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Central, Eastern, and Southeastern Europe

Effective Government for Stronger Growth

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Country Coverage and Codes

Central, Eastern, and Southeastern Europe (CESEE) refers to Albania, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Kosovo, Latvia, Lithuania, the former Yugoslav Republic of Macedonia, Moldova, Montenegro, Poland, Romania, Russia, Serbia, the Slovak Republic, Slovenia, Turkey, and Ukraine.

The following country codes, national flag markers, and regional aggregates are used in the report:

Baltic countries (Baltics) (shown in **light blue**): Estonia (EST), Latvia (LVA), Lithuania (LTU);

Central and Eastern Europe (CEE) (shown in **blue**): Czech Republic (CZE), Hungary (HUN), Poland (POL), Slovak Republic (SVK), Slovenia (SVN);

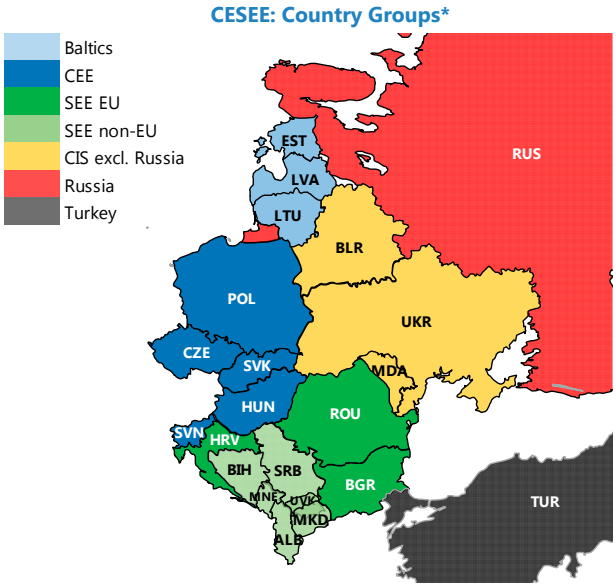
Commonwealth of Independent States (CIS) (shown in **yellow**): Belarus (BLR), Moldova (MDA), Russian Federation (RUS, also in **red** when shown separately), Ukraine (UKR);

Southeastern European EU member states (SEE EU) (shown in **green**): Bulgaria (BGR), Croatia (HRV), Romania (ROU);

Southeastern European non-EU member states (SEE non-EU or Western Balkans) (shown in **light green**): Albania (ALB), Bosnia and Herzegovina (BIH), Kosovo (UVK), FYR Macedonia (MKD), Montenegro (MNE), Serbia (SRB);

Turkey (TUR) is shown in **black**.

Averages are weighted by the purchasing-power parity GDP weights.



*/ The boundaries, colors, denominations, and any other information shown on the maps do not imply, on the part of the International Monetary Fund, any judgment on the legal status of any territory or any endorsement or acceptance of such boundaries. In this report, statistical data on Crimea and the City of Sevastopol are included as part of the data for the Russian Federation.

INTERNATIONAL MONETARY FUND

Effective Government for Stronger Growth

November 2, 2016

EXECUTIVE SUMMARY

Economic growth remains solid in much of Central, Eastern, and Southeastern Europe (CESEE). Outside the Commonwealth of Independent States (CIS), growth has continued at a good pace on the back of accommodative macroeconomic policies as well as buoyant consumption supported by strong real wage and employment growth. In Russia, the pace of economic contraction has moderated, as the economy appears to have adjusted to lower oil prices and the sanctions shock. Other CIS economies are gradually exiting from recessions on improved external demand. For the region as a whole, GDP growth is projected to reach 1.3 percent in 2016 and 2.1 percent in 2017, largely reflecting the improved outlook in the CIS.

Given mediocre prospects for potential growth and a cyclical rebound near completion outside the CIS, current growth may be difficult to sustain. With several years of growth near 3 percent, there are signs that output gaps appear closed outside the CIS, as unemployment rates are falling to pre-crisis levels, real wages are growing strongly, and credit growth is reaccelerating. However, inflationary pressures are still low and external balances healthy. Still, given subdued productivity growth and adverse demographics, these countries may not be able to maintain strong growth without renewed widening of external imbalances.

While some risks to the outlook have diminished, downside risks still dominate. Some risks, such as the pace of monetary normalization in key advanced economies and the refugee crisis in Europe, appear less prominent than six months ago. Other risks, however, such as those associated with rising political discord, have become more pronounced. Despite its modest impact so far, the longer-term effects of Brexit—the U.K. vote to leave the European Union—are yet unclear, given the uncertainty about the new U.K.-EU economic arrangements.

Policies need to strike the right balance between supporting near-term growth and rebuilding fiscal space. Over the near-term, *monetary policy* is expected to remain accommodative or to ease in countries where it is tight, which seems generally appropriate given expected inflation. At the same time, *fiscal policy* appears to be neutral or expansionary in many countries. In those economies where growth has been running above potential and output gaps are closing, this is no longer appropriate. Rather, the relatively good times should be used to rebuild fiscal buffers by following growth-friendly fiscal consolidation, which would also help reduce still high external debt levels.

For the entire region, the defining challenge is to re-accelerate potential growth and convergence. This will require a new round of structural reforms to raise investment and productivity, as discussed in the Spring 2016 *Regional Economic Issues* (REI) report. Priorities vary across countries and include strengthening governance and institutions as well as improving labor supply by increasing participation rates and reducing structural unemployment. This report focuses on measures to improve public investment management and tax administration.

The need to lift potential growth and rebuild fiscal buffers puts a premium on improving public investment management and tax administration in CESEE countries. High-quality public investment can help boost potential growth in the region, given still large infrastructure gaps relative to advanced Europe and generally low investment rates. At the same time, many CESEE countries are still facing sizeable fiscal imbalances. In this setting, improving public investment management institutions and tax administration can help create fiscal space that can be used to boost public investment or to reduce the still-elevated fiscal deficits.

Based on an in-depth analysis of public investment management and tax administration in CESEE, this REI finds the following:

- **Closing efficiency gaps in public investment and tax collection could bring sizable benefits**. Public investment in many CESEE countries, except the Baltic states, is less efficient than in other European countries. Tax efficiency gaps—and in particular, tax compliance gaps—remain a challenge in much of the region as well. By reducing these efficiency gaps (estimated relative to the income level-specific benchmarks), CESEE countries could generate between 2 and 4 percent of GDP in fiscal space annually that could be used either for public investment or for fiscal consolidation. Based on the standard estimates for public investment multipliers (see the October 2014 *World Economic Outlook*), such additional public investment could increase the level of GDP by 2–4 percent over the medium term, with the exact numbers depending on the degree of slack in the economy and on the efficiency of public investment. There are also broader benefits from having better public institutions, including a smaller shadow economy.

- **Further upgrades of public investment management should focus on improving allocation and implementation frameworks and procedures**. Project appraisal and management could be strengthened by building capacity, publishing cost-benefit analyses of major projects, developing procedures for project adjustment, and conducting ex-post evaluations. In CESEE EU countries, stronger public investment management institutions are associated with higher absorption of the EU structural and cohesion funds.

- **Improvements in tax administration should aim at reducing compliance gaps**. Countries where tax collection is not unified in a single body or where a functional structure is lacking need to bring their institutional arrangements in line with best practice. Also, many CESEE countries seem to be lagging in provision of online services due to outdated and fragile systems that significantly constrain their reform efforts, including adoption of a strategic management approach to tax compliance. Several countries also need to improve operational performance—particularly those with high tax debt.

- **Successful reforms to raise government effectiveness require taking into account political economy factors**. Certain features of political institutions, such as poor accountability, low quality of bureaucracy and weak control of corruption in politics, tend to be negatively correlated with the strength of public investment management and tax administration. To overcome these constraints, the design of reforms should include elements that help reduce resistance to reforms and build the support base for their successful completion.

Approved by
Poul M. Thomsen

Prepared by a staff team consisting of Ernesto Crivelli, Jiří Podpiera, Faezeh Raei, Ara Stepanyan, and Yan Sun, with input from Dilyana Dimova and Gil Mehrez, as well as from country teams, and research assistance from Xuan Tu and Cristina Batog. The team was led by Anna Ilyina and Emil Stavrev, under the general guidance of Jörg Decressin. Administrative support was provided by Gilda Ordoñez-Baric.

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ANNEXES

I. RECENT DEVELOPMENTS, OUTLOOK, AND RISKS

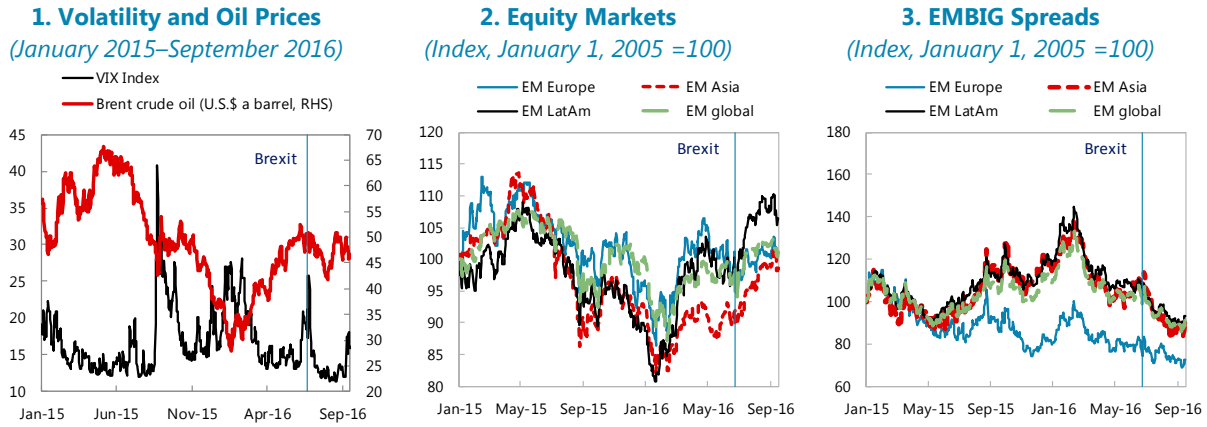
Growth remains solid in much of the region, despite mediocre global activity. Outside the Commonwealth of Independent States (CIS) the recovery is now well advanced, but medium-term prospects are appreciably less bright than before the global financial crisis, as elsewhere in the world. In these economies, growth is forecast to continue at a good pace, driven by private consumption as wage growth is strengthening. Investment is lagging but should eventually pick up pace. In other economies, notably the CIS, low commodity prices and other shocks continue to reverberate, but the worst seems to be over and growth is beginning to turn positive.

A. CESEE Recovery Continues amid Mediocre Global Growth

Both structural and cyclical forces continue to shape the recovery globally and in CESEE:

- *Excess supply concerns have kept commodity prices low.* Together with low imported inflation, low oil prices have, in part, supported the CESEE recovery, keeping inflation in the CESEE EU economies subdued and boosting income and consumption growth. At the same time, low commodity prices as well as the sanctions introduced in 2014 have adversely affected Russia and, through various economic linkages, its neighboring CIS economies.
- *Structurally weak growth in advanced economies* has held back global growth. The rebalancing in China, while a necessary and a welcome process, has added to downward pressures. As a result, global trade is anemic, continuing to weigh on CESEE activity.
- *Delays in normalization of monetary policy in advanced economies* due to growth setbacks benefited emerging market economies, including in the CESEE region, by keeping financial conditions supportive. The impact of Brexit on CESEE financial markets has been relatively mild and short lived, given relatively limited direct trade and financial exposure of the region to the United Kingdom. After an initial spike following the Brexit vote, financial market volatility has declined (Figure 1.1, panel 1).

Figure 1.1. CESEE: Oil Price and Financial Market Developments

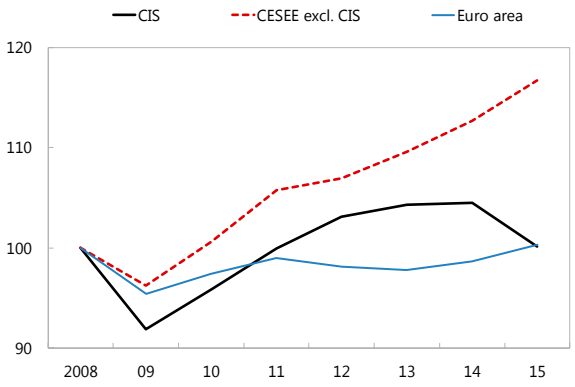


Sources: Bloomberg LP; Haver Analytics; and IMF staff calculations.
Note: CESEE = Central, Eastern, and Southeastern Europe; EM = emerging market economies; EMBIG = J.P. Morgan Emerging Market Bond Index Global; RHS = right scale; VIX = Chicago Board Options Exchange Volatility Index.

Much of the CESEE region continues to grow at a solid pace

The region has adjusted relatively fast in the aftermath of the global financial crisis, with growth in many economies running about 3 percent for some time. Most CESEE economies experienced a deep recession after a credit boom ended abruptly with the onset of the crisis. Following a sizable adjustment, however, the region reached pre-crisis GDP levels within two years, much faster than the euro area (Figure 1.2). In many CESEE countries outside the CIS, the appreciable reduction in pre-crisis imbalances has helped them maintain solid growth. In Russia and the rest of the CIS, while the adjustment to lower commodity prices continues, the growth outlook has improved modestly, reflecting firming oil prices. The key developments in the region in the first half of 2016 include the following:

Figure 1.2. CESEE: Real GDP Growth Relative to the Euro Area
(Index, 2008 = 100)



Source: IMF World Economic Outlook database.
Note: CESEE = Central, Eastern, and Southeastern Europe; CIS = Commonwealth of Independent States.

