The Slowdown of Potential Growth in the Western Balkans: Causes and Implications

Informal Seminar with International Financial Institutions on Economic Developments and Reforms in the Candidate Countries and Potential Candidates
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Non-CIS CESEE is doing very well. Growth is rapid, and unemployment is falling sharply.
Unemployment is also declining rapidly in Western Balkans

Unemployment Rate
(Percent, seasonally adjusted)

Change in Unemployment Rate since 2008Q1
(2008Q1=0, percentage points)

*For ALB 2012Q1=0
Rapid decline of unemployment suggests output growing faster than potential

Okun’s law in growth rate form:

\[
\frac{\Delta Y}{Y} \approx \frac{\Delta Y^p}{Y^p} + c(\Delta u^* - \Delta u)
\]

where:
- \(Y\) is real GDP
- \(Y^p\) is potential GDP
- \(u\) is the unemployment rate
- \(u^*\) is the NAIRU

If \(\Delta u^* \approx 0\) then

\[
\frac{\Delta Y}{Y} - \frac{\Delta Y^p}{Y^p} \approx -c\Delta u
\]
Employment grows faster than pre-crisis, even though GDP growth is much lower.

Average GDP Growth vs. Average Employment Growth in Western Balkans

- Employment grows faster than pre-crisis, even though GDP growth is much lower.
Output growth is lower than pre-crisis, but above potential

- That implies that potential output growth is even lower
- It implies that potential output growth is far below pre-crisis levels
Why has potential output growth slowed?

Average Trend Growth According to Various Estimates (Percent)

Pre-crisis (2004-08)*

Post-crisis (2015-17)**

*For MNE and UVK – 2005-08

**For ALB IMF data for 2015-16
And why has employment growth picked up?
Why has potential GDP growth slowed?

- TFP growth has slowed
- That means *same* investment yields less output increase
- Lower return on investment leads to decline of investment, further reducing growth

Why has employment growth picked up?

- Factor price changes
WHY HAS POTENTIAL GDP GROWTH SLOWED?
From production function perspective, slowdown due to lower contributions of TFP and capital

Contributions to GDP growth  
(Annual average; log change multiplied by 100)

<table>
<thead>
<tr>
<th>Country</th>
<th>2004-08</th>
<th>2015-16</th>
<th>Change</th>
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<tr>
<td>Albania</td>
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<td></td>
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<tr>
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<td>3.1</td>
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<tr>
<td>Capital</td>
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<td>-1.1</td>
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<tr>
<td>TFP</td>
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<tr>
<td>GDP</td>
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<td>Bosnia and Herzegovina</td>
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<tr>
<td>Labor</td>
<td>-0.4</td>
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<tr>
<td>Capital</td>
<td>1.2</td>
<td>0.3</td>
<td>-0.9</td>
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<tr>
<td>TFP</td>
<td>4.5</td>
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<td>-2.7</td>
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<tr>
<td>GDP</td>
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<td>Serbia and Montenegro</td>
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Note: Data for 2017 not available.
To understand this, let’s look at Solow-Swan growth model

- In Solow-Swan growth model, long-term growth depends on \( n + g \)
  - \( n \) = growth of working age population
  - \( g \) = growth of labor augmenting technological progress (which is equal to TFP growth/labor share)

- It does **not** depend on investment!
According to Solow-Swan, in long term, GDP growth does not depend on investment rate:

- Higher investment rate without increase in n+g will initially lead to higher GDP growth rate.

- But as capital-output ratio rises, growth rate falls back to old level.

- (Of course investment rate does matter for income levels)

- (Government investment may boost TFP and be better for growth than government consumption)
What happens if $n+g$ slows down?

- Lower GDP growth
- If investment rate unchanged, capital-output ratio will rise and return on capital will drop
- Investment will likely fall in response to drop in returns
- This will further reduce GDP growth (in the short term)
- We would expect both lower growth and lower investment
$n+g$ has slowed down

Working Age Population + Labor Augmenting Technological Growth
(Percent, 5 year moving averages)
As TFP growth has slowed
And working age population growth has come down

![Working Age Population Growth](chart.png)

*Working Age Population Growth (Population ages 15-64 years, 5 year moving average)*
Outcomes in line with model: GDP growth has declined
...and investment rate has fallen

Investment Rate in Western Balkans*
(Percent of GDP)

*Excluding Macedonia
Fall in TFP not confined to Western Balkans, but global problem
Why has global TFP growth slowed?

Gone with the Headwinds: Global Productivity

Gustavo Adler, Romain Duval, Davide Furceri, Sinem Kiliç Çelik, Ksenia Koloskova, and Marcos Poplawski-Ribeiro

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Several interrelated factors have played a role

- Measurement issues may have played a role, but most of TFP slowdown seems genuine.

- Weak corporate balance sheets, combined with tight credit conditions, have undermined TFP growth, partly by constraining investment in intangible assets in distressed firms.

- An adverse feedback loop of weak aggregate demand, investment, and capital-embodied technological change seems to have afflicted the advanced economies.

