rules over the medium term. They could consider setting medium-term expenditure ceilings, with automatic stabilizers excluded. Such a ceiling would allow revenues (and automatic stabilizers) to fluctuate with the economic cycle, helping to avoid pro-cyclical expenditures by preventing higher-than-expected revenues from being spent.

22.   A successful fiscal adjustment and medium-term fiscal reforms would facilitate strong market access, supporting counter-cyclical fiscal policies during downturns. At end-2017, general government debt (including guarantees) reached 75 percent of GDP. Staff projects that full implementation of the fiscal adjustment strategy and the subsequent maintenance of a strong primary surplus (peaking at 4½ percent of GDP in 2020 and falling towards 3 percent of GDP by 2023) would lower debt to 53 percent of GDP by 2023. The authorities should also implement reforms to lower the public-sector wage bill and restrict early retirements to relieve expenditure pressures. If successful, lower debt levels and greater expenditure flexibility would facilitate Montenegro's market access, potentially easing financing constraints during downturns to avoid pro-cyclical expenditure cuts.

RESERVE ADEQUACY[1]

Considering that Montenegro is a unilaterally euroized economy without a lender of last resort, international reserve adequacy should be assessed not only from a balance of payments perspective, but should also take into account considerations such as buffers for fiscal financing and bank emergency liquidity assistance (ELA). International reserves appear adequate relative to standard metrics for balance of payments purposes. The banking system is currently very liquid and well-capitalized on average, however, the central bank's own resources for ELA are limited, and government deposits have been small historically. Thus, fiscal buffers and resources for ELA should be increased, preferably by building up greater government deposits—which is under way—and creating a government sub-account at the central bank for ELA purposes.

A. Introduction

1. **With Montenegro a unilaterally euroized economy, international reserves play a different role than for most economies.** Unlike countries that issue their own currency, Montenegro has no exchange rate to manage, and the Central Bank of Montenegro (CBM) cannot issue base money to accumulate reserves. The CBM is also not a member of the Eurosystem, and thus has no access to ECB liquidity facilities. Furthermore, the CBM cannot and need not sell foreign exchange to meet demand for foreign currency.

2. **Nevertheless, reserve adequacy remains a relevant concept for Montenegro.** Shocks—whether external (to exports or external financing) or internal (bank deposit runs)—can lead to outflows from the banking system and liquidity pressures on banks. While it cannot act as a full lender of last resort, the CBM should have resources to respond to bank liquidity pressures. Furthermore, government deposits (which are included in international reserves) serve as a buffer against shocks to revenues or disruptions in market access. For these reasons, the concept of reserve adequacy should still be explored.
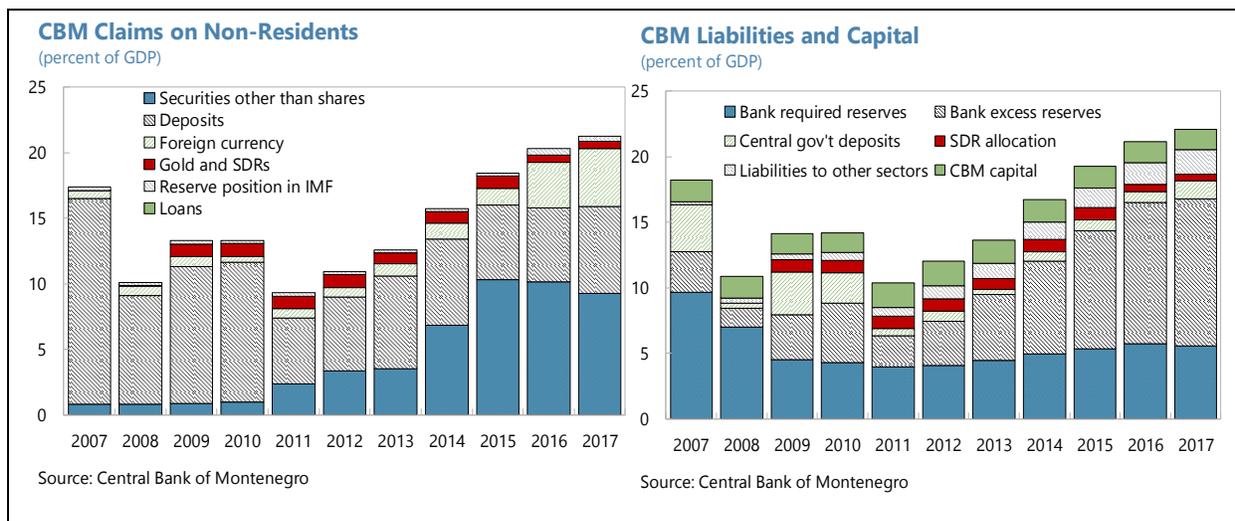
B. International Reserve Adequacy

3. **Montenegro's international reserves mainly correspond to banks' required and excess reserves and central government deposits.** Due to euroization, the CBM's balance sheet is denominated entirely in foreign currency (i.e. the euro). The CBM has sizeable foreign currency liabilities, mainly to domestic banks in the form of excess and required reserves. The central government also places deposits at the CBM. Against these liabilities, the CBM holds assets, which are principally invested in marketable foreign securities, deposits in foreign banks and central banks, and cash, which are all very liquid. These claims on non-residents are considered international reserves since they are readily available, controlled by the central bank, and actually exist.[2] Thus, any
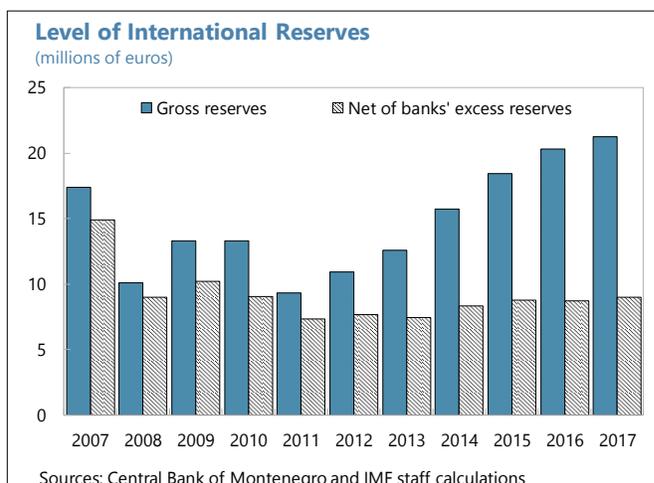
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[1] Prepared by William Lindquist.

[2] According to the BPM6 Manual, reserve assets are those "external assets that are readily available to and controlled by monetary authorities for meeting balance of payment financing needs... Reserve assets must be foreign currency assets and assets that actually exist."

non-domestic claim/asset on the CBM's balance sheet can be considered international reserves. At end-2017, the CBM held nearly €900 million (21 percent of GDP) in reserves, more than double the level at end-2013 (€424 million or 13 percent of GDP). A look at the liabilities side of the CBM's balance sheet reveals that the large growth can be traced mainly to an increase in domestic banks' excess reserves held at the CBM.

CBM Claims on Non-Residents
(percent of GDP)

Securities other than shares
Deposits
Foreign currency
Gold and SDRs
Reserve position in IMF
Loans

Source: Central Bank of Montenegro

CBM Liabilities and Capital
(percent of GDP)

Bank required reserves   Bank excess reserves
Central gov't deposits   SDR allocation
Liabilities to other sectors   CBM capital

Source: Central Bank of Montenegro

4.   Against traditional rules of thumb, gross reserves appear adequate. Standard rules of thumb suggest that reserves should cover at least three months of imports, 100 percent of short-term external debt, and 20 percent of broad money (M2).[3] We substitute bank deposits for broad money, as there is no base money due to euroization. Gross reserve levels currently exceed these metrics comfortably, particularly with respect to short-term debt and bank deposits (Table 1).

5.   The level of international reserves excluding banks' excess reserves falls short on some metrics, but the CBM could easily raise required reserves to meet the targets. The high level of bank excess reserves held at the CBM is a symptom of the high liquidity of banks in Montenegro. This level of excess reserves is a relatively recent phenomenon and may not be present in the future, especially in the event of a banking sector crisis. Thus, we also consider the level of international reserves net of banks' excess reserves, which at end-2017 equaled €380 million (9 percent of GDP). The

Level of International Reserves
(millions of euros)

Gross reserves   Net of banks' excess reserves

Sources: Central Bank of Montenegro and IMF staff calculations

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[3] See IMF (2015), "Assessing Reserve Adequacy – Specific Proposals."

CBM should consider adjusting reserve requirements to be closer to the targets under the more conservative reserve adequacy metrics.

		Gross	**Net of bank**
Table 1. Montenegro: Traditional Reserve Metrics (based on end-2017 reserve levels)			
Metric	**Target level**	**reserves**	**excess reserves**
Months of import cover	3.0	3.7	1.6
Reserves to short-term external debt (%)	100.0	295.0	124.7
Bank Deposits (%)	20.0	34.8	14.7
Sources: Montenegrin authorities and IMF staff calculations			

6.   We also benchmark Montenegro's reserves against an IMF-developed multi-dimensional metric. The Fund developed in 2011 a new metric for assessing reserve adequacy ("ARA metric") that combines several sources of potential drains on reserves, in recognition of the fact that balance of payment crises typically involve multiple channels of market pressure. The Fund proposed a metric for countries with fixed exchange rates, which may still be a useful benchmark for a euroized economy:[4]

Reserves = 10% of X + 30% of STD + 10% of BM + 20% of OPL

where X is exports, STD is short-term external debt, BM is broad money, and OPL is the stock of other external portfolio investment liabilities. We substitute broad money for bank deposits. Because Montenegro does not currently publish information on the international investment position (IIP), OPL has been omitted from the metric.[5] Reserves in the range of 100 to 150 percent of the metric are considered adequate.