- *Outside the CIS*, growth has continued at a solid pace on the back of accommodative macroeconomic policies, buoyant private consumption supported by strong wage growth and declining unemployment (Figure 1.3, panels 1 and 2). Investment has been sluggish in many countries, in the CESEE EU countries, this weakness partly reflects lower absorption of the EU Structural Funds during the transition to the new 2014–20 program (Figure 1.3, panel 2), although investment increased in SEE-EU driven by Romania. In the SEE non-EU countries, stronger domestic demand in the second quarter of 2016 (both consumption and investment) has been offset by weaker net exports.

- *In the CIS*, the pace of contraction has been moderating in Russia as oil prices edged up from their lows, while the rest of the CIS is gradually exiting from recession, on the back of improved external demand.

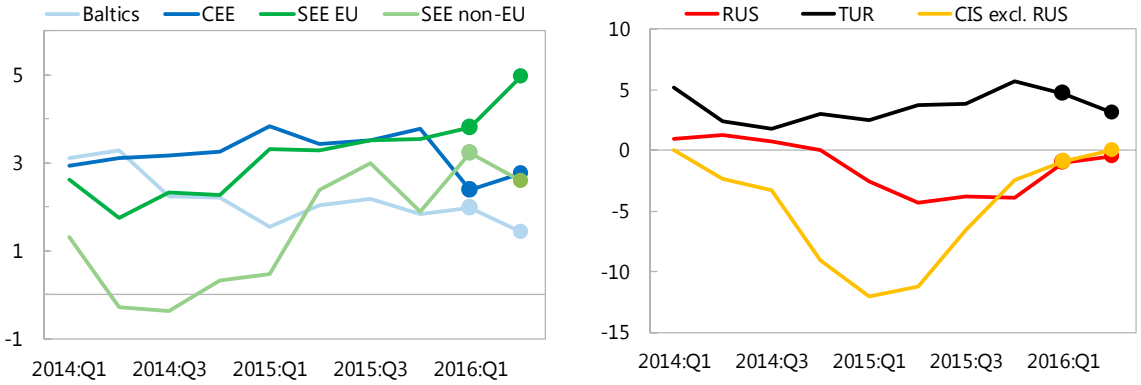
The cyclical recovery may be near completion in much of the region

Most indicators suggest that the recovery is largely completed and that output gaps are likely closed outside the CIS. In particular, unemployment rates are close to pre-crisis levels, wages are growing at a solid pace, and credit recovery is picking up. These developments are in contrast to the still-low inflationary pressures and healthy current account balances.

Figure 1.3. CESEE: Recent Economic Developments

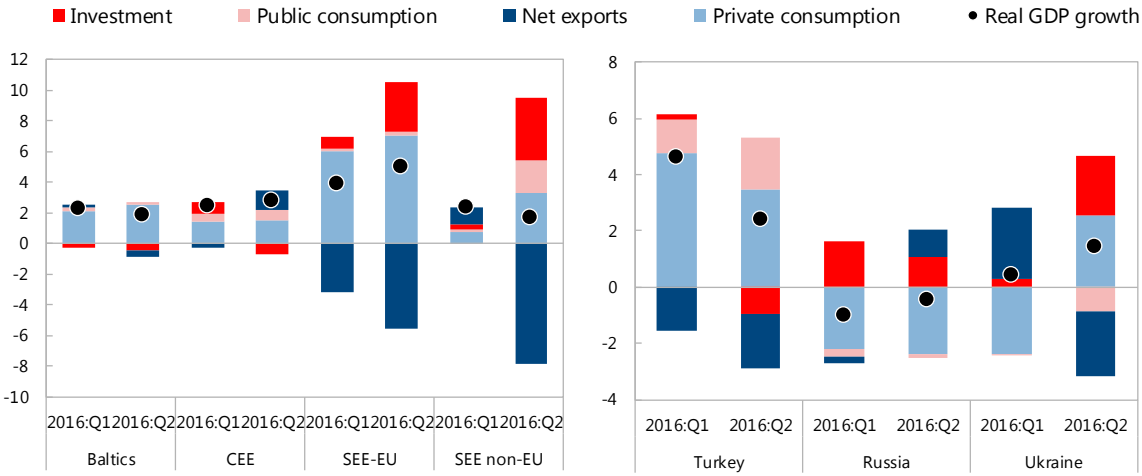
1. Real GDP Growth

(Percent, year over year)



2. Contribution to Real GDP Growth

(Percent, year over year)



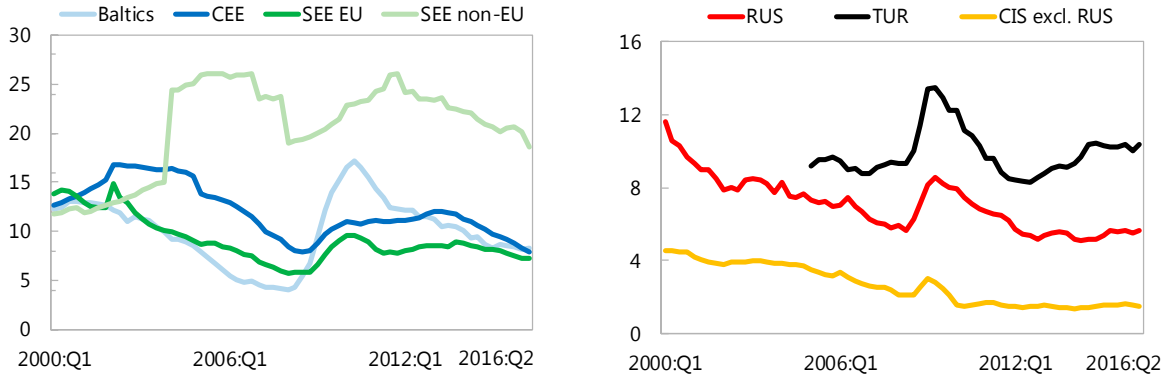
Sources: Haver Analytics; and IMF staff calculations.
Note: CEE = Central and Eastern Europe; CESEE = Central, Eastern, and Southeastern Europe; CIS = Commonwealth of Independent States; SEE = Southeastern Europe.

Unemployment is reaching pre-crisis lows, wages have been growing at a strong pace for some time, and the current account balances have begun to deteriorate again. Labor markets have strengthened further in the CESEE countries outside of the CIS. With unemployment close to historical lows (Figure 1.4, panel 1), wage pressures continue to build in several countries (Figure 1.4, panel 2), reflecting also sizable increases in minimum wages (SEE EU, some of the Baltics, and Turkey). In the CESEE countries, according to available data, the share of workers earning the minimum wage ranges from 4 to 20 percent. Increases in minimum wages contribute to overall wage growth directly and indirectly by pushing up average private sector wages. As discussed in Box 1.2 of the Spring 2016 *Regional Economic Issues* report (REI), the elasticity of average wages with respect to minimum wages varies from 10 to 40 percent across the region. While the strong wage growth does not seem to have had negative effects on unemployment yet, if it continues, it would harm competitiveness and job creation (see Box 1.2).

Figure 1.4. CESEE: Unemployment and Wages

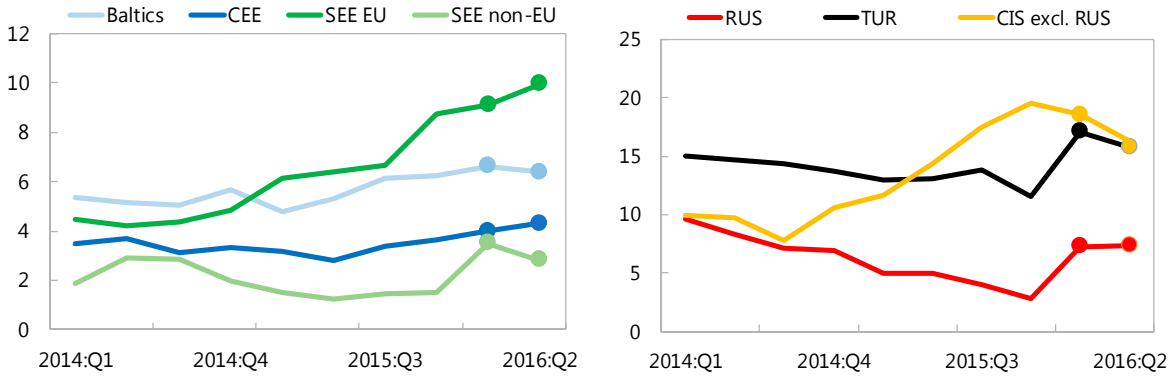
1. CESEE: Unemployment Rate

(Percent, seasonally adjusted)



2. CESEE: Nominal Wage Inflation

(Percent, year over year)

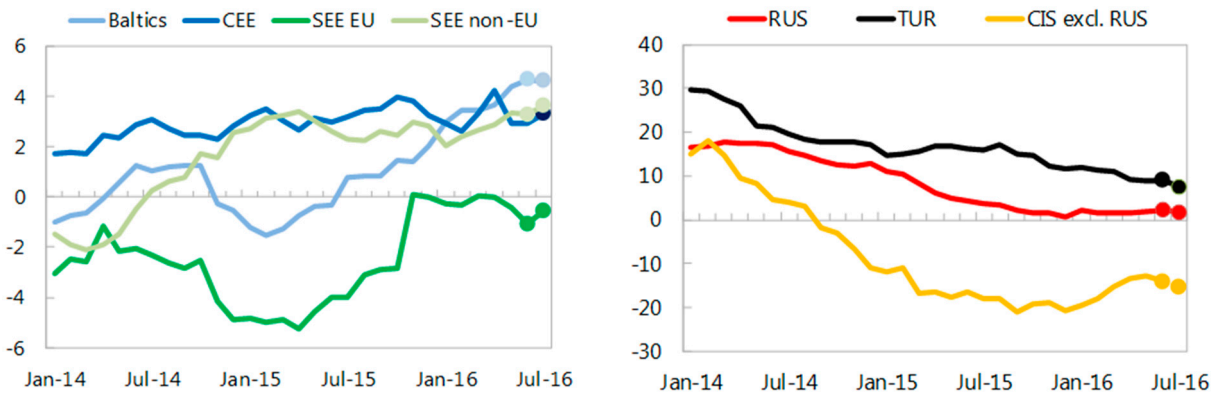


Sources: Haver Analytics; and IMF staff calculations.
Note: CEE = Central and Eastern Europe; CESEE = Central, Eastern, and Southeastern Europe; CIS = Commonwealth of Independent States; SEE = Southeastern Europe.

The credit recovery appears to be catching up with business activity, with the divergence across countries driven mainly by local conditions. Overall, the region is in the repair or the early expansion stage of the credit cycle. Outside the CIS and Turkey, credit growth has generally improved since end-2015, reaching 3–5 percent in the second quarter of 2016 in most sub-regions. In the SEE EU countries, credit contraction continues driven by Bulgaria and Croatia (Figure 1.5). However, credit growth dynamics vary across CESEE countries. Reflecting growth in household incomes, credit growth to households has been improving more consistently across the region, while credit to businesses has fared unevenly. The divergence in credit developments across these economies is related to demand and supply factors (see Box 1.1). On the supply side, in countries where nonperforming loans (NPLs) have been low or reduced significantly post crisis (for example, CEE, Estonia, Lithuania,) and where banks have been more profitable (for example, the Czech Republic, Poland, Slovak Republic,), credit growth has been stronger. On the demand side, in countries with lower corporate leverage, credit to corporates is expanding, while it is still contracting or anemic in countries with higher leverage (for example, Croatia, Latvia).

Figure 1.5. CESEE: Nominal Credit Developments

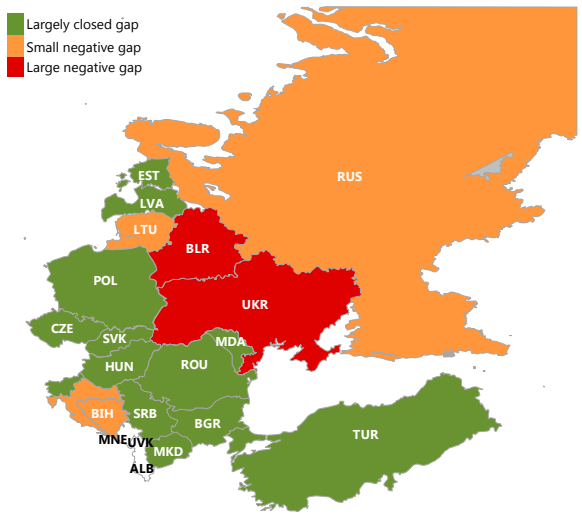
(Percent, year over year, net of foreign exchange valuation effects)



Sources: Haver Analytics; European Bank for Reconstruction and Development; and IMF staff calculations.
Note: CEE = Central and Eastern Europe; CESEE = Central, Eastern, and Southeastern Europe; CIS = Commonwealth of Independent States; SEE= Southeastern Europe.

Accordingly, the IMF staff estimates that output gaps outside the CIS have likely closed (Figure 1.6). A variety of estimates suggest that the cyclical recovery in CESEE economies has been completed, except in the CIS. In countries outside the CIS, output gaps are broadly closed, except for persistent negative output gaps in Bosnia and Herzegovina and Croatia. Closed or small positive output gaps largely reflect elevated capacity utilization and cyclical increases in employment and hours worked, against an appreciably lower estimate for post-crisis potential output growth.

Figure 1.6. CESEE: Estimated Output Gaps, 2016



Sources: IMF World Economic Outlook database; and IMF staff calculations.
Note: Output gaps in this figure reflect IMF country desk estimates. Ranges are defined as (1) largely closed gap: narrower than –1.5 percent; (2) small negative gap: between –3 and –1.5 percent; and (3) large negative gap: wider than –3.5 percent.