- Elevated economic and policy uncertainty may have further weakened TFP growth, partly by tilting investment away from higher-risk, higher-return projects.
Factors behind TFP slowdown specific to CESEE

- End of initial gains of privatization and market liberalization
  - Privatizations before the crisis provided large TFP gains
  - Market liberalization allowed for sectoral reallocations raising TFP

- After the gains from the reforms were exhausted, TFP slowed down
Slowdown of TFP growth in crisis-affected countries has been more severe.
WHY HAS EMPLOYMENT GROWTH PICKED UP?
Why has employment growth picked up?

- Shift in factor prices:
  - Before crisis
    - Capital easy to get (abundant financing; banks eager to lend)
    - Real wages growing rapidly
  - Now
    - Capital more expensive (financing less abundant; banks less willing to lend)
    - Real wages growing more slowly
Real wage growth is more subdued than before crisis

Real Wage Growth
(Deflated by GDP deflator, 2 years moving average, percent)
Unemployment-real wage growth trade-off much better than before crisis

Unemployment Rate vs. Real Wage Growth

Macedonia

Real Wage Growth (Percent, 2 year average)

Unemployment Rate (Percent, 2 year average)

Pre-crisis

Post-crisis

Serbia

Pre-crisis

Post-crisis
POTENTIAL OUTPUT GROWTH AND THE FUTURE OF CONVERGENCE
Since the mid-1990s Western Balkans have converged (although slower than NMS). How can we ensure it continues?

Note: Data for UVK not available. Source: Penn World Tables and WEO.
Western Balkans are poorer because low employment and less capital per worker
Current increase in employment rate very welcome. How long can it continue?

- Difficult question
- In many countries unemployment level still high
- Pre-crisis strong wage growth at elevated unemployment levels.
- So far, wage growth has remained modest
- But we have seen some pick-up
Will wage growth in Western Balkans accelerate further?

Nominal Wage Growth (Percent, Y/Y)

2017Q3
2015Q4

MNE  BIH  MKD  SRB  POL  HRV  LVA  SVN  CZE  SVK  LTU  EST  BGR  HUN  ROU
Continued convergence will necessitate faster TFP growth

- Faster TFP growth will not only raise GDP growth directly

- It also increases the return on investment

- More investment alone is not the answer
Investment in Western Balkans generates relatively little output growth

Real GDP Growth and Investment Rate, 2016-17
What can be done to boost TFP growth

Address several problems

- Limited access to financial services (e.g. for SMEs)
- Infrastructural gaps
- Inefficient legal systems and other government services
Improve institutions, especially judiciary

Judicial Independence, 2015

Impartial Courts, 2015

- Below 25 percentile
- Between 25 and 75 percentile
- Above 75 percentile

Source: World Economic Forum. Note: Worldwide distribution excluding LICs
Institutional reforms provide large efficiency gains

- Better institutions hold the promise of retaining emigration of skilled workers
- Effective protection of property rights provides stronger incentives for investment
- Institutions affect innovation and productivity through enhanced trust, cooperation, commitment, and contract enforcement
EU accession process should lead to improved institutions / completion of transition

Average of Six EBRD Transition Indicators in 2014

Note: 2007 for Czech Republic.
Conclusion

- GDP growth in Western Balkans is much lower than before the crisis
- Potential output growth has fallen
- Potential output growth needs to be boosted.
  - Higher TFP needed → Implications for structural policies
- Output growth is partly cyclical
  - Time to restore fiscal buffers
Debt ratios are much higher than before crisis.
Thank you
Supplemental slides
Output depends on the capital stock, employment, and labor-augmenting technological progress:

\[ Y(t) = K(t)^\alpha (A(t)L(t))^{1-\alpha} \]

The labor force grows at rate n:

\[ L(t) = L(0)e^{nt} \]

The rate of technological progress is g:

\[ A(t) = A(0)e^{gt} \]

The capital stock is determined by investment minus depreciation:

\[ \dot{K}(t) = sY(t) - \delta K(t) \]
Long-run equilibrium

Long-Run Equilibrium Path

\[ \frac{dY}{Y} = n + g \]

The growth rate of capital is:

\[ \frac{dK}{K} = n + g \]

The capital output ratio is:

\[ \frac{K}{Y} = \frac{s}{n + g + \delta} \]

The return on capital is:

\[ r = \frac{\alpha Y}{K} = \frac{\alpha (n + g + \delta)}{s} \]
Labor augmenting technological progress can be deduced from TFP growth

In the Solow-Swan framework we have:

\[ Y(t) = K(t)^\alpha (e^{gt} L(t))^{1-\alpha} \]

Taking logs and differentiating we get:

\[ \frac{dY}{Y} = \alpha \frac{dK}{K} + (1 - \alpha) \frac{dL}{L} + (1 - \alpha) g \]

Total factor productivity growth is typically derived as:

\[ g_{\text{TFP}} = \frac{dY}{Y} - \alpha \frac{dK}{K} - (1 - \alpha) \frac{dL}{L} \]

It follows that:

\[ g = \frac{g_{\text{TFP}}}{1 - \alpha} \]