7.   The ARA metric can be modified to fit Montenegro's circumstances as a euroized economy. Given the lack of a lender of last resort, reserve coverage of deposits should be stronger compared to an economy with its own currency. We substitute broad money for bank deposits and increase its weight to 15 percent. Since the CBM does not have to intervene in or provide liquidity to the currency market one could argue for lower standards for exports or short-term debt, but we

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[4] IMF (2016), "Guidance Note on the Assessment of Reserve Adequacy and Related Considerations"

[5] Data gaps, including the difficulty of estimating currency in circulation, have prevented the publication of the IIP. The CBM has received technical assistance from the IMF and hopes to begin publication of IIP data later in 2018.

decided to follow a more conservative approach.[6] We also omit the stock of other external portfolio investment liabilities, given current IIP data gaps:

Reserves = 10% of X + 30% of STD + 15% of Deposits

8. **Against the ARA metrics, Montenegro's current reserve levels appear adequate.** Against both the standard and modified ARA concepts, end-2017 reserve levels fall within or above the recommended range of 100 to 150 percent of the metric at 170 and 137 percent, respectively (Table 2). In a more conservative scenario without banks' excess reserves, coverage is less comfortable, between 72 percent (standard ARA concept) and 58 percent (Montenegro-specific concept) of the metric.

Table 2. Montenegro: International Reserve Needs Estimate
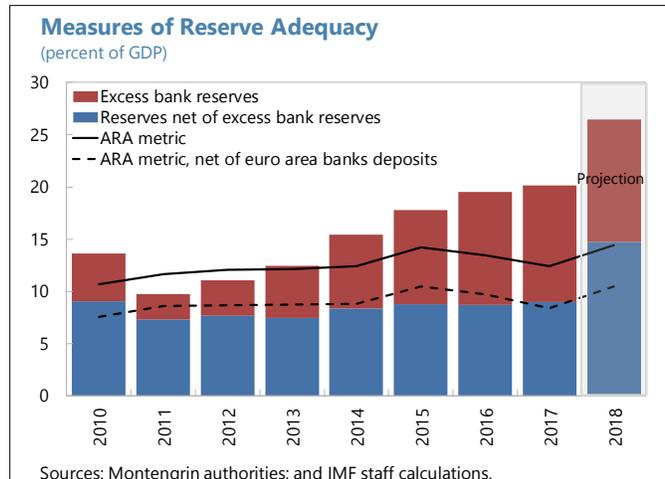(2017, in percent of GDP unless otherwise noted)

Potential sources of liquidity need	ARA Concept	Modified ARA Concept
Exports	4.1	4.1
Short-term external debt	2.3	2.3
Base money (bank deposits)	6.1	9.2
Target	**12.5**	**15.5**
Without deposits of euro area banks	**8.4**	**9.4**
Available resources:		
Gross international reserves	**21.3**	
Percent of metric	*170%*	*137%*
Percent of metric, w/o euro area banks	*253%*	*226%*
Net of bank excess reserves	**9.0**	
Percent of metric	*72%*	*58%*
Percent of metric, w/o euro area banks	*107%*	*95%*

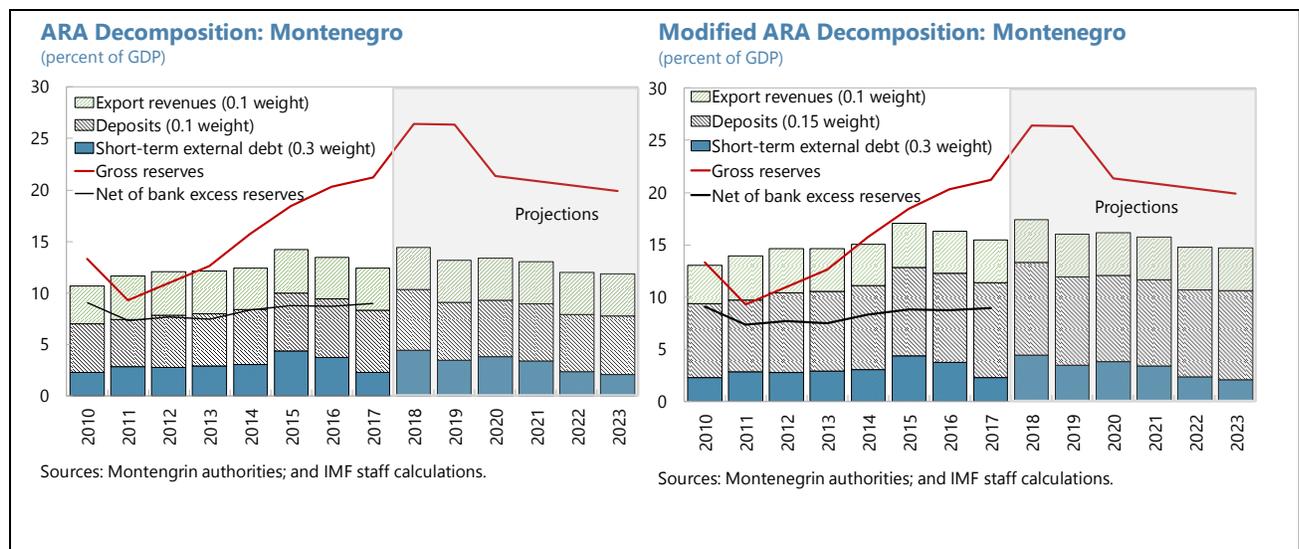Sources: Montenegrin authorities and IMF staff calculations

9. **The dominant position of Euro Area banks in Montenegro, however, may overstate the need to cover deposits with international reserves.** Banks with Euro Area parents likely have access to ECB liquidity facilities by way of their parent banks and these banks hold two-thirds of

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[6] According to IMF (2016), "the ARA EM metric may provide a conservative starting point as an adequate liquidity buffer" but could be modified according to country circumstances. The IMF's guidelines also do not clarify whether dollarized/euroized economies should use the metric for fixed or floating exchange rate systems, but in practice, Fund analysis for such economies has followed the fixed exchange rate metric.

banking system deposits. Indeed, during the
2008/09 crisis, these banks were supported
by their parents and did not need any
support from the CBM.[7] If these banks'
deposits are excluded from the metric
calculations, Montenegro's coverage
improves to between 226 and 253 percent
of the metric for gross reserves and 95 to
107 percent in a scenario without banks'
excess reserves (Table 2). Thus,
Montenegro's international reserve coverage
appeared to be reasonably adequate as of
end-2017.

Measures of Reserve Adequacy
(percent of GDP)

Sources: Montengrin authorities; and IMF staff calculations.

10. Staff's baseline projections suggest that reserve coverage should increase and remain well above most adequacy metrics over the medium term. Staff projects that international reserves will increase by 5 percentage points to 26 percent of GDP in 2018, driven by an increase in government deposits at the CBM as it pre-finances coming Eurobond amortizations. Over 2020-23, reserves may average 21 percent of GDP after deposits are drawn down in 2020 to pay Eurobonds. Based on baseline projections, reserves in the range of 12-15 percent of GDP would be broadly adequate over the medium term according to both ARA metrics. Gross reserves should thus remain adequate, though this assessment depends critically on the level of bank excess reserves in the future, which are difficult to project. If necessary, the authorities could consider adjusting required reserves such that the ARA concept modified for Montenegro net of bank excess reserves but without banks with Euro Area parents is at least 100 percent, which is the case for 2018.

ARA Decomposition: Montenegro
(percent of GDP)

Sources: Montengrin authorities; and IMF staff calculations.

Modified ARA Decomposition: Montenegro
(percent of GDP)

Sources: Montenegrin authorities; and IMF staff calculations.

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[7] Discussions with these banks suggests that future support is also very likely.

C. Fiscal Buffers

11.   With all liabilities in foreign currency, fully euroized economies may also need greater buffers for government financing. Such governments may wish to maintain additional fiscal savings as a buffer against fluctuations in revenue or spending, as funding in the adopted currency may be difficult during times of stress.[8] In Montenegro, the central government holds the vast majority of its deposits at the CBM, and these deposits fund about 7 percent and 29 percent (projected) of the CBM's international reserves in 2017 and 2018, respectively.[9] A useful rule of thumb for the minimum size of fiscal reserves is one month of central government expenditures.[10]

12.   The government's deposits at the central bank have generally fallen short of the benchmark of one month of expenditures. The average monthly deposit balance in 2017 of €70 million (1.7 percent of GDP) comprised less than half of the benchmark one month of spending of €150 million (3.6 percent of GDP). Historically, average deposit levels have stayed below the benchmark, though deposits have varied widely in line with Eurobond and other financing disbursements.

Benchmark Versus Average Monthly Deposit Balance
(Percent of GDP)

Sources: Montenegrin authorities; and IMF staff calculations
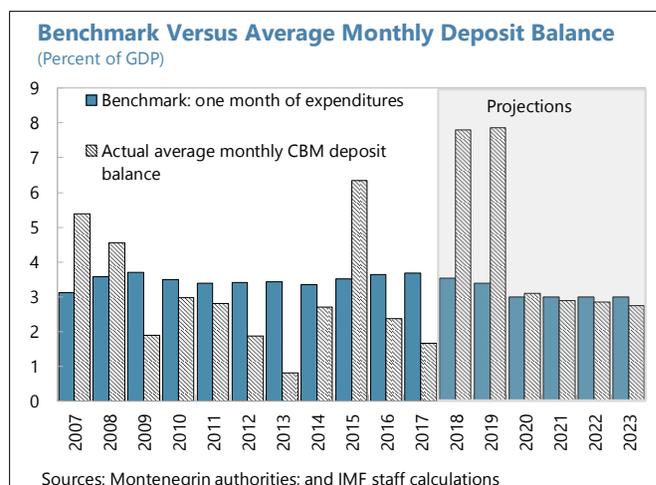
13.   The pre-financing in 2018 of coming Eurobond amortizations provides an opportunity to build larger fiscal buffers. The successful liability management operation concluded in April 2018 and projected future borrowing with a World Bank Policy-Based Guarantee in 2019 should allow the authorities to pre-finance Eurobond amortizations in 2019 and 2020. Government deposits may increase to nearly 8 percent of GDP in 2018 and 2019. In 2020, when the authorities draw down deposits to amortize the Eurobond, they should retain deposits worth one month of expenditures (3 percent of GDP).

D. Banking Sector Liquidity Buffers

14.   Banks in Montenegro are currently very liquid. The overall ratio of liquid assets to short-term liabilities is relatively high at 36 percent, in line with banks in other dollarized/euroized economies. Banks' own liquid assets should be their first line of defense against any liquidity crises.