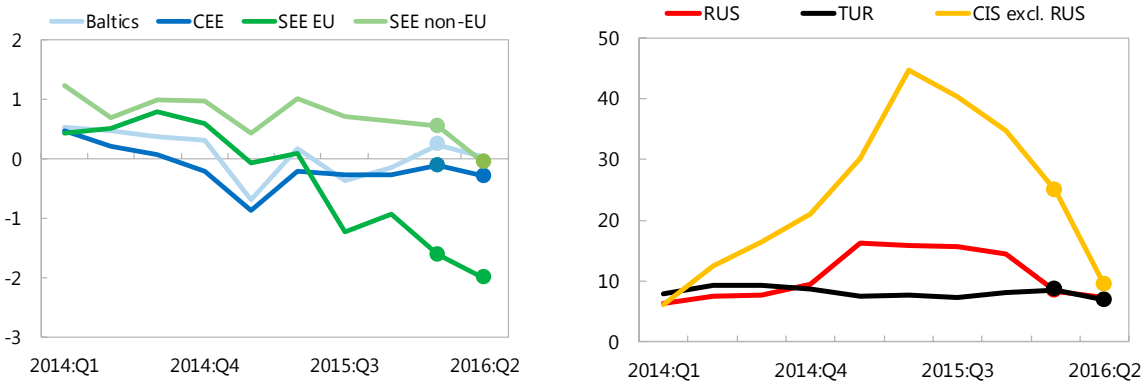
That said, there is a wide margin of uncertainty around output gap estimates. Output gap estimates are prone to change appreciably over time: frequent data revisions and the end-point bias of filtering methods can lead to major revisions. Also, given the structural changes that the CESEE economies have undergone and the short time series available to estimate output gaps, the confidence bands around estimates are large. Thus, in assessing the macroeconomic policy stance, a wide variety of indicators should be taken into account, including country-specific data, rather than just econometric estimates of output gaps.

Despite many indicators pointing to largely closed output gaps however, inflationary pressures remain low outside the CIS and Turkey. Both headline and core inflation are low, partly as a result of common external factors (for example, low energy prices), and inflation expectations continue to be low and falling (Figure 1.7, panel 3). In the SEE EU countries (Figure 1.7, panel 1), negative inflation is driven by value added tax cuts in Romania. The upshot of low inflation and the relatively high wage growth may be that corporate profit margins are falling, despite some recovery in productivity. Box 1.2 looks at the potential implications of lower profit margins for inflation and growth.

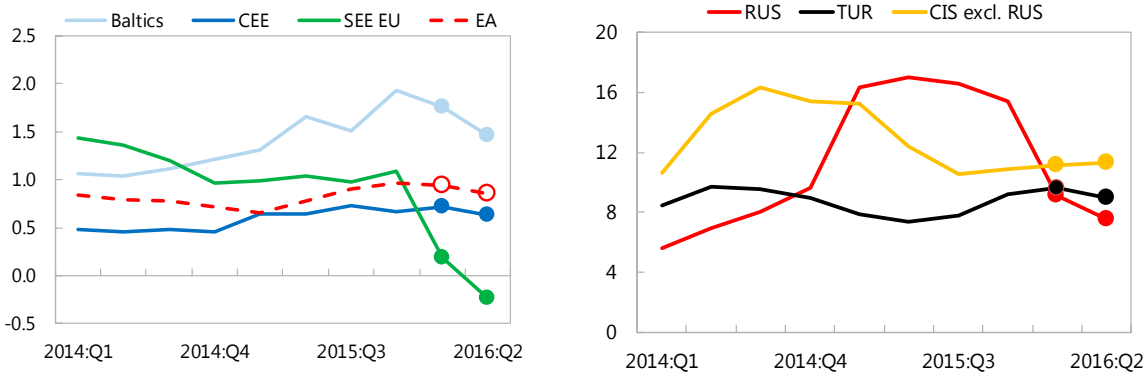
In contrast, Russia and the CIS continue to experience appreciable slack (Figure 1.6). Output gaps remain negative, on the back of subdued private consumption and investment, and real credit growth, while improving, is still negative. Although still elevated, inflation in these countries has declined, reflecting the still negative output gaps together with lower-than-expected exchange rate pass through and declining international food prices (Figure 1.7).

Figure 1.7. CESEE: Inflation and Inflation Expectations

1. CESEE: Headline Inflation *(Percent, year over year)*



2. CESEE: Core Inflation *(Percent, year over year)*

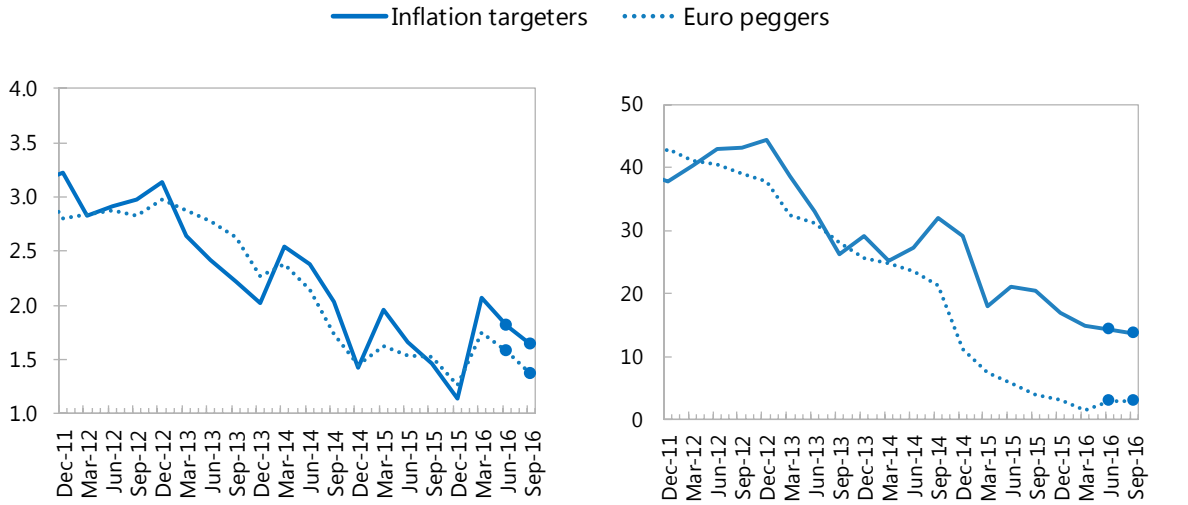


Sources: Consensus Forecast; Haver Analytics; and IMF staff calculations.
Note: CEE = Central and Eastern Europe; CESEE = Central, Eastern, and Southeastern Europe; CIS = Commonwealth of Independent States; SEE = Southeastern Europe.

3. CEE and SEE EU: Inflation Expectations

Consensus Forecasts of Next Year's Inflation
(Percent)

Consumer Expectation of Inflation (year ahead) 1/
(Share (net), percent)



Sources: Consensus Forecast; Haver Analytics; and IMF staff calculations.
Note: CEE = Central and Eastern Europe; CESEE = Central, Eastern, and Southeastern Europe; CIS = Commonwealth of Independent States; SEE = Southeastern Europe. Inflation targeters—the Czech Republic, Hungary, Poland, and Romania; Euro peggers—Bulgaria, Croatia.
1/ The indicator summarizes the difference between the share of respondents (in percentage points of total answers) expecting higher and lower prices over the next 12 months. A positive number indicates more people expect higher prices. It is calculated as +1* "Will rise a lot"+1/2* "Will rise moderately" –1/2* "Will stay about the same" –1* "Will fall" seasonally adjusted.

B. Monetary, Financial, and Fiscal Conditions

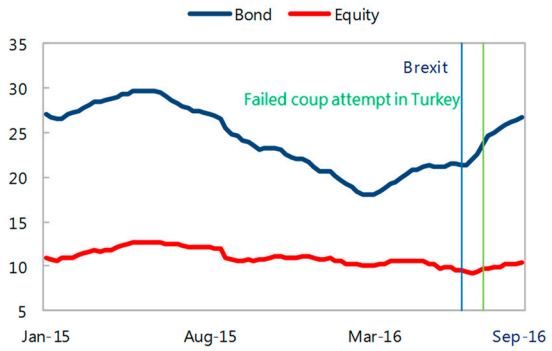
Monetary policy is expected to remain accommodative over the near term or to ease in places where it is contractionary. Monetary conditions continue to be very accommodative in economies pegging to the euro, reflecting the European Central Bank's policies. In the inflation-targeting CEE countries, given negative headline inflation, low core inflation, and subdued inflation expectations, monetary policy is expected to stay easy as well, given that inflation, while gradually increasing, is projected to remain below targets by end-2017. The forecasts assume no significant changes going forward. In Turkey, despite above-target inflation, the central bank eased monetary conditions by lowering the overnight lending rate, as the economy has been slowing following a strong finish in 2015. Again, the forecast assumes no significant change in monetary conditions. In Russia, the monetary stance is still tight, although the central bank lowered its key policy rate in 2016 as inflation and inflation expectations have declined, and more easing is assumed going forward as inflation gradually converges to the inflation target.

Financial conditions are expected to remain supportive, as monetary policy in advanced economies is expected to tighten more slowly than envisioned in April. Financial market sentiment toward emerging market economies has improved as concerns about a fast pace of Federal Reserve tightening eased and very low interest rates are expected to continue for longer in the other major advanced economies, keeping financial conditions for CESEE economies along

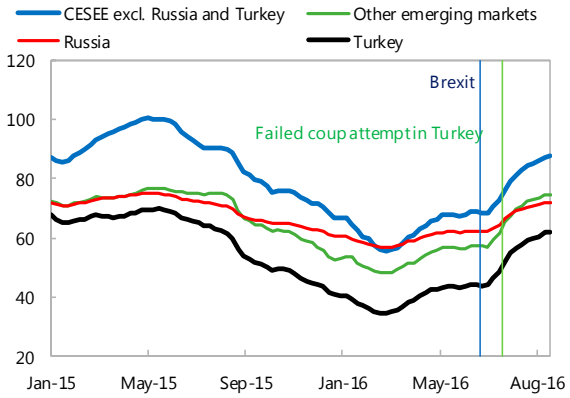
with other emerging market economies easy. Inflows to the bond markets have increased, and balance of payments data suggest that net capital flows have improved in most countries since end-2015 (Figures 1.8, panels 1–3). Against the backdrop of favorable external financing conditions, negative country specific shocks appear to have had a limited impact so far. For example, in Turkey, the failed coup attempt and subsequent imposition of a state of emergency have had only a small effect on capital flows (Figure 1.8, panel 3), notwithstanding an easing of Turkish monetary policy and a still large current account deficit. And, market reaction to the recent downgrade of Turkey's sovereign credit to non-investment grade by Moody's (Ba1, stable outlook) has been negative, but orderly.

Figure 1.8. CESEE: Capital Flow Developments

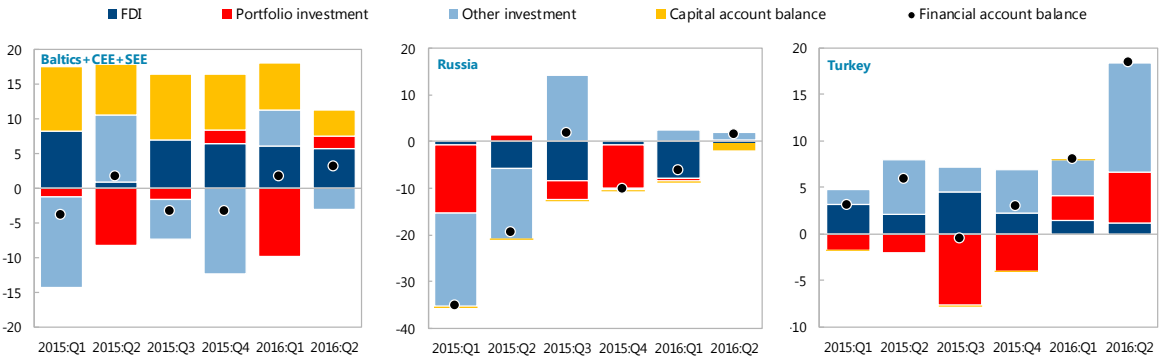
1. CESEE: Cumulative EPFR Portfolio Flows
(Billions of U.S. dollars)



2. CESEE: Cumulative EPFR Flows into Bond Funds
(May 2013 = 100)



3. Balance-of-Payments Capital Inflows
(Billions of U.S. dollars)



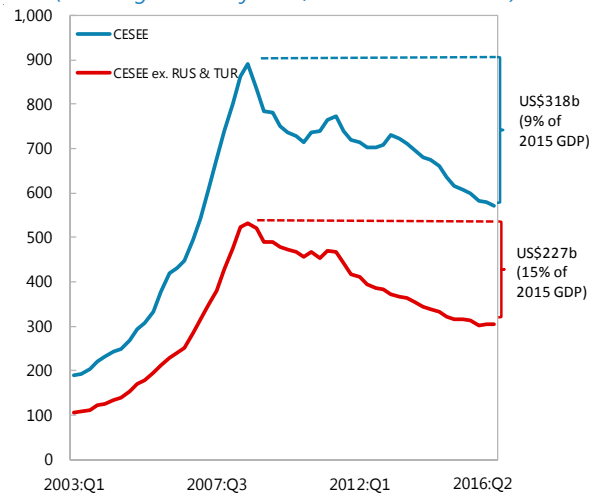
Sources: Bloomberg LP; Haver Analytics; and IMF staff calculations.
Note: CEE = Central and Eastern Europe; CESEE = Central, Eastern, and Southeastern Europe; CIS = Commonwealth of Independent States; SEE = Southeastern Europe; FDI = foreign direct investment.

Western banks' exposures to the region are showing signs of stabilization, following several years of deleveraging after the financial crisis, and the trend is likely to continue. In the aftermath of the crisis, Western banks began to reduce their external positions in the CESEE region because of the need to reduce leverage and rebuild capital buffers, as well as weak credit demand. The decline in foreign banks' claims on CIS countries accelerated after these countries slipped into recession in 2014 (Figure 1.9, panel 2). Since late 2015, however, external positions of the Bank for International Settlements (BIS)-reporting banks outside the CIS have shown some signs of stabilization (Figure 1.9, panel 1). According to bank surveys, Western banks adjusted their exposures in the region, differentiating across countries based on their economic prospects and progress on private nonfinancial sector deleveraging (EIB, 2015, 2016). Banks have gradually increased exposures to countries with better economic fundamentals and market potential, while continuing to withdraw from countries struggling with high NPLs, high corporate leverage, and weak aggregate demand (for example, Croatia, Hungary, Slovenia) (see also Box 1.1). Going forward, challenges remain, as many European banks continue to struggle with still high levels of impaired assets and low profitability in a low-growth and low-interest rate environment (IMF 2016c, Chapter 1). Thus, further improvements in lending conditions will likely be very gradual.

Figure 1.9. CESEE: External Position of BIS-Reporting Banks

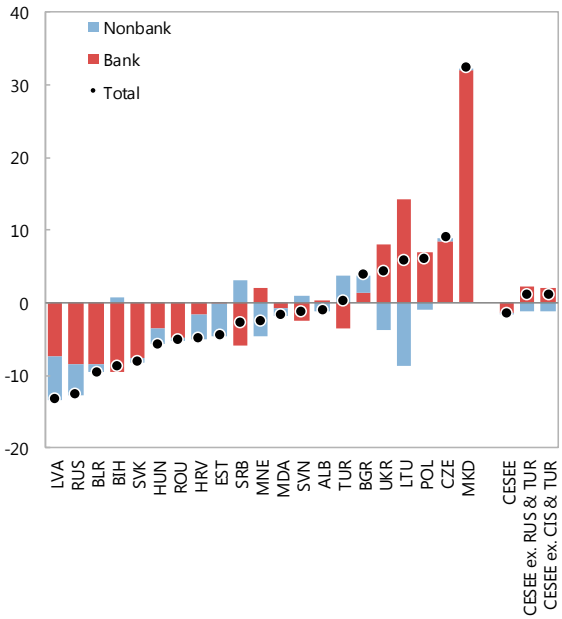
1. Total, Billions of U.S. dollars, 2003:Q1–2016:Q2

(Exchange-rate adjusted, vis-à-vis all sectors)



2. Change in Exposure, 2016:H1

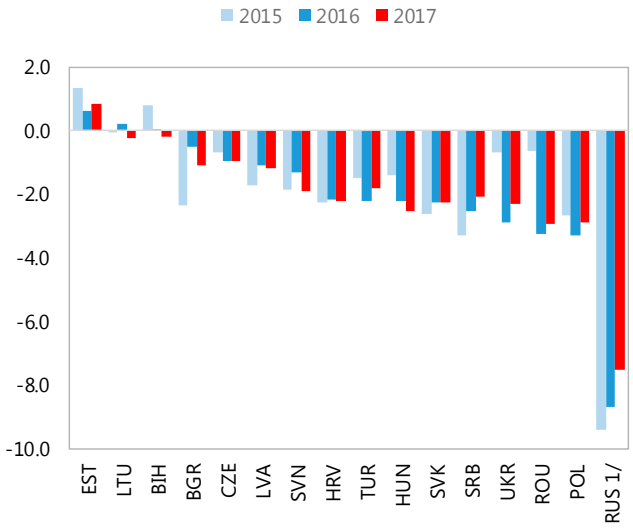
(Exchange-rate adjusted, percent of 2015Q4 stock)



Sources: Bank for International Settlements, Locational Banking Statistics; IMF, World Economic Outlook database; and IMF staff calculations.
Note: b = billion; CESEE = Central, Eastern, and Southeastern Europe; CIS = Commonwealth of Independent States.

Fiscal policy is expected to be neutral or expansionary in many economies in the region, while structural fiscal deficits remain large. On the back of largely closed output gaps outside the CIS, fiscal policy is pro cyclical in several economies, with structural fiscal deficits estimated to deteriorate in 2016–17 relative to 2015 (for example, the Czech Republic, Hungary, Poland, Romania, Turkey). The deterioration of structural fiscal balances in these economies reflects a combination of spending slippages and tax cuts. For example, in Romania, a package of tax cuts and expenditure hikes, including an ad-hoc salary increase, is expected to reverse the consolidation trend seen in recent years. In Turkey, higher expenditures (for example, due to the increase of the minimum wages) will push up fiscal deficit in 2016. More broadly, structural fiscal deficits are projected to stay large (2–3 percent of GDP) in many CESEE countries (Figure 1.10).

Figure 1.10. CESEE: Structural Fiscal Balance
(Percent of GDP)



Source: IMF World Economic Outlook database.
1/ Non-oil primary structural fiscal balance.

C. CESEE Outlook: Questions about Medium-Term Growth

Can the current pace of growth in CESEE economies be sustained?

Growth is projected to continue at a similar pace or strengthen in many CESEE countries over the near term. Accommodative macroeconomic policies and buoyant consumer confidence are likely to propel near-term growth. In addition, growth should increase as a number of emerging market economies that experienced deep recessions, including Russia, begin to recover. The near-term outlook across sub-regions is as follows:

- In the *Baltics*, growth is projected to firm up, driven by private consumption and supportive macroeconomic policies. In the *CEE* region, although somewhat slower than in 2015, in large part as a result of lower EU funds usage for the 2014–20 cycle, growth is projected to remain solid at about 3 percent in 2016–17, as fiscal stances ease and investment recovers. In the *SEE EU* economies, growth is projected to hover around 3¼–3½ percent, driven by private consumption and easier fiscal policy in some. In the *SEE non EU* economies, growth is expected to improve in 2017, mainly reflecting stronger growth in Serbia.

- In *Russia*, following a significant moderation of the recession in 2016, GDP is projected to return to growth in 2017 supported by higher oil prices. In the CIS, the recovery is projected

to gather pace in 2017, supported by an improved outlook in Russia, given the close linkages between Russia and the rest of the CIS through trade and remittances.

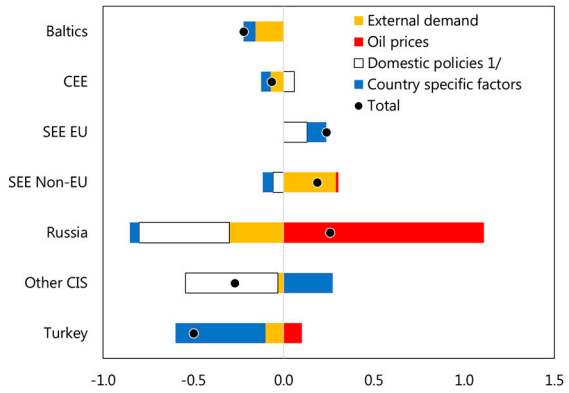
- In *Turkey*, growth is expected to be below potential over the next couple of years. In 2016, slower growth reflects adverse external shocks, alongside the negative impact of the credit slowdown, real effective exchange rate appreciation, and weakness in consumer and investor confidence amidst heightened political uncertainty. In 2017, growth is projected to remain below potential as the one-off factors pushing growth in 2016 dissipate, and headwinds from eroded business confidence further weigh on investment.

Figure 1.11. CESEE: GDP Growth Forecasts and Revisions

1. Near-Term Growth Projections
(Percent, revisions are in percentage points)

	Projections			Difference from April WEO	
	2015	2016	2017	2016	2017
CESEE	-0.2	1.3	2.1	0.4	0.0
Baltics	1.8	2.3	3.0	-0.4	-0.2
CEE	3.7	2.8	3.0	-0.3	-0.1
SEE EU	3.3	4.1	3.3	0.6	0.2
SEE Non-EU	2.2	2.9	3.2	0.2	0.2
Russia	-3.7	-0.8	1.1	1.1	0.3
Other CIS	-7.6	0.1	1.6	-0.1	-0.3
Turkey	4.0	3.3	3.0	-0.5	-0.5

2. Factors behind the 2017 Growth Revisions
(Percentage points)



Sources: World Economic Outlook database, October and April 2016 published versions; IMF country team estimates.
Note: CEE = Central and Eastern Europe; CIS = Commonwealth of Independent States; EU = European Union; SEE = Southeastern Europe; WEO = *World Economic Outlook*. Panel 2 shows revisions for 2017 growth projections relative to the spring of 2016.
1/ Domestic policies include monetary policy, credit conditions, and fiscal policy (including EU Structural and Cohesion Funds).

Inflation in the CESEE EU countries is projected to increase gradually and remain below 2 percent in 2017. In part reflecting common external factors, headline inflation in these countries is now projected to increase more gradually in the near term relative to the April expectations, with the inflation forecast revised down by ¾ and ½ percentage points for 2016 and 2017, respectively (Figure 1.12). For 2017, the downside revisions reflect common external factors (higher-than-anticipated impact of past commodity price declines) and country-specific factors.

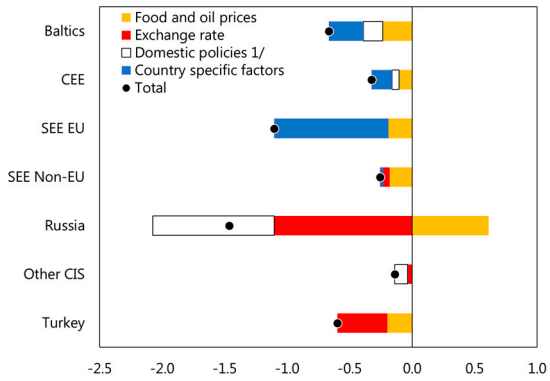
In the CIS and Turkey, inflation is projected to remain high. In the CIS, inflation is projected to moderate further over the near term reflecting somewhat stronger exchange rates. In Turkey, inflationary pressures are expected to stay elevated amid carryover effects from last year's depreciation and monetary easing.

Figure 1.12. CESEE: Inflation Forecasts and Revisions

1. Near-Term Inflation Projects
(Percent, year over year, revisions in percentage points)

		Projections		Difference from April WEO	
	2015	2016	2017	2016	2017
CESEE	10.1	5.4	4.8	-0.9	-0.9
Baltics	-0.3	0.4	1.4	-0.5	-0.7
CEE	-0.5	-0.2	1.3	-0.4	-0.3
SEE EU	-0.7	-1.5	1.3	-1.3	-1.1
SEE Non-EU	0.7	0.6	2.0	-0.4	-0.3
Russia	15.5	7.2	5.0	-1.1	-1.5
Other CIS	36.1	14.0	11.1	-0.4	-0.1
Turkey	7.7	8.4	8.2	-1.4	-0.6

2. Factors behind the 2017 Inflation Revisions
(Percentage points)



Sources: World Economic Outlook database, October and April 2016 published versions; IMF country team estimates.
Note: CEE = Central and Eastern Europe; CESEE = Central, Eastern, and Southeastern Europe; CIS = Commonwealth of Independent States; EU = European Union; SEE = Southeastern Europe; WEO = *World Economic Outlook*.
1/ Domestic policies include monetary and fiscal (changes in taxes) and other factors, including output gap and inflation expectations.

Looking further ahead, the current pace of growth may be challenging to sustain. The region is exposed to global headwinds and its growth potential appears to have declined after the global financial crisis. As discussed in the Spring 2016 REI (Chapter 2), reflecting lower investment rates and weaker productivity growth, potential growth across the region has declined significantly following the crisis (to 1–4 percent across countries during 2013–15, from 3–8 percent during 2002–08). In an environment of a mediocre global activity, with largely closed output gaps and growing pressures on profits outside the CIS, CESEE countries may not be able to maintain strong growth without either significantly boosting productivity or facing a renewed widening of external imbalances.

D. Risks Remain Tilted to the Downside

The risks to the outlook have diminished somewhat compared with the Spring 2016 *Regional Economic Issues*, but continue to be tilted to the downside. While some risks, such as the pace of monetary normalization in key advanced economies and the refugee crisis in Europe, appear less prominent relative to the spring, other risks, particularly those associated with rising political discord have become more pronounced. The main downside risks are:

- *Tighter and more volatile global financial conditions*. The likelihood and the impact of this risk is assessed by the IMF staff as broadly unchanged from six months ago (Figure 1.13). Although markets have shown resilience in response to the Brexit shock, market risk premiums in the CESEE economies appear generally compressed, which leaves countries exposed to the risk of an abrupt correction. Countries with a relatively high leverage or with financing needs (fiscal or external—for example, Belarus, Croatia, Hungary, Montenegro, and Turkey) are more vulnerable to an abrupt shift in market sentiment. This is particularly

relevant for Turkey, given a large negative net international investment position and sizeable external financing needs.

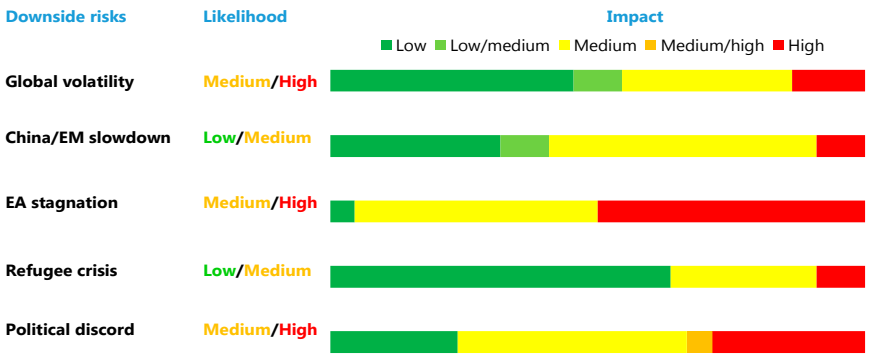
- *Structurally weak growth in major advanced economies, notably the euro area*. The likelihood and impact of this risk are broadly unchanged since the spring. Persistently slow growth in advanced economies, and notably the euro area, is an important risk for the region, given its high real and financial linkages with the euro area. Moreover, although the initial impact of Brexit was less than feared, the medium- and long-term effects are unclear, including the impact on the EU budget and EU structural funds, given the uncertainty about the economic arrangements between the United Kingdom and the European Union.