[8] IMF (2016), "Guidance Note on the Assessment of Reserve Adequacy and Related Considerations."

[9] Staff projects a large increase in government deposits at the CBM in 2018, based on the disbursement of a syndicated bank and Eurobond issuance which exceed 2018 fiscal financing needs. The authorities intend to maintain large deposits at the CBM to pre-finance Eurobond maturities in 2019 and 2020.

[10] Wiegand (2013), "Euroization, Liquidity Needs, and Foreign Currency Reserves." Chapter 3 in Republic of Kosovo 2013 Selected Issues Papers (IMF Country Report 12/223).

However, in the event of outflows from the financial system, an individual bank's liquidity needs may exceed its own liquid assets (which include its excess reserves).[11] In this case, a bank may need to request liquidity from the CBM.

Bank Liquid Assets to Short-Term Liabilities
(Percent)

Source: IMF International Financial Statistics

15.   The CBM has established a framework for granting liquidity loans to banks. The CBM has the authority to grant liquidity loans to banks against adequate collateral, and it has defined the conditions for such loans, which may only be granted to solvent banks. Banks may draw up to 50 percent of their required reserves for intraday liquidity needs. For further needs, the CBM may grant intraday, overnight, or short-term liquidity loans (up to 180 days), with increasing interest rates for each type of loan. The CBM generally expects that subsidiaries of foreign banks would first turn to their parents to meet liquidity needs. Thus, for a subsidiary to receive a short-term liquidity loan from the CBM, the parent bank must confirm that it is unable to provide the necessary liquidity itself. Allowing banks to use their required reserves for a limited time once their eligible collateral has been used is reasonable if the bank continues to be considered solvent.[12]

16.   While overall liquidity buffers in the banking sector currently appear to be sufficient, the CBM's own resources for Emergency Liquidity Assistance (ELA) are limited. The overall liquidity buffers in the banking sector consist of: (1) banks' own liquid assets (which include excess reserves and 50 percent of required reserves at the CBM); and (2) the 50 percent of banks' required reserves that they cannot withdraw freely and without penalty. In total, these buffers equaled 40 percent of short-term liabilities at the end of

Banking Sector Liquidity Buffers
(Percent of banks' short-term liabilities)

Sources: Montenegrin authorities; and IMF staff estimates.

2017. In the future, banks could become less liquid if credit growth accelerates. Should a bank exhaust its own liquid assets, collateral for receiving short-term liquidity loans from the CBM, and required reserves held at the CBM, the CBM's own resources to provide ELA currently are limited to its own capital position, which is small at only 2 percent of banks' short-term liabilities. Even if the short-term liabilities of banks with Euro Area parents (which may provide liquidity to their

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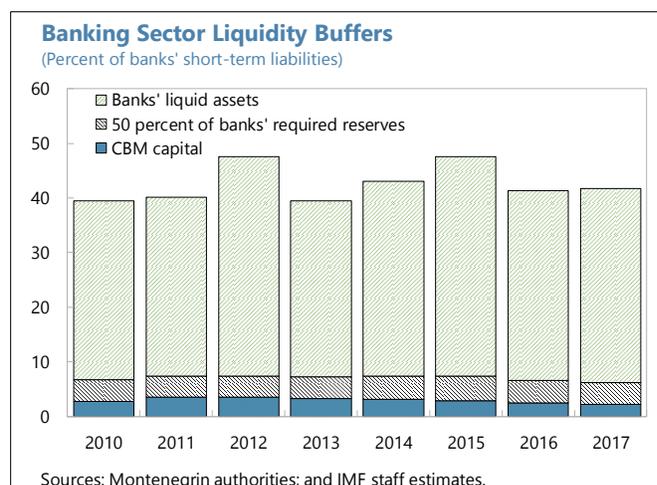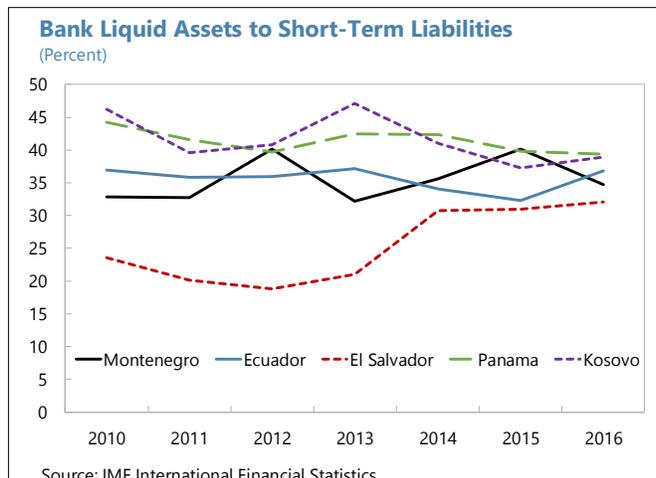
[11] The CBM's definition of liquid assets includes banks' excess reserves and 50 percent of excess reserves.

[12] The interest rates charged on such loans should be set as a margin to a market-based interest rate such as Euribor.

subsidiaries) are excluded, ELA resources would still only cover 8 percent of short-term liabilities for the remaining banks.

E.   Policy Options to Expand Buffers

17.   The CBM and the fiscal authorities should consider options to bolster ELA resources and fiscal buffers. With the CBM unable to issue domestic currency, the strengthening of buffers will ultimately need to be funded and backstopped by the fiscal authorities.

Fiscal Buffers

18.   Building deposit buffers and developing domestic debt markets would help insure against fiscal financing shocks. With the pre-financing of coming Eurobond amortizations, the government's deposits with the CBM will increase significantly in 2018 to levels well beyond one month of expenditures. While amortizations in 2019 and 2020 will reduce these deposit buffers, the authorities should maintain a standing balance of deposits equivalent to at least one month of expenditures. While the maintenance of a larger deposit balance will imply a carrying cost in line with Montenegro's borrowing costs, the authorities should weigh these costs against the reduced risk of a financing crisis.

19.   The authorities should also encourage the development of medium- to longer-term domestic government bond markets. The authorities regularly issue T-bills with a maturity of up to one year (held mainly by banks), though the State Audit Commission has ruled that the stock of T-bills cannot grow on an annual basis.[13] The issuance of longer-term domestic government bonds has been infrequent. They are also held mainly by banks, and trading activity is limited. A more regular offering of longer-maturity domestic bonds would allow the authorities to diversify their financing sources and tap the currently high level of liquidity in the banking sector. The provision of a new financial instrument would also be welcomed by banks, insurance companies, corporates, and retail investors.

20.   Ultimately, the maintenance of sound fiscal policies will be necessary to retain regular access to international markets at reasonable terms. The authorities' medium-term fiscal adjustment strategy has greatly improved fiscal sustainability but needs to be fully implemented to ensure that government debt falls to safer levels and financing costs decline.

ELA Buffers

21.   While the CBM has developed a framework for ELA, it should consider options to expand its resources beyond its own capital. Several options do not appear to be viable:

- *Pooled liquidity arrangement:* Ecuador (a dollarized economy) has a liquidity fund with a target of 10 percent of deposits, financed by contributions from banks. The idea of creating a pool of

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[13] This decision should be reviewed, since it is generally not optimal to set firm limits on specific debt instruments, especially in nominal terms. Limits on total debt, by contrast, are more justifiable.

CBM liquidity, funded by banks, has been considered, but it is beset by coordination and moral hazard issues in Montenegro. The subsidiaries of foreign banks would likely not need to access ELA (as they could receive liquidity from their parents), so they (and indirectly their parents) would essentially be providing liquidity to domestic banks. Such a situation may also raise moral hazard for domestic banks.

- *Liquid asset contribution:* If banks with larger liquid assets paid greater contributions, it would provide banks a perverse incentive against self-insurance by maintaining sufficient buffers of their own liquid assets.

22.   The authorities could explore the feasibility of a standing line of credit from an international financial institution. Such a line of credit could augment existing ELA resources, if necessary during a liquidity event. The authorities should consider the cost of the commitment fee and the institution's ability to disburse quickly after a request is made. Montenegro's deposit insurance fund currently has a credit line with the EBRD until the fund is fully funded. The authorities could explore whether the EBRD could feasibly provide a similar credit line for ELA purposes. A foreign commercial bank could provide a credit line in principle, though it may resist disbursing funds if there were a broader liquidity event such as that seen during the 2008-09 Global Financial Crisis. Because Montenegro's euroization is not endorsed by the ECB, Euro Area central banks will not grant credit lines to the CBM (which would grant the CBM de facto access to the Eurosystem).

23.   With the fiscal authorities as the ultimate backstop for ELA, the government should create a dedicated sub-account at the CBM for ELA purposes and maintain prudent fiscal buffers. The CBM would be able to use this account at its discretion (with strong safeguards over the use of resources), and the government should create an arrangement to reimburse the CBM for losses stemming from ELA upon an independent audit report. In Kosovo (also a euroized economy), the government has created a Special Reserve Fund at the Central Bank of Kosovo for ELA purposes. The government should create such an account and commit to reimbursing the CBM for ELA losses. Ultimately, this action would serve as a recognition that the government is the final backstop for bank liquidity, as necessary in a euroized economy. The coming build-up of government deposits at the CBM provides an opportunity to fund such an account in principle. However, given the fungibility of funds and their cost, it may not be optimal to fund the account until the need arises. Also, given that these government funds are the last line of defense for the banking system in a crisis, careful consideration should be given to whether the banks need liquidity support, capital injections, or other bank resolution actions. The authorities have drafted a law to implement the EU framework for bank resolution and recovery.

24.   The authorities should follow best practices for banking supervision as a first line of defense and could consider increasing reserve requirements to augment ELA buffers. In 2017, the CBM lowered reserve requirements by two percentage points, from 9.5 to 7.5 percent and from 8.5 to 6.5 percent, depending on the type of deposits. The CBM could consider increasing reserve requirements in the future if it wished to augment buffers. Most importantly, the authorities should closely monitor banks and maintain high prudential standards to minimize the risks that emergency liquidity situations might arise.