- *A significant slowdown in China or a failure of other major emerging market economy to gradually heal*. Both the likelihood and impact of this risk are broadly unchanged from six months ago. An appreciable slowdown in China would affect CESEE economies via different channels (for example, CEE and some in SEE economies via lower exports and commodity exporters, notably Russia, through negative terms of trade shocks, as commodity prices decline).

- *Political discord and policy uncertainty*. This risk has been first discussed in the Spring 2016 REI, but is now seen as more likely and with a higher impact than six months ago. Since then, there has been an increase in political uncertainty in some CESEE countries, while others have seen rising inward-looking sentiments, which may lead to increased pressures for policy reversals or failure to implement needed reforms. The economic fallout from inward-looking policies and protectionism can be appreciable, with an adverse impact on both local economies and trade.

Figure 1.13. Downside Risks to the Outlook: Likelihood and Impact

(Percent of all responses)

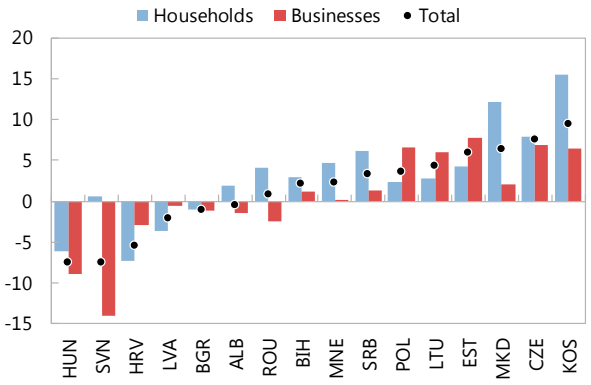


Source: IMF country team survey.
Note: The relative likelihood of risks reflects the IMF staff's subjective assessment of the risks surrounding the baseline. The relative impact is based on country-specific assessments; the bars show the distribution across countries based on the estimated impact. "Low" indicates a probability below 10 percent, "Medium" indicates a probability of 10 to 30 percent, and "High" indicates a probability of 30 to 50 percent. EA = euro area; EM = emerging market economy.

Box 1.1. Credit Recovery: What Is Behind the Divergence?

After several years of contraction since the global financial crisis, credit is finally picking up in many CESEE countries outside the CIS and Turkey. In the Czech Republic, Poland, and the Slovak Republic, and more recently, Lithuania, credit growth has increased notably since 2014 (Figure 1.5). In contrast, credit has continued to contract in a number of countries, most notably in Croatia, Hungary, Latvia, and Slovenia, while corporate credit growth has remained slightly negative in Albania, Bulgaria, and Romania (Figure 1.1.1). However, there are signs that credit contraction may be nearing a trough, with economic recovery now well advanced.

Figure 1.1.1. Credit to Households and Corporations
(July 2016, percent change, year-over-year exchange rate adjusted)



Sources: European Bank for Reconstruction and Development; and IMF staff calculations.
Note: Credit for small, non-incorporated firms are included in households.

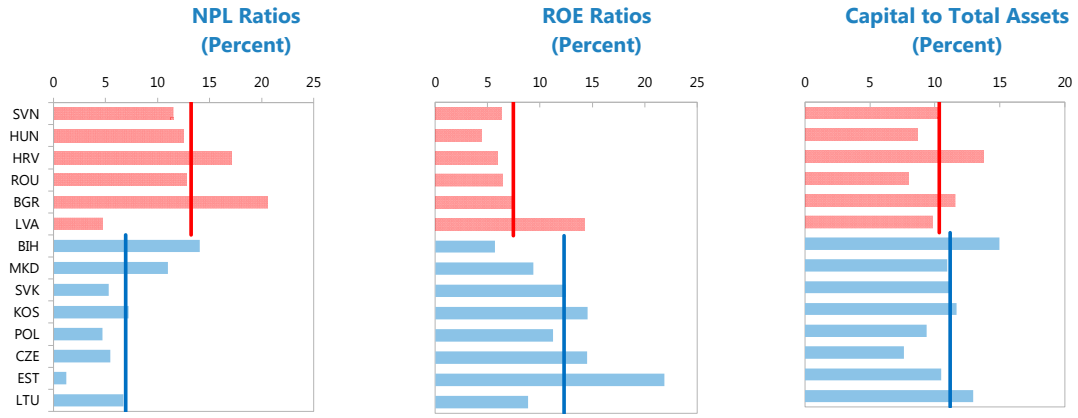
The data suggest that the divergence in credit recovery is explained by both supply and demand factors (see IMF (2014a, 2014b for analysis based on bank level data before 2014). Almost all CESEE economies have gone through a credit boom and bust cycle, despite differences in the pace of financial deepening (see IMF 2015d). Following the crisis, banks were laden with high non-performing loans (NPLs), which reduced earnings and tied up resources that could have been used for new loans. Lending was also initially affected by the changes in regulation and by the funding conditions of parent banks. Output contraction in the early stage of the crisis also lowered credit demand. Now that funding conditions have improved, and economic recovery has taken hold, the divergence in credit growth across CESEE countries is more closely associated with differences in the health of domestic banks (affecting credit supply) and private non-financial sector leverage (affecting credit demand).

On the supply side, the health of banks' balance sheets is an important determinant of differences in credit growth. The key indicator of asset quality is the level of NPLs, which are generally higher for the corporate sector than for the retail sector. Consistent with earlier bank-level analysis, the latest aggregate data suggest that credit growth tends to be stronger where NPLs are lower. In addition, bank profitability (for example, measured as return on equity) is another factor associated with credit growth. While the causality can go both ways, in countries where banks have been more profitable (for example, the Czech Republic and the Slovak Republic), credit growth has been stronger than in countries with weaker bank profitability. In contrast, bank leverage and capitalization seem less relevant (Figure 1.1.2).

On the demand side, credit to firms has also been affected by the level of corporate leverage. High corporate leverage may deter lending because of banks' concerns about credit quality, but also because of the weak demand from firms that are still suffering from debt overhang. Leverage ratios have declined in CESEE countries following the crisis (see IMF 2015d). However, they remain high in a few countries (Bulgaria, Croatia, Latvia, Slovenia, and Romania) where credit continues to contract. At the same time, in countries with lower corporate leverage—the Czech Republic, Poland, Slovakia, and Lithuania (Figure 1.1.3)—credit growth to businesses is expanding.

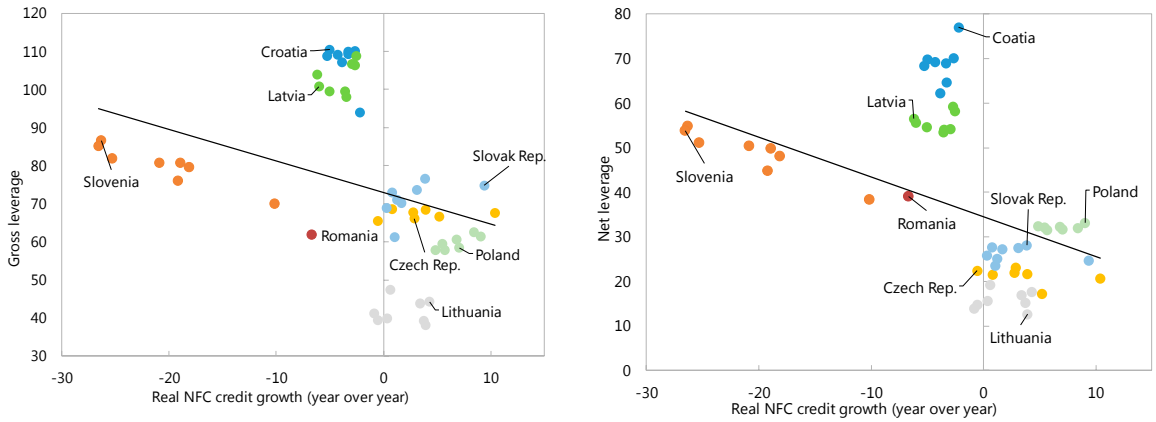
The relative importance of supply-versus-demand factors varies across countries. For example, while the strength of bank's balance sheets in Latvia is similar to that in Lithuania, corporate sector credit remains flat in Latvia likely due to a much higher level of corporate indebtedness. In Hungary, however, even though leverage levels of businesses are lower or comparable to those in countries where credit is expanding, the low profitability of banks, which has been affected by the bank tax and foreign exchange conversion introduced in recent years, seems to have limited the issuance of new loans.

Figure 1.1.2. CESEE EU: Bank Balance Sheet Indicators 2015:Q1



Sources: European Bank for Reconstruction and Development; IMF Financial Stability Indicators.
Note: Red bars denote countries in which growth of nominal credit to nonfinancial corporations (NFCs) is negative, blue bars denote countries in which growth of nominal credit to NFCs is positive (per Figure 1.1.1.). Lines show averages for the two groups. NPL ratios are based on gross NPLs. The NPL definitions may vary across countries.

Figure 1.1.3. Credit Growth and Corporate Leverage, 2014–15 (quarterly data)



Sources: European Bank for Reconstruction and Development; Haver Analytics; and IMF staff calculations.

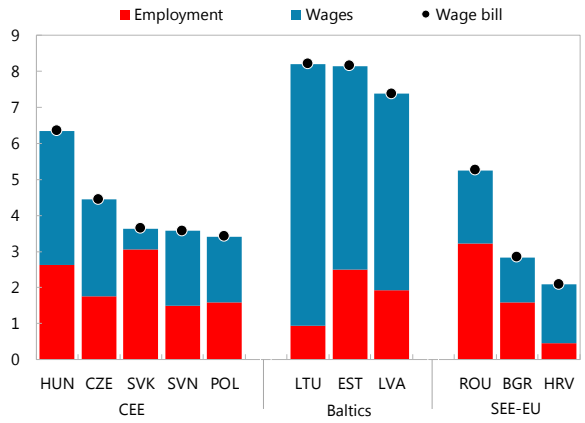
Looking ahead, a recent European Investment Bank (EIB) bank lending survey suggests that credit demand will continue to increase faster than credit supply. The June 2016 EIB survey suggests that corporate sector credit demand largely reflects demand for debt restructuring, working capital, and investment (EIB 2016). With both the regulatory environment generally more stable, and banks' capital conditions normalizing, credit supply should continue to improve gradually. Nevertheless, for countries that still have relatively high corporate leverage, meeting the credit demand for debt restructuring may be a challenge without measures to alleviate concerns about credit quality. Addressing both high NPLs and debt overhang requires a comprehensive approach, including enhanced prudential oversight, upgrading insolvency frameworks and developing distressed debt markets (IMF 2016c).

Note: This Box was prepared by Yan Sun.

Box 1.2. CESEE EU: A Closer Look at Corporate Profit Margins

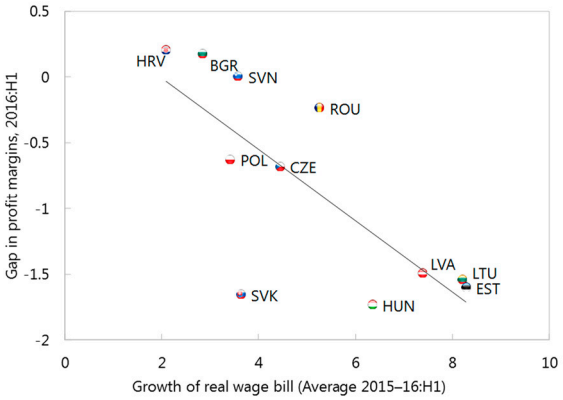
Real wages have grown strongly in many CESEE EU countries over last several quarters, putting pressure on corporate profit margins. On the back of a tight labor market in several economies, with unemployment reaching pre-crisis levels and a wave of minimum wage increases across the region (May 2016 *Regional Economic Issues*, Box 1.2), corporate wage bills have grown fast. While employment has been rising as well, wage growth has accounted for most of the labor cost increases in many CESEE EU countries since early 2015 (Figure 1.2.1). This trend has weighed on profit margins, which have fallen below their long-term averages in several countries (Figure 1.2.3). Corporate profit margins have declined the most in countries with faster labor cost growth (Figure 1.2.2).

Figure 1.2.1. CESEE EU: Corporate Wage Bill—Contribution of Wage and Employment Growth
(Percent, average growth 2015–16:H1, at constant prices)



Sources: Haver Analytics; and IMF staff calculations.
Note: Real wage bill = nominal compensation of employees devided by deflator of gross value added of nonfinacial private sector.

Figure 1.2.2. CESEE EU: Profit Margins and Wage Bill
(Percentage points)



Sources: Haver Analytics; and IMF staff calculations.
Note: Profit margin = 1—compensation of employees/gross value added (nonfinancial private sector). The gap is calculated as the deviation of profit margins from their 2002–16:H2 average.

How could the pressure on profit margins potentially play out? If labor market pressures persist, firms may not be able to allow a further decline of the already compressed profit margins, since this could erode their profits and negatively impact investment. The potential macroeconomic implications of firms' responses to shrinking profit margins could be as follows:

- *Passing wage costs to prices of final goods*. Under this scenario, inflation will increase and the recovery will likely continue, albeit at the price of deteriorating competitiveness. Given the relatively weak external competitiveness (exchange rate above long term average) for some countries however, firms may not be always able to pass wage increases to prices without losing market share and further loss of profits.

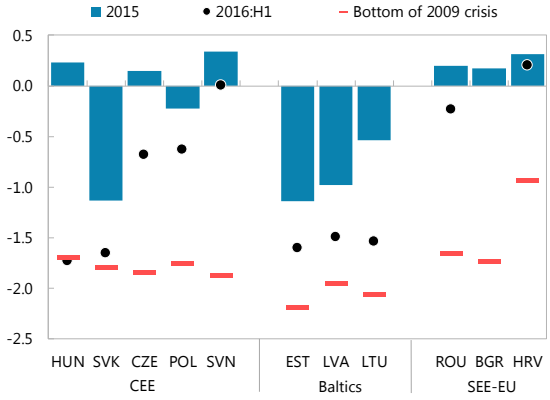
- *Labor productivity catching up*. If firms could increase the labor productivity, this would help rebuild corporate margins, while inflation would remain contained. However, lifting productivity on a large scale would likely require reforms to address structural bottlenecks and other institutional deficiencies (as discussed in the Spring 2016 REI). Such structural reforms typically take time to bear fruit.