LABOR MARKET OUTCOMES IN MONTENEGRO: CHALLENGES AND POLICY OPTIONS[1]

This study provides a set of explanations to understand the observed labor market outcomes in Montenegro, which are weak by European standards. After providing stylized facts for the inactivity rate, (long-term) unemployment rate, and informal employment, this study presents a discussion covering the following dimensions: (i) level of employment protection; (ii) level of labor taxation; (iii) pace of wage growth, including the minimum wage; and (iv) non-employment income support and activation policies. The main conclusions are the following. First, there is still room to improve the current draft Labor Law to increase flexibility, formalization of work, and labor participation by modifying current proposals related to the establishment of the employment relationship, the internal organization and systematization act, and termination of employment. Second, reform options on labor taxation need to consider a reduction of the tax wedge, especially on low income earners, and a gradual withdrawal of social assistance and family benefits rather than a sudden decline after reaching a certain level of net income. Third, while active labor market policies (ALMPs) can contribute to reduce the labor market mismatch in the short to medium term, the education system is the key element for the reduction of labor market mismatches in the medium to long term.

A. Labor Market Outcomes: Stylized Facts

Inactivity Rate

1.   Despite an improvement in recent years, participation in the labor market is low in Montenegro. The inactivity rate[2] is about 37 percent, which is lower than the average for Western Balkan countries (excluding Montenegro), but much higher than the average for EU member countries and New Member States. The inactivity rate is prevalent among both men and women. However, the gap is larger in the case of women, where its difference with the EU average is nearly 14 percentage points. Moreover, the inactivity rate is more critical among the youth (between 15 and 24 years) and people with low education attainment (see Figure 1a and Figure 1b).

Unemployment Rate

2.   The unemployment rate is high by European standards. While declining in recent years (see Figure 1b), the current rate, at about 16.1 percent, is significant and higher than the average rate observed in EU and New Member State countries (see Figure 1a).[3] The unemployment rate is more critical for less educated people and the youth. By group age, people between 15 and 24 years
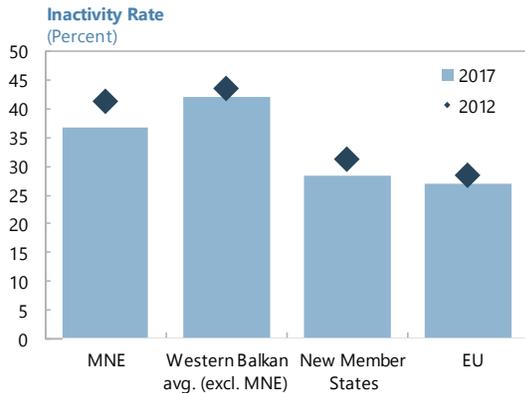
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[1] Prepared by Marco Arena and Morgan Maneely.

[2] The activity rate is defined as the proportion of the working age population that is not in the labor force. When added together, the inactivity rate and the labor force participation rate will sum to 100 percent.

[3] The unemployment data is taken from the Labor Force Survey (LFS), which also allow us to do a cross-country comparison. However, the number of unemployed people released by the Employment Office is different than the number presented by the LFS because unemployed people for the Employment Office equals the number of persons who are considered as registered unemployed by the Health Fund.
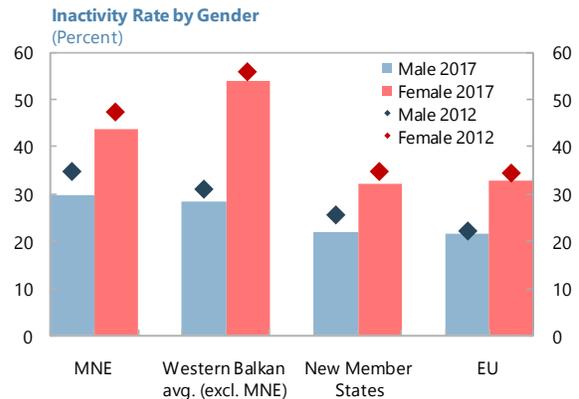
show the highest unemployment rate at 32 percent. Montenegrin youth are much more likely to be unemployed than their EU and New Member States counterparts but also much less likely to be economically active.

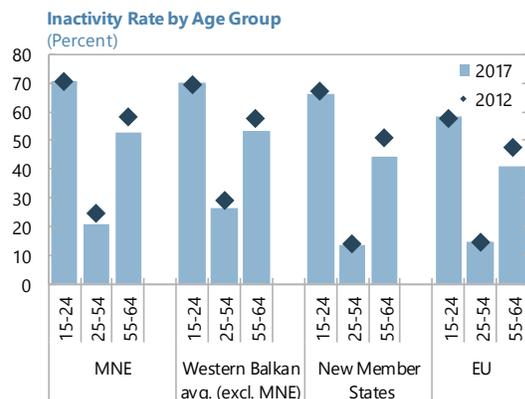## Figure 1a. Labor Market Developments Compared to Peers

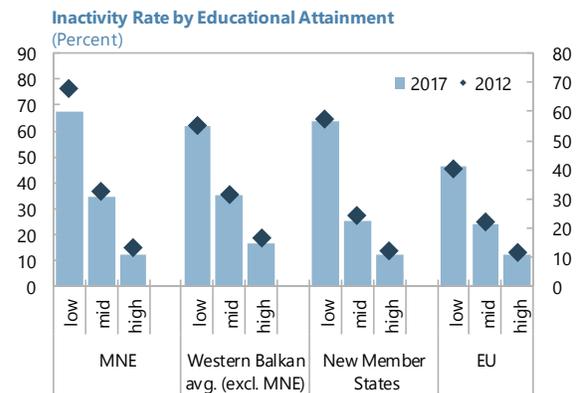*Despite an improvement in recent years, the inactivity rate is high by European standards.*

Inactivity Rate
(Percent)

...and is higher among women...

Inactivity Rate by Gender
(Percent)

...youth (between 15 and 24 years) ...

Inactivity Rate by Age Group
(Percent)

...and especially those with low education.

Inactivity Rate by Educational Attainment
(Percent)

The unemployment rate is high, especially for youth...

Total and Youth Unemployment Rates
(Percent)
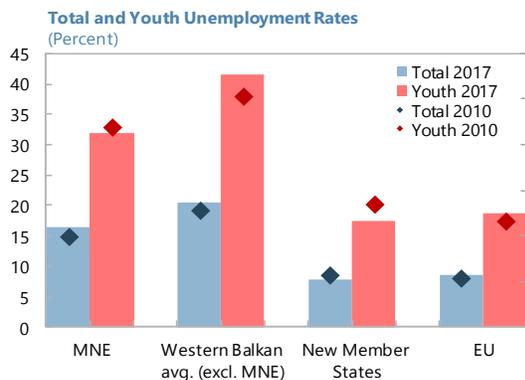
...reflecting more structural rather than cyclical characteristics.

Long-term Unemployment Rates
(Percent)
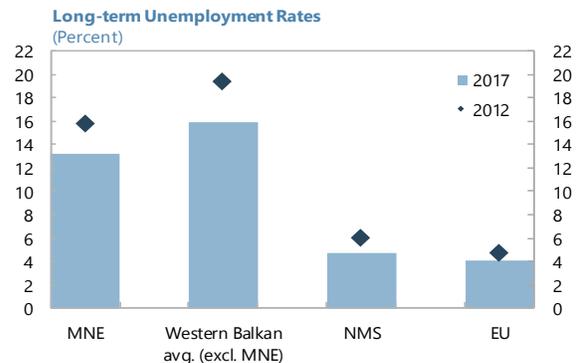
Sources: Eurostat; World Bank; and IMF staff calculations. Data for 2017 is 2017Q1/Q2 average.

Figure 1b. Labor Market Trends

Inactivity rates have declined slowly....

Inactivity Rates
(Percent)

Legend: Overall, Women, Youth, Low educated

X-axis: 2010 2011 2012 2013 2014 2015 2016 2017

...as unemployment rates and...

Unemployment Rates
(Percent)

Legend: Overall, Women, Youth, Low educated

X-axis: 2010 2011 2012 2013 2014 2015 2016 2017

...long-term unemployment rates.

Long-term Unemployment Rates
(Percent)

Legend: Overall, Women, Youth, Low educated

X-axis: 2010 2011 2012 2013 2014 2015 2016 2017

Unemployment is of long duration.

Long-term Unemployment Ratio
(Percent)

X-axis: 2010 2011 2012 2013 2014 2015 2016 2017

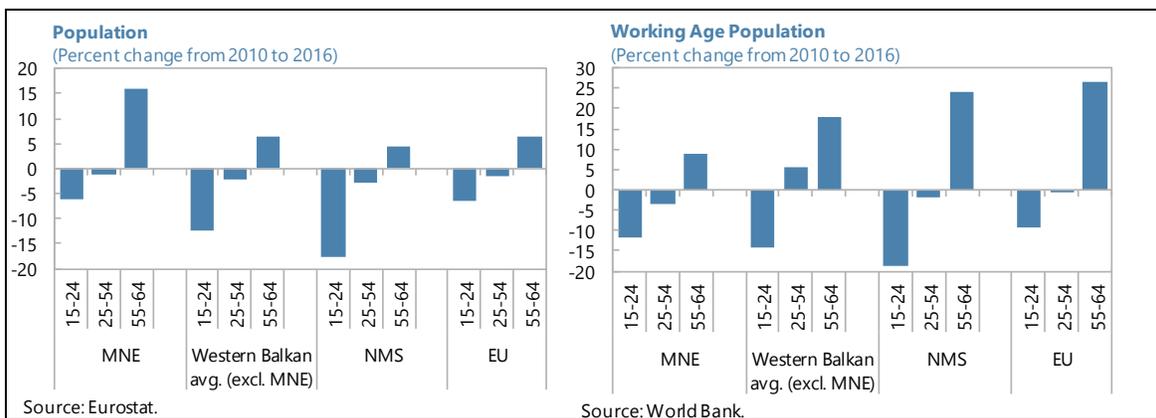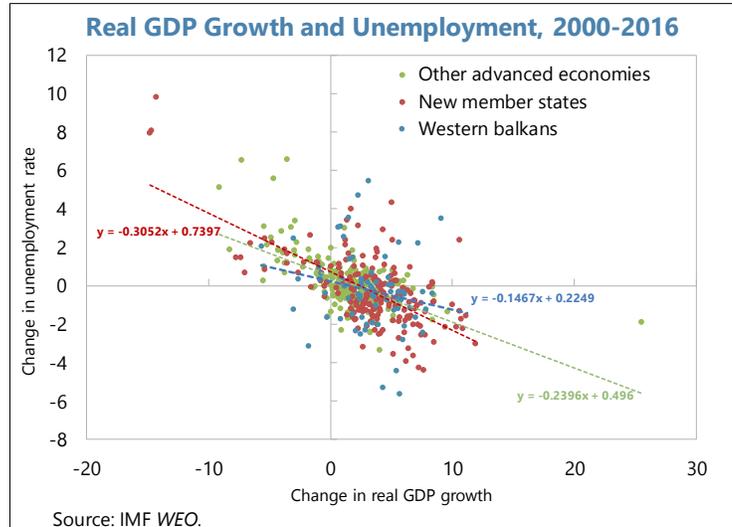Source: Western Balkans Labor Market Trends 2018. World Bank. Note: 2017 is Q1/Q2 average.

3. **Unemployment is of long duration**. About 80 percent of the unemployed in Montenegro were out of work for more than a year on average (see Figure 1b), reflecting more structural than cyclical characteristics. On one side, the degree of responsiveness of unemployment to GDP growth is lower in the Western Balkans than in New Member States of the European Union and advanced European countries. On the other side, the share of long-term unemployment reveals that low outflows from unemployment are the main source of high joblessness. This fact would reveal a difficult labor market entry in Montenegro, which is associated with labor market rigidities, labor market frictions, and education and training. The consequences of long-term unemployment are critical, including an erosion of human capital, decline of productivity, and an increase in the risk of social exclusion.[4]

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[4] Youth unemployment rates fell faster than the overall unemployment rate, reflecting more responsiveness to the business cycle (World Bank, 2017). Another World Bank study explains that labor market outcomes of youth are linked to the business cycle, with higher job losses during downturns, but more new employment during economic recoveries/booms. The latter would be partially explained by the fact that youth employment represents a more flexible segment of the labor market (World Bank, 2016).

4.   Negative demographic trends underlie these labor outcomes. Most Western Balkan countries are facing a demographic contraction or stagnation driven by outward migration and declining birth rates (World Bank, 2017). As in other Western Balkan countries, these developments are compounded by population aging, as the decline has been more pronounced in the under 25 age group, while the number of those aged 55-64 increased significantly. In addition, the working age population has also declined in recent years,

Real GDP Growth and Unemployment, 2000-2016

- Other advanced economies
- New member states
- Western balkans

$y = -0.3052x + 0.7397$

$y = -0.1467x + 0.2249$

$y = -0.2396x + 0.496$

Change in unemployment rate

Change in real GDP growth

Source: IMF *WEO*.

especially for the age groups between 15 and 24 and between 25 and 54 years old (the decline in total population, 4.3 percent, was larger than the one in working age population, 4.0 percent, between 2010 and 2017). These trends are expected to continue (see SIP on long-term growth) and will pose further challenges.
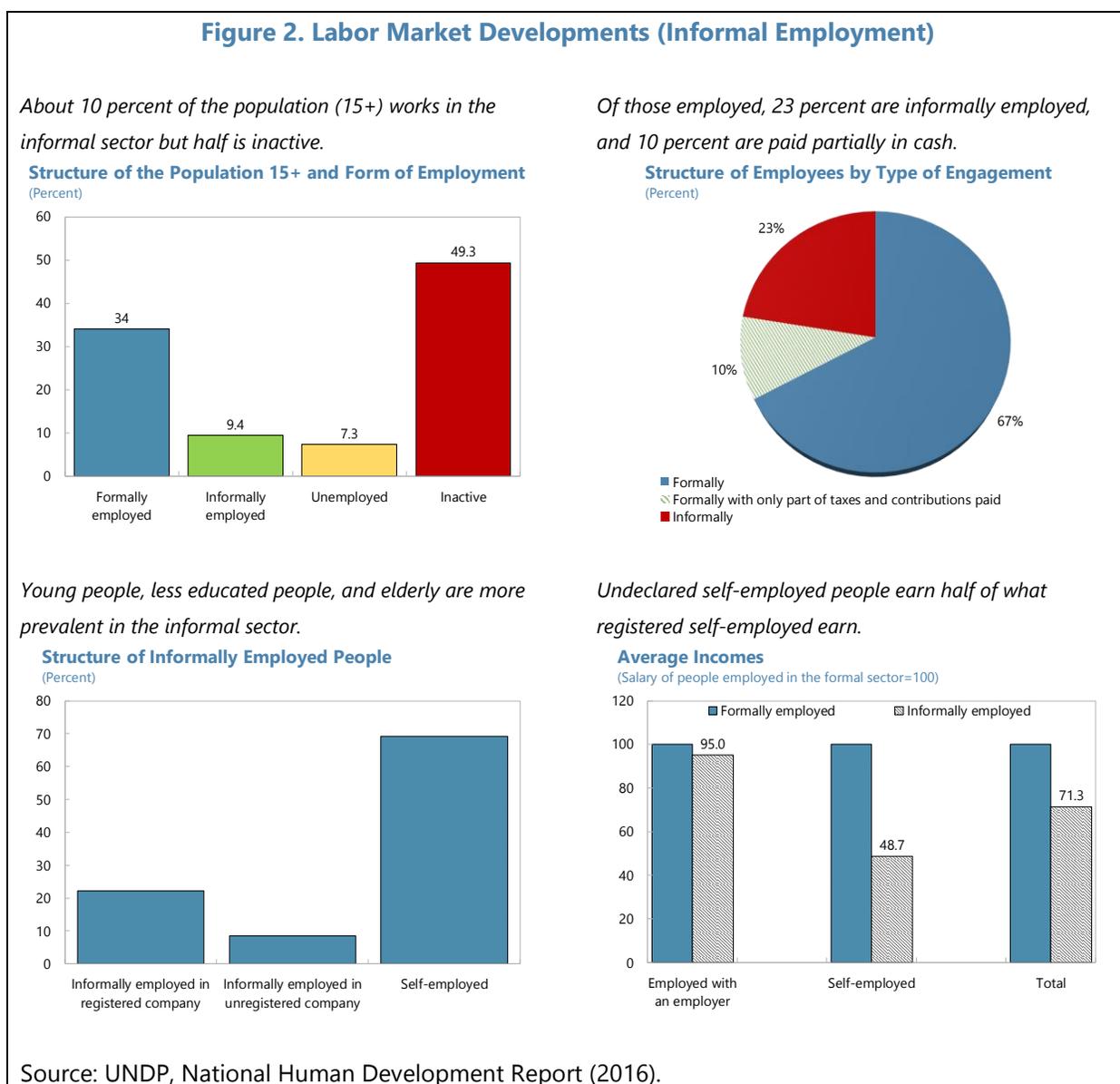
Population
(Percent change from 2010 to 2016)

15-24 | 25-54 | 55-64 (MNE)
15-24 | 25-54 | 55-64 (Western Balkan avg. (excl. MNE))
15-24 | 25-54 | 55-64 (NMS)
15-24 | 25-54 | 55-64 (EU)

Source: Eurostat.

Working Age Population
(Percent change from 2010 to 2016)

15-24 | 25-54 | 55-64 (MNE)
15-24 | 25-54 | 55-64 (Western Balkan avg. (excl. MNE))
15-24 | 25-54 | 55-64 (NMS)
15-24 | 25-54 | 55-64 (EU)

Source: World Bank.

Informal Employment in Montenegro

5.   In 2016, the United Nations Development Programme (UNDP) published the report "National Human Development Report- Informal Work: From Challenges to Solutions," which was prepared after the research institution IPSOS conducted a survey commissioned by UNDP. The report tackles the topic of informal work in Montenegro, which is a critical topic given that a third of employed people are fully or partially informally hired, which put them at risk of inadequate social and health protection.[4] Below, we present and summarize of some of the report's main highlights.

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[4] Based on the Labor Force Survey data, staff calculations suggest that the ratio of informal employment to the labor force is around 33 percent since 2009, showing a slight increase in recent years (just above 35 percent in 2016).

6.   About 10 percent of the population (15+) works in the informal sector and half is inactive. According to the report, observing the structure of employees by status, about 78 percent of employees are formally employed (67 percent with their full salary declared and 10 percent with only part of their salary declared) and 22 percent of employees are informally employed.

7.   About 70 percent of informally employed people are self-employed. According to the report, by age, the dominant group is made up of informally employed people aged between 46 and 64, and 37 percent of self-employed are people without any education or primary school education only, while 6 percent have a college degree. The probability of engagement in the informal economy is higher for young people, less educated people, and the elderly. Women are less engaged in informal activities than men. The largest volume of informal employment was recorded in agriculture and in households as employers.

Figure 2. Labor Market Developments (Informal Employment)

About 10 percent of the population (15+) works in the informal sector but half is inactive.

Of those employed, 23 percent are informally employed, and 10 percent are paid partially in cash.

Young people, less educated people, and elderly are more prevalent in the informal sector.

Undeclared self-employed people earn half of what registered self-employed earn.

Source: UNDP, National Human Development Report (2016).