- *Reducing corporate sector costs by cutting employment or wages.* If cost pressures cannot be passed on to final goods (for example, because of tight external competition), firms could be forced to contain the wage bill by reducing workforce or wages. As a result, growth could slow and inflation would remain low.

With profit margins near 2009 lows in some and falling appreciably in other CESEE EU countries, the current solid growth may be difficult to sustain. In Hungary, the Slovak Republic, and the Baltics, corporate margins are already close to the lows seen during the 2009 crisis, when businesses started to reduce labor costs through layoffs and wage cuts. And, in the Czech Republic, Poland, and Romania, margins have deteriorated appreciably since end-2015 (Figure 1.2.3). While there is uncertainty about how the decline in margins will play out, without a rebound in productivity, which takes time, it may be difficult to achieve durable growth. In countries where margins are at very low levels and firms cannot pass through increased labor costs to goods prices, for example, because of emerging signs of external competitiveness pressures in some cases (Figure 1.2.4), growth will likely moderate. In countries where corporate profit margins have deteriorated, but corporates could absorb higher labor costs or pass it onto prices of final goods (for example, CEE, Romania), solid growth may continue in the near term, but it may be hard to sustain over the medium term.

Figure 1.2.3. CESEE EU: Gap in Corporate Profit Margins

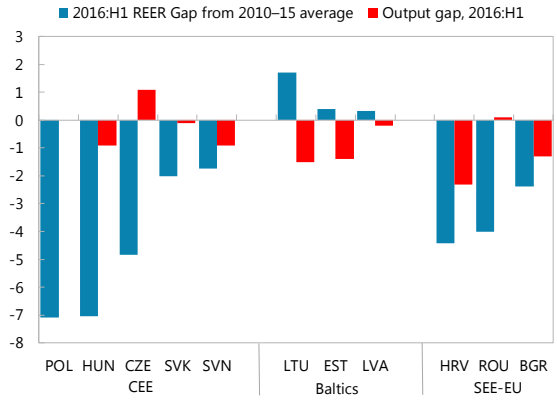
(Difference from long-term average, normalized by standard deviation; percentage points)



Sources: Haver Analytics; and IMF staff calculations.
Note: Profit margin = 1—compensation of employees/gross value added (nonfinancial private sector). The gap is calculated as the deviations of profit margins from their 2002–16:H2 average. The 2016:H1 data are not available for Bulgaria.

Figure 1.2.4. CESEE EU: REER and Output

(Percentage points)



Sources: Haver Analytics; and IMF staff calculations.
Note: The negative values of the REER gap denote undervaluation.

Note: This Box was prepared by Jiří Podpiera.

E. Policy Priorities

Given headwinds to growth as well as the need to rebuild fiscal space, a combination of supportive monetary policy and growth-friendly fiscal consolidation is the appropriate policy mix for many economies in the region. In Russia and the CIS, the challenge is to put in place solid medium-term fiscal consolidation plans, while proceeding gradually with consolidation in the near term to foster continued recovery of economic activity. For the entire region, structural reforms are critical to raise investment and productivity and secure durable growth.

Policies need to strike a balance between supporting near-term growth, and rebuilding fiscal buffers. This calls for a combination of easy monetary policy and removal of fiscal accommodation where relatively solid growth has been closing output gaps:

- ***Monetary policy***: given very low inflation and appreciable downside risks, premature tightening of monetary policy in countries with closing output gaps should be avoided. In light of persistently low inflation, if growth surprises on the downside, inflation targeting central banks with space should cut rates further. More generally, policy rates are close to the zero lower bound and risks related to inflation overshooting appear to be lower than risks related to undershooting, arguing for patience in raising rates.

- ***Fiscal policy***: given still large fiscal deficits and the state of the cyclical recovery, many economies in the region should consolidate in a growth-friendly manner, which would also help reduce still high external debt levels. This means further reforming entitlement systems, for example by raising statutory retirement ages and better targeting support to the vulnerable; reforming the civil services where wages are high relative to the private sector and public employment is large; and restructuring loss-making public enterprises, while eliminating subsidies.

- ***Balance sheet repair***: further progress in addressing NPLs is needed to revive credit and investment growth in the region (see Box 1.1). Several countries— Hungary, Kosovo, Romania, and Slovenia—have made notable progress in reducing NPLs (including by adequate provisioning and subsequent write-offs) and others (for example, Albania, Serbia) have put in place comprehensive action plans that have yet to bear fruit (see the new Vienna Initiative NPL website for details).

The two largest economies which are dealing with the impact of shocks need to further strengthen resilience and avoid premature and excessive monetary or fiscal tightening.

- In *Russia*, while helped by firming commodity prices, the economy is still in a recession and operating below potential, arguing for a cautious approach to removing fiscal accommodation. At the same time, to support the recovery and offset the less accommodative fiscal stance, monetary policy should be eased further but at a pace commensurate with the decline in underlying inflation and inflation expectations. For the

medium-term, policies need to address the challenge of persistently lower oil prices, which requires high-quality and durable fiscal adjustment.

- For *Turkey*, policies should aim at using the favorable external conditions to build buffers and address external imbalances, reducing inflation, and addressing long-lasting structural weaknesses. Automatic stabilizers should be allowed to work this year, and in the event of further slowdown in 2017. Over the medium term, additional tightening may be needed, if external imbalances persist and inflation remains high.

Amid diminished prospects for global growth, reforms to boost productivity and investment and reinvigorate convergence of the region gain in importance. Structural reforms are key to reinvigorate investment and productivity and secure durable growth in the CESEE region. As discussed in the Spring 2016 REI, to close appreciable productivity gaps with advanced Europe, reforms should focus on strengthening institutions (for example, legal systems, property rights, healthcare), increasing the affordability of financial services (especially for small but productive firms), and improving government efficiency. Given unfavorable demographics and emigration, active labor market policies aimed at increasing participation rates and reducing structural unemployment may be needed to boost labor supply. For Russia, structural reforms remain essential to leverage the more competitive exchange rate and raise productivity and investment, while diversifying the sources of economic growth. For Turkey, structural reforms should focus on increasing private saving rates and improving the business climate.

Enhancing government efficiency can contribute to higher potential growth in CESEE countries. The gains from more efficient government go beyond fiscal implications. Increasing government efficiency can help lift productivity and growth through both higher and better quality investment, while avoiding additional fiscal pressures. The efficiency of public investment and tax administration is the focus of the next chapter.

II. EFFECTIVE GOVERNMENT FOR STRONGER GROWTH

Lifting potential growth is a key challenge and policy priority for CESEE. After the crisis, potential growth in CESEE has halved on account of weaker investment and lower total factor productivity (TFP) growth, prompting countries in the region to search for a new growth model. The reasons behind weak investment and ways of boosting it, including by using public resources for infrastructure projects, have been the focus of policy debates and recent initiatives at the global, national, and EU level (for example, the Juncker Plan). The scope for public investment to boost growth in CESEE is significant because infrastructure gaps are still large relative to advanced Europe, while investment rates are generally low.[1] However, public investment can serve as a catalyst for growth only if it's done right. Recent studies found that public investment tends to lift short- and long-term output higher when public investment is efficient (see October 2014 *World Economic Outlook*).

At the same time, fiscal consolidation remains imperative for many CESEE countries. Most CESEE countries still face sizable adjustment needs to stabilize their debt levels or to return to full compliance with the EU fiscal rules.[2] The need to gradually rebuild fiscal buffers limits the fiscal space for public investment.

The need to lift potential growth and rebuild fiscal buffers puts a premium on improving public investment management and tax administration in CESEE. More efficient public investment would improve the quality and accessibility of infrastructure, which would enable private sector to allocate resources more efficiently and raise productivity. A more efficient tax administration would provide additional resources to pursue growth-friendly fiscal consolidation or may create fiscal space to step up public investment to boost growth further.

The efficiency of public investment and tax administration across CESEE countries is the focus of this chapter. In part as a response to calls for a more granular analysis of institutional reforms and "reform champions," this chapter aims to accomplish the following:

- Estimate efficiency gaps in public investment and tax administration in CESEE countries
- Assess which institutions need to be strengthened in order to increase efficiency of public investment management and tax administration
- Estimate potential (fiscal and economic) gains from closing efficiency gaps in public investment and tax administration
- Distill lessons from the experiences of best performers and "reform champions"
- Consider the political economy aspects of government effectiveness
- Draw policy implications and recommendations.

[1] See May 2016 REI for details.

[2] See November 2015 REI for details.

A. Making Public Investment More Efficient

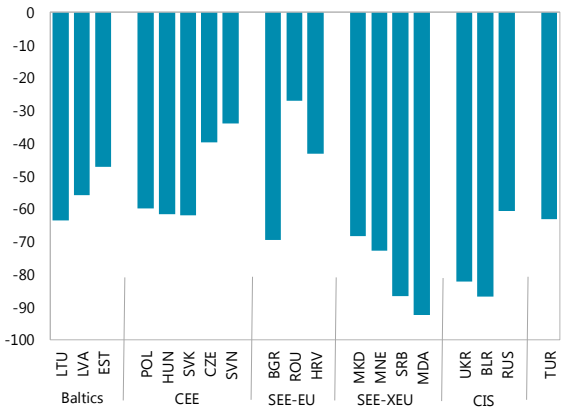
Most CESEE countries have upgraded their public investment management institutions and increased efficiency of public investment over the past decade. While there is scope for further improvement of project appraisal and management in most countries in the region, the non-EU CESEE countries would also benefit from increasing transparency of implementation, ensuring timely availability of funding, as well as improving company regulation and management of public-private partnerships (PPPs).

1. How Efficient is Public Investment in CESEE?

Efficient public investment can help boost productivity and growth. Public investment through delivery of key public services and infrastructure creation can boost returns to private investment and education, raise productivity, and support growth (October 2014 *World Economic Outlook*; Easterly and Rebelo 1990; Dhont and Heylen 2009). However, the economic impact of public investment depends on its efficiency. Poorly selected and implemented projects waste resources, while more efficient public investment leads to better economic outcomes (IMF 2015a; Gupta and others 2014). Given that most CESEE countries have large gaps in public capital stock and infrastructure relative to advanced Europe, there is significant scope for public investment —if carried out efficiently—to boost potential growth in the region (Figure 2.1).

Figure 2.1. Public Capital Stock Gaps, Per Capita

(Percent of EU-15 capital stock per capita, 2015)



Source: IMF Investment and Capital Stock Dataset (ICSD).
Note: CEE = Central and Eastern Europe; CIS = Commonwealth of Independent States; SEE-XEU = Southeastern European countries outside the European Union.

The efficiency of public investment is assessed by comparing the quality of infrastructure and access to public services with invested resources. The *public investment efficiency scores* presented here are constructed following the approach used in IMF (2015a) and in line with standard literature. Countries with the highest level of infrastructure coverage and quality (outputs) for a given level of public capital stock and income per capita (inputs) are assigned the efficiency score of 1 and form the *efficiency frontier*, while other countries are assigned a score of between 0 and 1, based on their proximity to the frontier (see Annex IV for details). The closer to the efficiency frontier, the higher the efficiency score and the smaller the efficiency gap.

On average, public investment efficiency in CESEE is in line with other emerging market economies (EMs), but somewhat lower than in advanced economies (Figure 2.2). CESEE countries have, on average, an efficiency gap of about 15 percent, which is similar to other EMs,

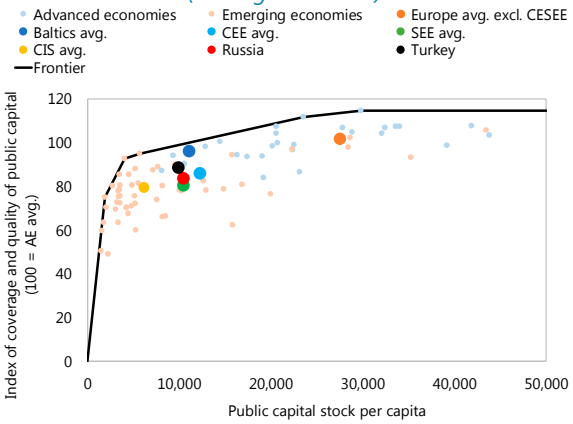
but somewhat worse than in other European countries that have an average efficiency gap of 10 percent. However, there are notable differences within the CESEE region. The Baltic countries are close to the efficiency frontier, while an average efficiency gap in SEE is double that of advanced Europe (20 percent).

Figure 2.2. Public Investment Efficiency in CESEE

CESEE economies generally have better infrastructure and higher public capital stocks than other EMs...

1. Index of Public Capital Coverage and Quality

(Average 2012–13)

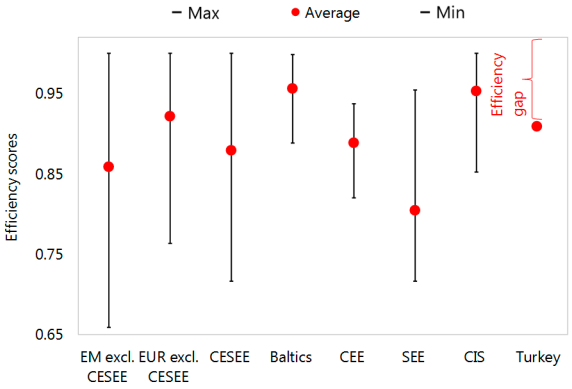


Efficiency of public investment in CESEE increased during 2006–13 more than in other regions.

...while efficiency of public investment is on average similar to that of other EMs with wide variation across different part of the CESEE region.