8.   Income of informally employed people is, on average, almost 30 percent lower than the incomes of formally employed individuals. People employed informally with an employer earn 5 percent less than formally employed people, while undeclared self-employed people earn half of what registered self-employed earn. In addition, by income deciles, according to the report, it appears that a high degree of inequality exits within the lower-income deciles, where the income of informally employed people in the first decile would be equivalent to 36 percent of the income of formally employed in the first decile. However, the difference decreases for higher deciles.
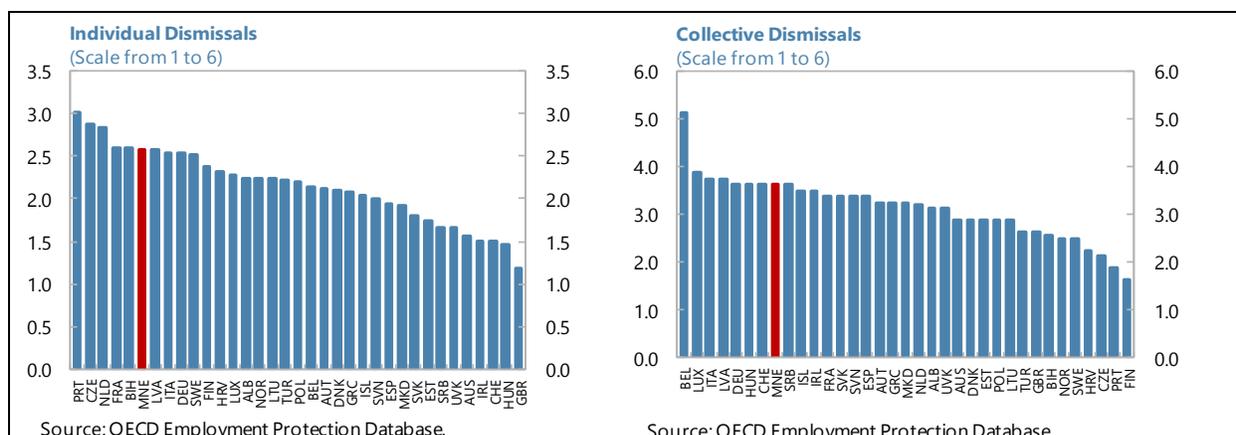
B.   How to Explain These Labor Outcomes in Montenegro?

9.   As discussed in the OECD jobs strategy (OECD, 2006), the analysis of employment policies needs to include the following elements: (i) level of employment protection; (ii) level of labor taxation; (iii) pace of wage growth, including the minimum wage; and (iv) non-employment income support, activation policies, education, and training.

Labor Market Regulations

10.   A key dimension of labor market regulations is the employment protection legislation (EPL), which reflects the level of flexibility/rigidity of regulations related to permanent and temporary labor contracts as well as those related to collective dismissals. Evidence for OECD countries (OECD 2001, 2004) shows that strict EPL reduces both inflows into unemployment and outflows from it, contributes to long-term unemployment, affects the employment prospects of the youth and women, and stimulates the use of fixed-term or temporary contracts. In addition, empirical evidence shows that countries with stricter EPL tend to have a larger informal sector (Johnson, Kaufmann, and Zoido-Lobaton, 1998; Loayza, Oviedo, and Serven, 2005; and Fialova and Schneider, 2011). Also, strict EPL appears to undermine productivity growth (Scarpetta and Tressel, 2004; Micco and Pages, 2006; and Bassanini and Venn, 2007).

11.   EPL in Montenegro is above the average of OECD countries. According to the UNDP report, the reform of labor legislation in 2008 increased flexibility, primarily through regulations related to the use of fixed-term contracts. However, the reform legislation of 2011 led to a decline in flexibility due to a limitation on the use of fixed-term contracts, even though there was an improvement in certain aspects such as severance payments. Based on the latest OECD's EPL rigidity index, the individual and collective strictness indicators are higher than the average for OECD and European countries.

Individual Dismissals
(Scale from 1 to 6)

Collective Dismissals
(Scale from 1 to 6)

Source: OECD Employment Protection Database.

Source: OECD Employment Protection Database.

12.   The new Labor Law should provide a balance between the protection of work and job security. The Social Partners have finalized a draft of the new Labor Law following a three-year process and the authorities will send it to the European Commission for its opinion. Among other elements, the new Law introduces a simplification of procedures for dismissal of employees, an extension of the duration of fixed-term contracts to 36 months (calculated in a cumulative way), the adoption of a legal Act for the internal organization and classification of jobs, and the introduction of a mechanism for an amicable resolution of employment. Some elements of the current draft Law could be further discussed and revised to increase incentives for more flexibility, declaration of work, and labor participation:

- *Establishing employment relationships*: An employee should be allowed to work for more than one employer even if the additional work is full time. Registration limitations under the Labor Law appear to hamper additional self-employment activity, thus providing "incentives" to under-report self-employment.

- *Internal organization and systematization act*: The requirement that all firms need to have a Rulebook regarding the internal organization and classification of jobs could imply a potential burden for SMEs, particularly for small firms. For these firms, it would be sufficient to include a brief description and/or specification of the work in the employment contract.

- *Termination of employment:* According to the draft Law, "Employment shall terminate by virtue of law when the employee reaches the age of 67 and minimum 15 years of pension insurance…" This eliminates the possibility to extend a contract even if the employer and employee agree. This provision appears counterproductive in an economy with a declining and aging population, where the focus should be on extending working lives.

- *Addressing informal employment*: In the new draft Law, if a job inspector finds a worker without a formal employment contract, the worker automatically receives an open-ended contract. Compliance with the Law and enforcement is a necessary but not a sufficient condition to reduce informal employment, and it is questionable whether this penalty alone will provide the right incentives to comply with the law. Instead, the authorities should devise a system of

incentives focused on the formalization of economic activities, which also involve employment and tax policies (comprehensive strategy).

13.   Labor regulations would also benefit from revisions to the General Collective Agreement (GCA). Under the GCA, negotiated provisions cover all workers in the economy. However, it is generally considered best practice that collective agreements shall apply only to employers and employees who agree to be bound by such collective agreements. It is also recommended that collective agreements be time bound, with a possibility of extension, with the consent of parties. Labor regulations need to provide some flexibility to employers to adjust to different economic situations, especially during recessions. In addition, under the GCA, the minimum wage recognized under the Labor Law is to be multiplied by a set of coefficients depending on the education level of an employee. This seems to imply that there are potentially multiple minimum wages in the economy and that the minimum wage could be modified by changing the basic amount or changing the set of coefficients.

Wage Costs

Wage Costs and Labor Productivity

14.   After accounting for productivity and inflation, Montenegro's real unit labor costs would have shown a decline in the post Global Financial Crisis period. According to the World Bank (2018), measured in purchasing power parities (PPP) which accounts for price level differences among countries in 2016, the highest wage levels were found in Montenegro and in Bosnia and Herzegovina. However, while real unit labor costs (ULCs) increased by 3 percent over the last 10 years (2008-17), they have declined in recent years. The average wage, in real terms, has declined by 5 percent between 2010 and 2017 and labor productivity increased 4 percent during the same period.[5] While labor productivity did increase in recent years, its increase is modest from a medium-

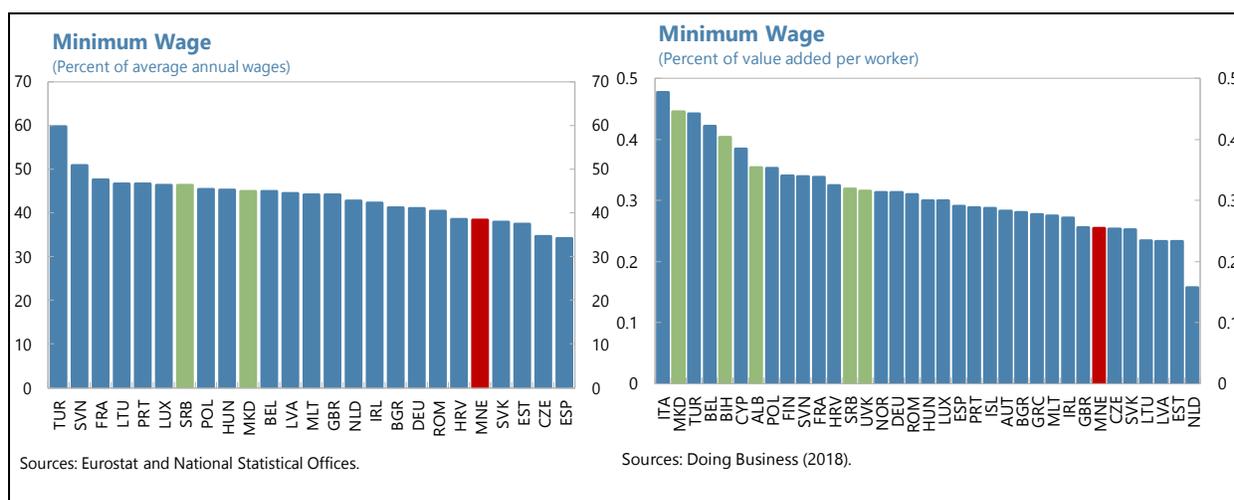Sources: IMF *WEO* and National Statistical Offices.

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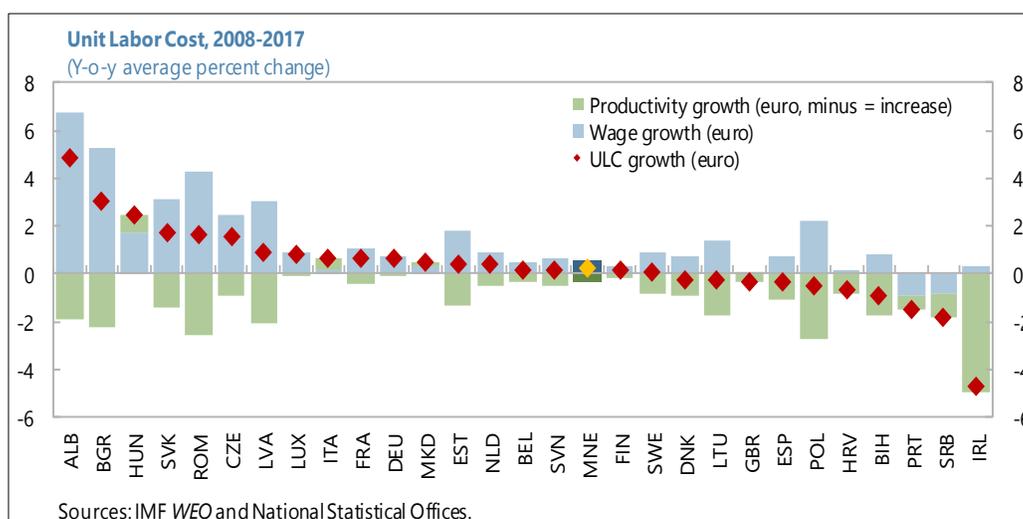
[5] Information on average wages is obtained through both surveys to employers of enterprises with more than 10 employees and data collection from the tax administration office.

to long-term perspective (since 2008), and it lags the growth rate observed in other Western Balkan countries such as Albania and Bosnia and Herzegovina.