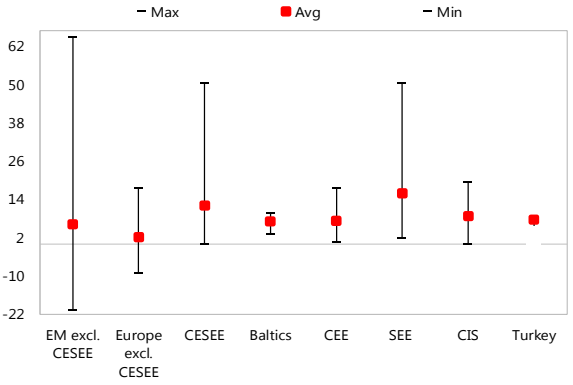
2. Public Investment Efficiency Score

(0-1; 1 = most efficient)

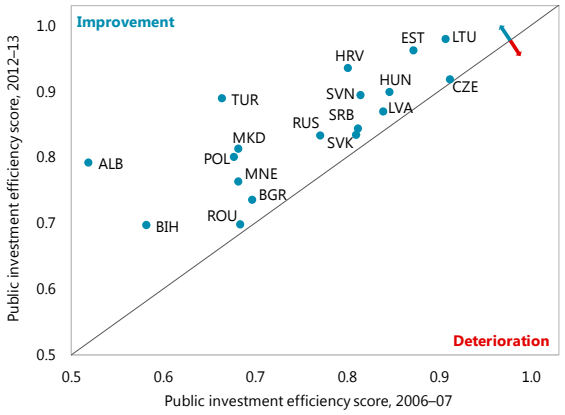


...with most CESEE countries experiencing improvement.

3. Change in Public Investment Efficiency Scores, 2012–13 compared with 2006–07 *(Percent change)*



4. CESEE Public Investment Efficiency Scores Over Time *(0–1; 1 = most efficient)*



Sources: World Economic Forum, World Development Indicators; and IMF staff calculations.

Note: The Public Capital Coverage and Quality index combines indicators of the quality of infrastructure (from World Economic Forum) with indicators of coverage of public capital stock (reflecting access to water, roads, electricity, health, and schools). Se Annex IV for further details. Efficient frontier is characterized by economies that have the highest value of this index for given levels of public capital stock and GDP per capita (not shown in the figure). The data sample covers 30 advanced and 80 emerging market economies, in 2012–13. AE = advanced economy; CEE = Central and Eastern Europe; CESEE = Central, Eastern, and Southeastern Europe; CIS = Commonwealth of Independent States; EM = emerging market economy; SEE = Southeastern Europe.

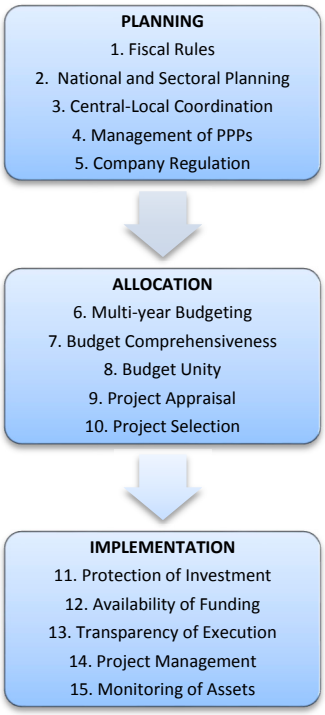
Most CESEE countries have improved the efficiency of their public investment since 2006. While the already strong performers—the Baltic states and the Czech Republic—have remained close to the efficiency frontier throughout 2006–13, a number of countries—such as Albania, Croatia, Macedonia, Poland, and Turkey—have made significant progress (Figure 2.2).[3]

2. Institutional Framework for Public Investment Management

Differences in public investment efficiency across countries can be linked to differences in their public investment management frameworks. Many factors could affect how public investment is translated into quality infrastructure. These factors could include the level of economic development, the quality of governance, and structural characteristics of the economy, as well as geography (which could affect transport connectivity and access). Nonetheless, there is growing evidence that institutions and processes that comprise public investment management (PIM) matter for public investment efficiency (Balassone and Franco 2000; Creel and others 2007; Dabla-Norris and others 2012).

Public Investment Management Assessment (PIMA) methodology developed by the IMF provides a scorecard for assessing the strength of PIM institutions and practices (IMF 2015a). PIMA evaluates and quantifies the strength of 15 key institutions in the following three stages of investment process (Figure 2.3):

Figure 2.3. The PIMA Framework



Source: IMF (2015a)

1. **Planning** sustainable levels of investment requires institutions that ensure public investment is fiscally sustainable and effectively coordinated across sectors, levels of government, and between public and private sectors. PIMA quantifies strength in five areas: (1) *fiscal rules*, (2) *national and sectoral plans*, (3) *central-local coordination*, (4) *management of public-private partnership*; and (5) *regulatory framework of infrastructure companies*.

2. **Allocating** investment to the right sectors and projects requires institutions that create a comprehensive, unified, and medium-term perspective to capital budgeting. It also depends upon objective and transparent criteria and procedures for appraising and selecting particular investment projects. In this regard, PIMA

[3] Alternative efficiency scores including those with purely physical or quality outputs have also been considered and may show somewhat different trends for individual countries, but are all highly correlated (see Annex IV for details). Another caveat is that such efficiency scores, which are meant to provide an indication of available room for improvement, are not to be taken in isolation and need to be interpreted using country-specific information.

evaluates the strength of (6) *multi-year budgeting*, (7) *budget comprehensiveness* (reflecting all investments in budget documentations regardless of the source of financing), (8) *budget unity* (proper accounting of immediate capital and future recurrent operating and maintenance costs), (9) *project appraisal* (extent of transparency, standardized approach, and reflection of risks), and (10) *project selection* (transparent, systemic vetting of projects to be included in the pipeline of approved projects).

3. **Implementing** projects on time and on budget. The timely and cost-effective implementation of public investment projects depends on institutions that ensure projects are fully funded, transparently tendered, and effectively managed throughout their implementation. In this regard, PIMA evaluates the existence and strength of: (11) *protection of investment* (ensuring sufficiency of funds and preventing diversion of budgeted funds to other uses), (12) *availability of funding* (timely cash flow from treasury), (13) *transparency of budget execution* (competitive and transparent tendering of major projects, independent audits), (14) *project management* (well-identified project manager and standardized guidelines for adjustments); and (15) *monitoring of public assets* (proper accounting, recording of assets and depreciation in financial accounts)

How does the scorecard approach work? For each of the 15 institutions described above, three key features are identified and are given numerical scores based on whether that feature is fully met, partly met, or not met (see Annex V for details). The scores for each of the 15 institutions are normalized between 0 and 10, with 10 representing "best practice." An aggregate PIMA score and sub-aggregate scores for *Planning*, *Allocation*, and *Implementation* are constructed by averaging scores for the corresponding institutions.[4]

The analysis of the link between PIM strength and efficiency of public investment is based on a large and diverse data set, which contains PIMA scores for 50 countries, comprising 20 CESEE countries, 11 advanced economies and 19 other emerging market economies.[5] This dataset builds on the PIMA database used in IMF (2015a), but it has broader coverage due to inclusion of additional CESEE countries. The PIMA scores for added CESEE countries are based on country authorities' and IMF staff assessments.

Countries with higher overall PIMA scores tend to have more efficient public investment. Figure 2.4 illustrates the correlations of the overall and institution-specific PIMA scores with efficiency of public spending in CESEE countries. The overall PIMA score and particularly the

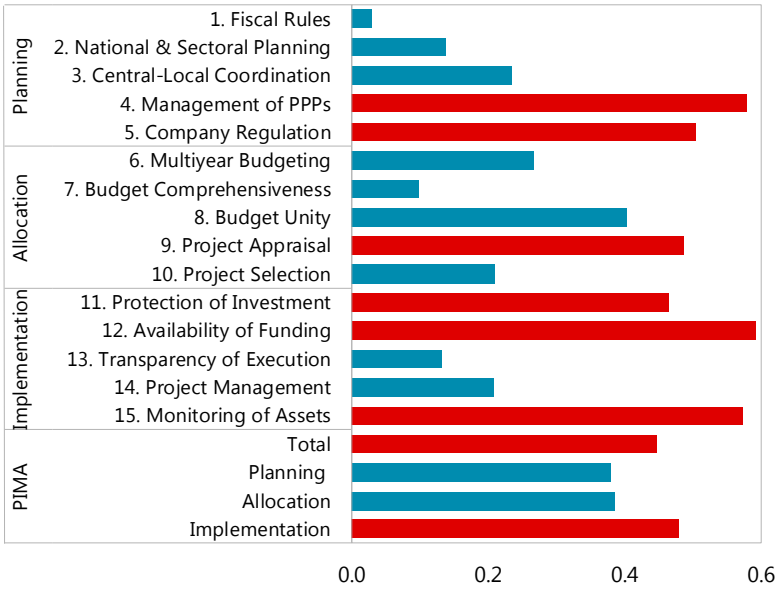
[4] PIMA framework is similar to several other diagnostic tools, such as the Public Investment Management Index (Dabla-Norris and others 2012) and the World Bank's "unified framework" (Rajaram and others 2014), but it is more comprehensive as it brings in the macro-fiscal dimension of the public investment process such as fiscal rules, central-local coordination, PPP management, and regulation of state-owned infrastructure companies.

[5] The sample covers a broad range of countries in terms of income, geography, and size. It includes 21 CESEE countries (all CESEE countries except Moldova), another 11 advanced economies (Australia, Canada, Finland, France, Germany, Italy, Japan, Korea, Spain, United Kingdom, and United States) and 19 emerging market economies (Algeria, Argentina, Brazil, Bolivia, Cameron, Chile, China, Ghana, India, Indonesia, Jordan, Mexico, Philippines, Qatar, Thailand, Saudi Arabia, Senegal, Sri Lanka, and South Africa). Low-income countries are not included in the analysis presented in this report.

implementation score appear to be most closely associated with public investment efficiency. Weaker statistical significance of correlations for some PIMA scores may be due to lower variability within the sample or could mean that some institutional weaknesses are less binding.

High cross-correlations among some of the institution-specific PIMA scores suggest strong complementarities, as also discussed in IMF (2015a). For example, project appraisal, selection, and project management are strongly correlated suggesting these institutions and capacities may need to be developed in tandem. Multiyear budgeting and protection of investment allocations are strongly correlated in CESEE highlighting the link between sound budgeting and orderly financing of projects. High cross-correlations suggest the need for a comprehensive approach to PIM reforms.

Figure 2.4. CESEE: Correlations of 15 PIMA Scores with Efficiency of Public Investment



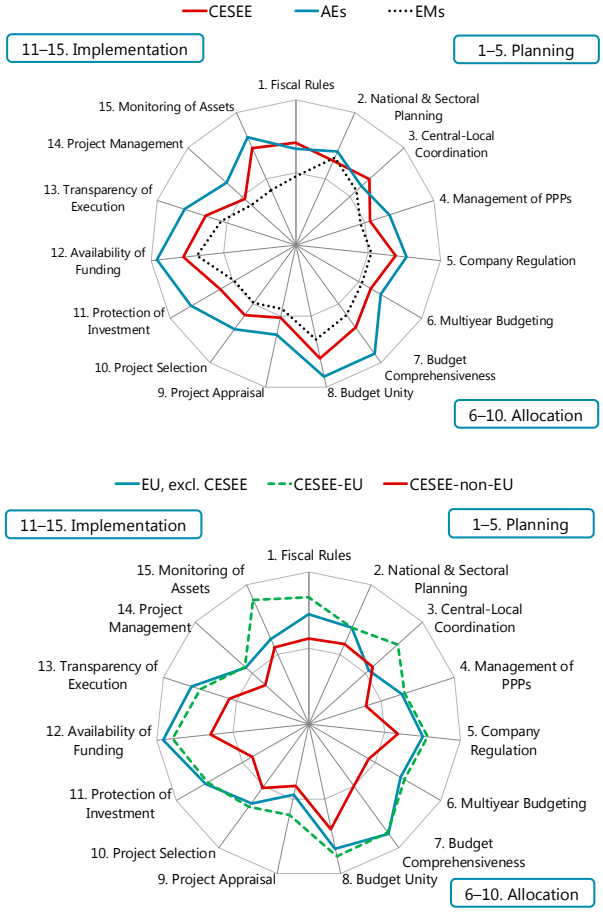
Sources: IMF staff estimates.
Note: Red bars indicate statistical significance. Sample includes only CESEE countries.
PIMA = Public Investment Management Assessment; PPPs = public-private partnerships

3. Public Investment Management Institutions in CESEE

Public investment management frameworks in CESEE are generally stronger than in other emerging market economies (Figure 2.5). CESEE countries are closest to advanced economies in terms of the quality of *planning* institutions, partly reflecting the adoption of fiscal rules in many CESEE countries, while *allocation* and *implementation* institutions in CESEE have more scope for improvement. There are also notable differences in the quality of PIM frameworks between CESEE EU and non-EU countries. The PIM institutions in CESEE EU members are on average as strong or in some areas (for example, central-local coordination and monitoring of assets) stronger than in the rest of the EU, while the PIM institutions in non-EU countries are generally weaker.

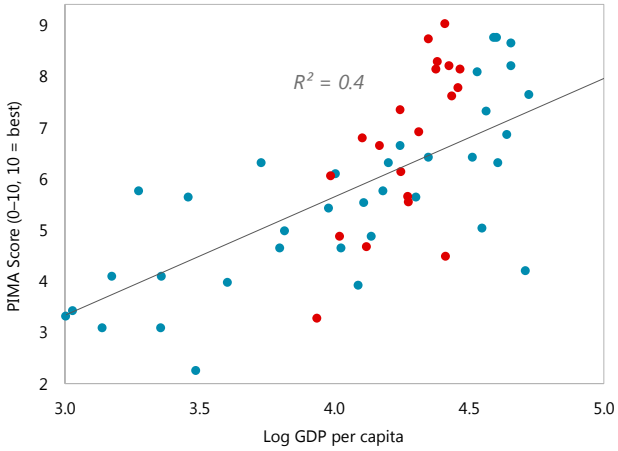
Figure 2.5. CESEE versus Peers: Strength of Public Investment Management Institutions

(score 0 to 10; 10 = best)



Source: IMF staff assesments.
Note: AEs = advanced economies; EMs = emerging market economies.