Minimum Wage

15.   The minimum wage in Montenegro appears to be moderate by some measures. The purpose of the minimum wage is not only distributional to ensure that low-skill workers receive a payment that would be sufficient to live (Blanchard, Jaumotte, and Loungani, 2013) but also to avoid exploitation by local monopolies. As mentioned by Krsmanović (2004, page 2), "The minimum wage regulation was introduced as a social policy measure aimed at protecting the most vulnerable portion of the labor force, especially workers with low qualifications." Relative to the average wage and to value added per worker, the minimum wage in Montenegro ranks low across the sample of European countries.[6] However, an increase in the minimum wage could have additional consequences by potentially affecting the wage distribution in the formal (and potentially the informal) sector.

Minimum Wage
(Percent of average annual wages)

Sources: Eurostat and National Statistical Offices.

Minimum Wage
(Percent of value added per worker)

Sources: Doing Business (2018).

16.   Different levels of the minimum wage, based on the level of education, may have an adverse impact on hiring decisions, especially for new workers in the labor market with higher education levels. Under the country's General Collective Agreement (GCA), the minimum wage differs depending on the educational level of an employee. The GCA provides the set of coefficients, which determine by how much the minimum wage will be multiplied by depending on the education level (the coefficients range from 1.00, unqualified labor, to 4.12, Ph.D. education level). This differentiation could have the unintended consequence of having multiple minimum wages.

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[6] Currently, the minimum wage is just below 40 percent of the average wage in Montenegro. A joint ILO, OECD, IMF, and World Bank report concludes that a minimum wage of 30-40 percent of the median wage would strike a suitable balance, which corresponds to a range of 25-35 percent below the average wage, i.e. the minimum wage is slightly below this range (IMF, 2016). Relative to GDP per capita, Montenegro's minimum wage ranks high across European countries. However, the denominator is affected by the large proportion of inactivity (lack of labor force participation) in the labor market.

17.   Increases in the minimum wage would not necessarily affect the wage distribution in the private sector. The minimum wage in Montenegro does not seem be binding across the whole formal sector. As discussed by Krsmanović and Walewski (2006, page 11), while the minimum wage should be binding for all companies in the economy, it would be the case in Montenegro that the minimum wage mainly influences workers in the public services sector given that wages in this sector are linked to the national minimum wage. In the private sector, "while the minimum wage would not be binding for a small portion of employees working in big companies, it influences the effective tax burden on wages" (Krsmanović and Walewski, 2006, page 11). Evidence refers to some employers' practice of paying the minimum wage along with an additional undeclared amount on which no wage-related taxes are paid. In such situations, an increase in the minimum wage would result in a higher tax burden for employers and in a potential reshuffling between official and unofficial payment, without affecting the actual remuneration.[7]

18.   Workers in the informal sector, at the lower income deciles, would not be protected by the minimum wage. As discussed by the UNDP report, there is a large gap between formal and informal income at the lower-income deciles, between 50 and 65 percent difference for the lowest three income deciles.[8] Also, most informal sector workers at the lower-income deciles would have less educational attainment and/or are involved in low-productivity activities. In this context, the minimum wage might price them out of the market rather than protecting this particular group of workers (UNDP, 2016, page 69).

Labor Tax Wedge by countries, 2016
(single 67 percent of the average gross wage)

Source: Jousten and Jankulov Sulgagic (2018)

Taxes on labor

19.   At around 40 percent, the tax wedge on labor is relatively high in Montenegro and largely independent of the income level (lack of progressivity) despite a low personal income tax rate. The personal income tax is flat at 9 percent with no personal allowance and only a marginal degree of progressivity. Social security contributions are also flat, adding to a combined tax burden of 33.8 percent of gross wages (there are virtually no deductions

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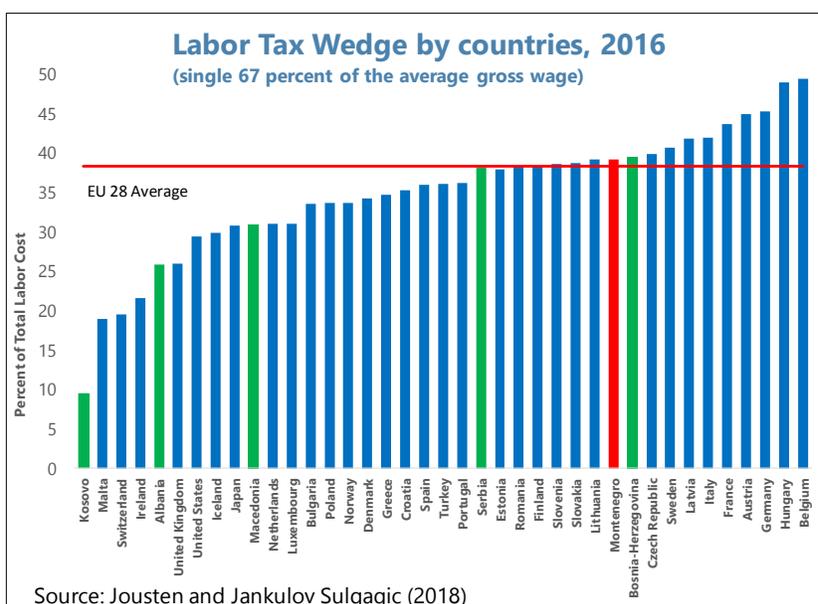
[7] The unusually high number of workers declaring a wage equal to the minimum wage suggests that this situation is prevalent.

[8] The report documents that the average net income of informally self-employed people is at the level of the national net minimum wage.

from wage taxes, but certain sources are exempt).[9] Given the absence of a basic allowance, and the very little progressivity of the PIT on wages, very little variation is observed in the total tax wedge, which stands slightly higher than the EU average.

20.   As indicated by the IMF Fiscal Monitor (2017), a relatively high effective tax wedge on labor generally exerts significantly adverse labor market incentives. It discourages formal market labor supply and/or labor demand and contributes to involuntary unemployment and inactivity. The latter is especially important for individuals earning low incomes because social benefits and transfers are often completely foregone or severely taxed away when workers enter the formal

Formal Jobs and Incomes from Social Benefits
(Assumptions for a couple with one earner and two children)

Source: World Bank (2012) and IMF staff calculations.

market, implying high effective marginal tax rates. For example, for a family that receives family benefits (e.g. family material support and child allowance) declaring any income of more than around €1,300 annually (around 15 percent of average wage) could result in the complete loss of family benefits (World Bank, 2012) – a loss in net income of about €280 (red line in the graph below).[10] The design of social assistance and family benefits does not provide incentives to declare work, especially for low-income earners, or even to work[11] because social assistance benefits are withdrawn at a high rate as formal gross income increases (see purple line in the graph below).
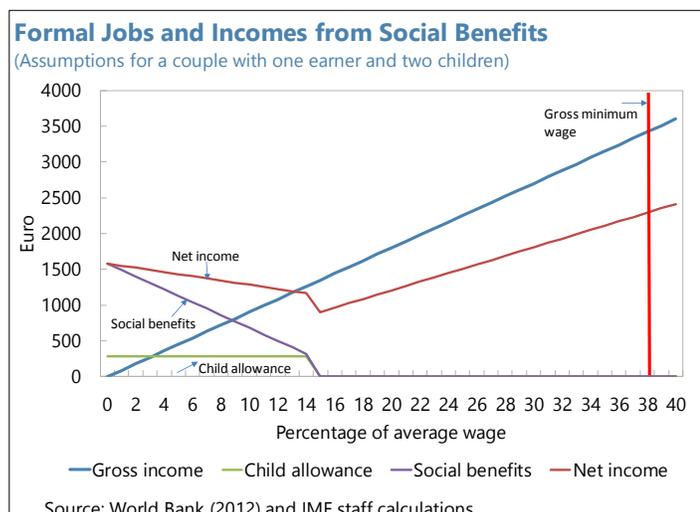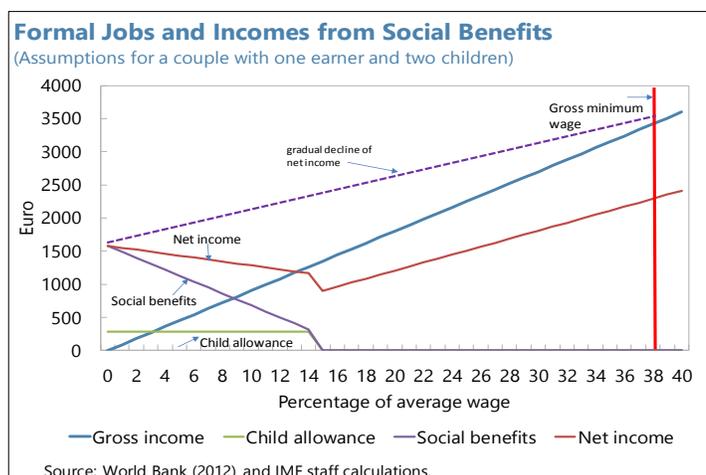
21.   Reform options need to consider a reduction of the tax wedge, especially on low income earners, and a gradual withdrawal of social assistance and family benefits. As part of a comprehensive reform, reducing the level of the tax wedge on labor – and possibly increasing progressivity along the income spectrum – will be critical to reducing incentives for under-declaration of income. The latter could be achieved through the re-introduction of a basic allowance for wage income and/or through targeted earned income tax credits or lower employer contributions (e.g. health insurance could be financed through the general budget rather than by

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[9] Para-fiscal and local charges contribute to widening the effective labor tax wedge as perceive by employers (e.g. compulsory levels for the chamber of commerce, the earmarked labor fund for covering severance pay in the case of bankruptcies, and the professional rehabilitation fund). See Jousten and Jankulov Suljagic (2018). Also, health insurance contributions are phased out at certain income levels.

[10] According to the Law of Social and Child Protection, Article 31, "The amount of financial support for a family that earned revenue shall be established in the amount of difference between the amount established by paragraph 1 of this Article and the average monthly revenue of the family from the previous three months."

[11] Both the formalization of the working relationship and the level of declared earnings (under-declaration of earnings for tax purposes.

contributions by employees and employers).[12] In addition, beneficiaries of social assistance and family benefits should not be penalized, especially at low levels of income, when entering the formal labor market. On the contrary, they should gain from joining the formal market; i.e., any additional formal wage should increase their net income including benefits (see purple broken line below (Rutkowski, 2011)).

Formal Jobs and Incomes from Social Benefits
(Assumptions for a couple with one earner and two children)

Source: World Bank (2012) and IMF staff calculations.

Activation Policies

Facilitating the Transition to the Labor Market

22.   The structure of the Montenegrin economy has experienced significant changes over the fifteen years. As discussed by Barlett et al. (2016, pg.25), "the structure of the economy has gone through profound changes, characterized by a continuous process of deindustrialization and fast expansion of services."[13] Due to the structural changes in the economy, there has been a reduction in the demand for occupations related to industry and an extension in the length of job search, particularly in labor intensive sectors. Even though there has been an increase in employment rates in recent years, it does not seem to be the case that a structural change towards higher productivity jobs occurred because the economy relied mainly on labor-intensive activities to achieve growth.

23.   The unemployment rate of higher-education graduates is about twice as high as in the EU-28. Barlett et al. (2016) documents that the overall unemployment rate was about twice as high as in the EU-28, as was the unemployment rate of higher-education graduates in 2014. The survey for high education graduates shows that currently unemployed graduates have had a difficult entry into the labor market and have been unemployed on average for over a year (13.5 months). The issue of job matching (e.g., ensuring that the job on offer is well matched to the qualifications held) would be an important part of the explanation of the high unemployment rate among new graduates. According to the survey presented in Barlett et al. (2016), graduates receive little assistance in finding a job other than through family and friends. There is also a prevailing view that graduates do not gain enough relevant work experience during their higher education. To mitigate this mismatch, the Employment Office implemented a program for professional training of university graduates in 2013 involving 4,000 participants (UNDP, 2016). Also, it is necessary to foster the

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[12] Budgetary implications of reduced social security contributions could be partially compensated by reducing tax exemptions or relying more on environmental and carbon taxes.

[13] By 2013, the share of employees in the service sector had reached 77 percent, while the share of employees in the industrial sector had declined to 18 percent.

cooperation between employers and high education institutions to allow employers to be involved in curricula development so they can make explicit what the labor market priorities or needs are.

### Reduction of (Long-Term) Unemployment

24.   The authorities have implemented different programs to improve the knowledge, skills, and competencies of the labor force. Over the last decade, the Employment Office of Montenegro has implemented active labor market polices (ALMPs) with the overarching objective of reducing unemployment and labor market mismatches. These programs include: (i) professional rehabilitation of persons with disabilities and other hard-to-employ persons; (ii) adult education and training; (iii) training programs for independent work; (iv) training programs for work with the employer; (v) public works; (vi) activation of users of family social benefits; (vii) stimulating the first employment of persons with acquired secondary education; and (viii) a project financing/grant scheme. These programs have the objectives of training, employment incentives, supported employment and professional rehabilitation, direct job creation, and start-up incentives. On average, 6 percent of unemployed people have been covered by these programs between 2014 and 2016. According to Drobnič et al. (2017), the percentage of programs' participants that were employed in 2016 ranged from 5 percent to 43 percent.

25.   The implementation of these programs will benefit from a strengthening of their monitoring and assessment. Careful assessment of the programs' effectiveness is needed to better inform the authorities whether the programs' primary objectives are met or whether better targeting, scope, funding, or coordination with other government departments are needed. Among other recommendations specific to Montenegro, Drobnič et al. (2017) emphasizes that: (i) active labor market measures of training, either on the basis of the criterion of occupation or skills/knowledge/competency should be made on the basis of the mismatch between demand and supply on the labor market; (ii) the analytical reports on the positioning of certain groups on the labor market should be an obligatory element of the designing of active measures; (iii) an ex-ante evaluation is required to establish an adequate scope in the process of creating and designing the measures; (iv) comprehensive evaluations (process, results, preliminary assessments) should be carried out; and (v) there should be indicators for measuring the performance of the results (both quantitative and qualitative) versus the goals of the measures.

Reducing Inactivity Rates: Some Considerations

26.   According to the LFS, the main explanations for labor inactivity are retirement and education or training. The inactivity rate of the age group between 55 and 64 years (about 56 percent) is higher than the one observed in other European countries and slightly above the average of other Western Balkan countries (about 54 percent). The authorities need to carefully assess whether there are loopholes in the system that allow people to enter into early retirement as beneficiaries of disability pension schemes (Sanfey et al., 2016). Strict eligibility criteria are important to provide incentives to remain in the labor force.

27.   Reforms to family benefit systems could increase female labor force participation. As discussed by IMF (2012, p. 28), publicly financed maternal/parental leave programs can help keep mothers connected to the labor market and increase female employment rates. However, very long paid leave could provide incentives for mothers to take lengthy periods out of the labor market, which could cause skill losses and jeopardize future employment opportunities. Jaumotte (2004) finds that parental leaves (up to a duration of 20 weeks) and child care subsidies are also identified as raising female labor force participation. In most OECD countries, the sum of paid maternity and paternity leave is below 30 weeks. In Montenegro, however, parental leave allows one of the parents

to be paid while absent from work for 365 days (52 weeks) from the birth of the child if caring for or nursing a child. In addition, an employed woman may start paid maternity leave 45 days prior to delivery, and 28 days prior to delivery as mandatory leave. As discussed by Atoyan and Rahman (2017, page 8), "…women's successful return to labor force after childbirth and durable stay in the labor force requires family leave policies that (i) do not create incentives for women to stay too long away from work causing skills loss and (ii) ensure the possibility or even mandate for fathers to take leave." In this

Paid Maternity and Paternity Leave and Female Labor Force Particiaption

$y = 0.0068x^2 - 0.7528x + 93.075$
$R^2 = 0.3138$

Sources: OECD; ILO; and IMF staff estimates.

context, the authorities could consider a reduction of the length of paid parental leave to bring it closer to the one observed in most OECD countries, require a minimum leave period for fathers, and leave it to the discretion of the prospective mother to take part of her maternity leave prior to delivery.
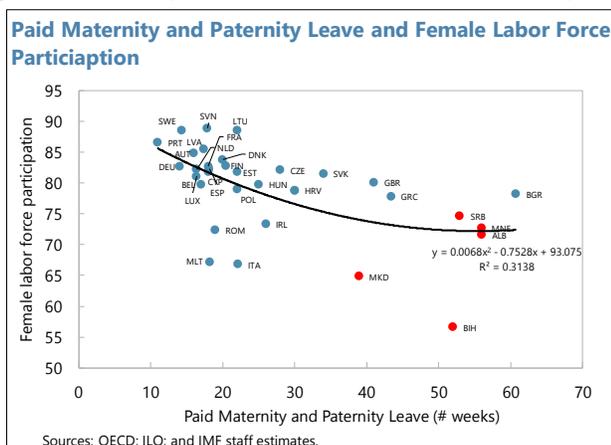
28.   At the same time child care should be available to support labor force participation of families. Child care subsidies may be effective together with affordable child care services. In the case of Montenegro, while there has been an increase in public child care units between 2010 and 2017 (from 99 to 122), the significant increase of private child care units during the same period (from 9 to 25) might reflect an increase in demand that is not fully satisfied. Child care options might have to be increased to allow more new parents to participate in the labor market. In practice, since women mostly take parental leave, it would mainly increase female labor market participation.

29.   Sizable emigration has had effects on labor force participation. Atoyan et al. (2016) document that during 1995-2010 countries in the Western Balkans have lost up to 18 percent of their population to emigration, mostly men of prime age with average or above average educational levels (brain drain). Remittances could negatively impact employment and labor force participation of both male and female workers who stay behind by increasing the reservation wage, pushing men into informal employment and women into inactivity due to family responsibilities (Atoyan and Rahman, 2017).

C. Conclusions

30.   Neither the new Labor Law nor changes labor taxation by themselves would improve current labor market outcomes significantly in Montenegro. A comprehensive and unified strategy is needed to address the country's labor market outcomes related to inactivity, long-term unemployment, and informality given the potential presence of cross-cutting common factors. Especially close coordination is needed between the Ministry of Finance and the Ministry of Labor to address the issue of employment policy, including enforcement of the Labor Code, labor taxes, and social benefits.

31.   There is still room to improve the Labor Law. Some elements of the current draft Law could be further discussed to increase flexibility, declaration of work, and labor participation. These include: (i) e*stablishing an employment relationship by allowing an* employee to work for more than one employer even if the additional work is full time; (ii) tailoring the i*nternal organization and systematization act for SMEs to reduce potential burdens (particularly for small firms)*; and (iii) *addressing informal employment not only* through compliance and enforcement with the Law, which is a necessary but not a sufficient condition to reduce informal employment. The authorities need to work on a system of incentives focused on the formalization of economic activities, which also involves employment and tax policies (comprehensive strategy).

32.   Reform options should reduce the tax wedge, especially on low income earners, with a gradual withdrawal of social assistance and family benefits to avoid poverty traps. As part of a comprehensive reform, reducing the level of the tax wedge on labor – and possibly increasing progressivity along the income spectrum – will be critical to lowering incentives for under-declaration of income. The latter could be achieved through the re-introduction of a basic allowance for wage income and/or through targeted earned income tax credits or lower employer contributions (e.g. health insurance could be financed through the general budget rather than by contributions by employees and employers). In addition, beneficiaries of social assistance and family benefits should not be penalized, especially at low levels of income, when entering the formal labor market.

33.   The authorities need to continue implementing labor market reforms aimed to increase employment and reduce the unemployment rate. The National Strategies for Employment and Human Resources Development need to continue providing the overall principles and objectives to increase human capital investment and the level of employment. The strategy should take into account an assessment of the labor market's medium-term needs to better align the education system with future labor demands and avoid simple expensive retraining. In addition, the strategy could provide a useful framework to nurture the cooperation between high education institutions and employers and bring key stakeholders together (e.g. cooperation for curricula design). While active labor market policies (ALMPs) can contribute to reduce labor market mismatches in the short to medium term, the education system is the key element for the reduction of labor market mismatches in the medium to long term. Finally, paid parental leave could be

reduced and child care options increased to increase young parents' labor market participation, particularly that of women.

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