Figure 2.6. Strength of Public Investment Management Institutions and per Capita Income



Sources: World Development Indicators; and IMF staff estimates.
Note: Red dots denote CESEE countries.

And most CESEE countries have better public investment management institutions than one might expect given their per capita income levels. Admittedly, it is not straightforward to sort out the direction of causality or rule out other factors that could drive both income and PIM institutions. However, it is clear that several aspects of PIM, such as appraisals, project management, and monitoring of assets, are resource and skill-intensive activities; the ability to improve them would depend on not only the willingness to carry them out but also the availability of adequate resources. As Figure 2.6 illustrates (and consistent with IMF (2015a)) countries with higher per capita income levels tend to have better PIMA scores. If one thinks of the fitted line in Figure 2.6 as an expected PIMA score for a given level of per capita income, most CESEE countries appear to have stronger PIM institutions than what would be implied by their income levels. But those CESEE countries that are below the line could do much better given resources they have and are likely to benefit the most from a granular diagnostic and upgrading of their PIM institutions.

4. How to Improve Public Investment Management in CESEE?

The PIMA assessment is a good starting point for identifying areas for improvement. Figure 2.7 illustrates the strengths and weaknesses of each of 15 PIMA indicators in CESEE countries relative to best practice: red and green colors, respectively represent scores that fall in the bottom and top quartile of the distribution of each score among all advanced and emerging market economies in the sample, and yellow represents the middle two quartiles of the distribution.

Project appraisal **and** ***management*** **appear to be common weaknesses in the region.** In addition, for each CESEE sub-region, we highlight the following specific areas with the largest scope for improvement based on the PIMA scores, that is, where institutions are relatively weak compared to peers and in addition, are strongly linked with efficiency of public investment (as shown in Figure 2.4):

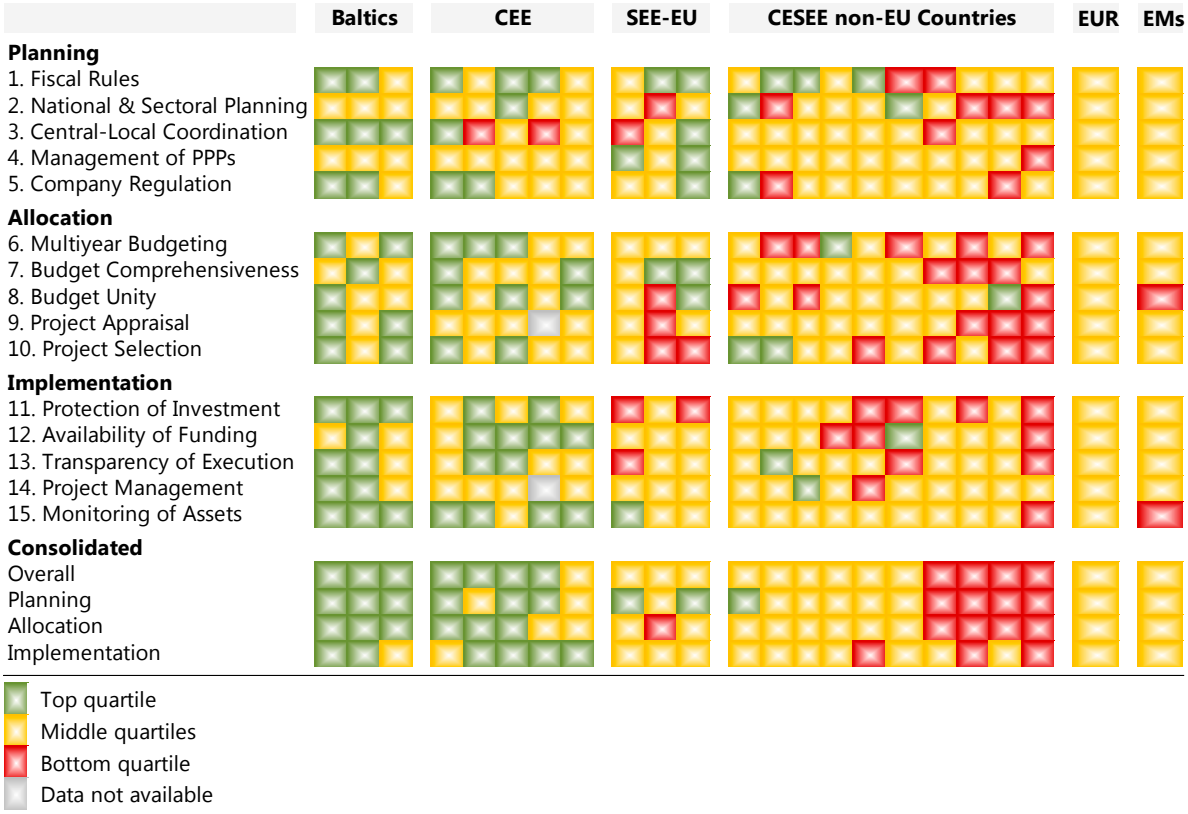
- ***Baltic counties*** have overall strong PIM institutions (see Box 2.1 for a case study of Lithuania), though *project appraisal* and *management of PPPs* can be further improved by (1) undertaking appraisals for all projects (not only for EU-funded projects); (2) publishing the cost-benefit analysis of major projects; (3) better reflection of fiscal risks from PPPs in budget documents.

- ***CEE countries*** also boast strong institutions compared with their peers and in some instances PIM institutions improved with the EU accession and as countries gained more experience with the use of the EU Funds (Box 2.1). *Project appraisal* and *project management* can be further improved by (1) undertaking and publishing appraisals for all major projects (not only EU-funded projects), (2) developing procedures for project adjustment throughout the implementation, and (3) conducting ex-post review/evaluation of projects.

- ***SEE EU countries*** have stronger planning processes than SEE-non-EU in light of having fiscal rules in line with EU guidelines (see Box 2.1). Despite some improvement after the EU accession, *project appraisal*, *selection*, and *transparency of execution* could be further improved by: (1) undertaking and publishing appraisals for all major projects (not only EU-funded projects), and (2) undertaking open and transparent procurement process and publishing results for major projects.

- ***Non-EU CESEE countries*** vary considerably in their level of development and institutions. All countries in this group would benefit from improving *project appraisal*, and *transparency of execution*. Some need further improvement in *availability of funding* and *protection of investment* by ensuring that allocated cash flows to approved projects are not appropriated for other uses. Better frameworks for *company regulation* and *management of PPPs* can also improve performance of state-owned enterprises (SOEs) in provision of infrastructure and minimize fiscal risks from PPPs.

Figure 2.7. Relative Strength of Public Investment Management Institutions in CESEE



Source: IMF staff estimates.

Note: Quartiles for each sub-indicator are calculated from a sample of about 50 advanced and emerging economies for which a Public Invesment Management Assessment (PIMA) score is available. Countries are sorted by the overall PIMA scores within each sub-group. Individual country names are not shown because of confidential nature of PIMA scores. CEE = Central and Eastern Europe; CESEE = Central, Eastern, and Southeastern Europe; SEE = Southeastern Europe; EUR = European Union (EU) excluding CESEE; EMs = emerging market economies excluding CESEE.

Box 2.1 takes a closer look at the experiences of CESEE countries that enjoyed marked increase in the efficiency of their public investment during 2006–13 (as shown in Figure 2.2). For several EU countries, the objective of increasing the absorption of EU Structural and Cohesion Funds provided strong incentives to improve PIM institutions, particularly in the areas of project appraisal and management. In Turkey, particular infrastructure deficiencies were targeted and addressed through national and sectoral development plans.

5. What Are the Payoffs from Improving Public Investment Management?

Improving public investment management would help increase public investment without creating additional fiscal pressures. Higher efficiency of public investment means that the same quality and access can be achieved with less fiscal resources. Analysis shows that closing efficiency gaps in CESEE countries can save between 0.1 and 1.5 percent of GDP a year (Figure 2.8, panel 2). Given that the infrastructure investment needs in CESEE remain quite large and the level of public investment is far from excessive[6] (Figure 2.8, panel 1), countries could use these fiscal savings to boost infrastructure investment.

More efficient public investment can be a catalyst for higher productivity and growth. Efficient public investment has been identified in the literature as a factor that amplifies the impact of public investment on growth (IMF 2015a, Gupta and others 2014). Indeed, countries that are able to provide higher quality infrastructure tend to have higher total factor productivity (Figure 2.8, panel 3). Using standard estimates for public investment multipliers (see October 2014 *World Economic Outlook*), one can estimate the potential growth impact from additional public investment. Given the mix of countries in the CESEE region, a permanent increase in public investment of about 1 percent of GDP could lead to roughly a 1 percent increase in the level of GDP over the medium term, though an exact number would depend on the degree of slack in the economy and efficiency of public investment.[7]

For the EU members and EU-pre-accession countries, improving public investment management can help make better use of the EU Structural and Cohesion Funds. Better public investment management can facilitate better selection of projects by national authorities, timely certification by the European Commission and orderly implementation of approved projects. Countries with better PIM institutions, particularly better appraisal capacities, have been indeed better able to absorb the EU Structural and Cohesion Funds over the 2007–13 "program period" (Figure 2.8, panel 4). In both the EU and EU pre-accession countries, the authorities need

[6] Spence (2008) argues that for fast-converging countries, public investment rate should be about 5 percent of GDP or higher. The analysis presented in the May 2016 REI suggests that the overall investment rates across CESEE are generally low, when compared with the pre-crisis period, as well as when compared with various optimal benchmarks.

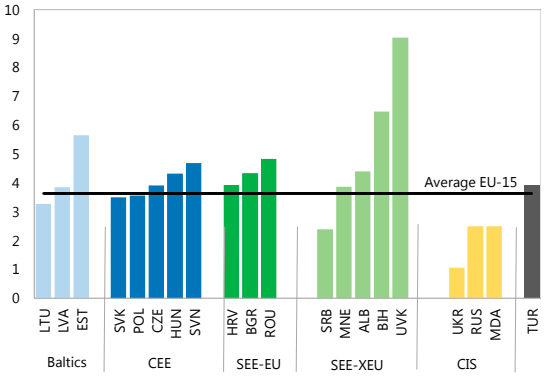
[7] The October 2014 WEO estimates the effect of a permanent increase of public investment by 1 percentage point of GDP to be between 2.2 to 2.8 percent increase in GDP in advanced economies with the magnitude depending on the efficiency of public spending and the degree of slack in the economy. The impact for emerging market and developing economies is found to be closer to one due to lower efficiency. In this report, given the mix of advanced and emerging economies in the region as well as closing output gaps in many CESEE countries, the impact on GDP is calculated using a multiplier of 1 for public investment.

to ensure that appraisal and selection procedures are upgraded for not only the EU-funded projects but all projects to avoid fragmentation of appraisal, selection, and prioritization of investment projects.

Figure 2.8. Economic Significance of Improving Public Investment Management Institutions

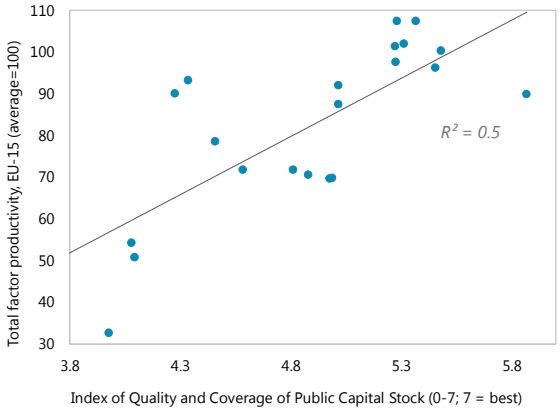
Public investment levels are far from excessive in CESEE...

1. Public Investment to GDP Ratio
(Percent, 2012–15)



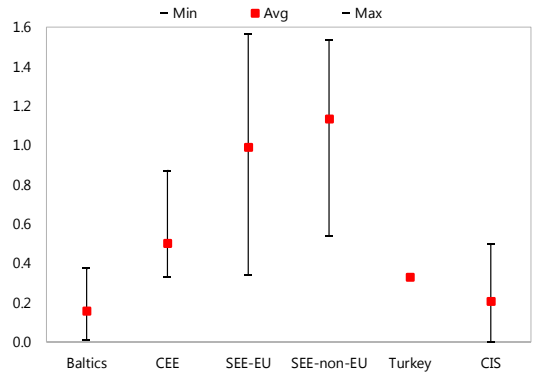
Higher investment efficiency could bring about higher productivity in total economy.

3. Public Investment Efficiency and Productivity



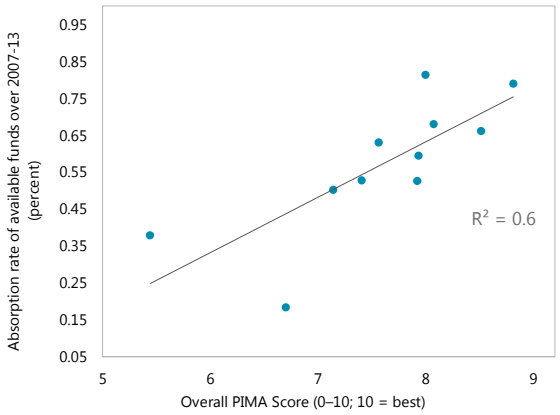
...and can be boosted by savings from improving PIM institutions and raising public investment efficiency.

2. Additional Public Investment Possible from Efficiency Gains *(Percent of GDP)*



Better PIM also help in higher absorption of EU funds, further increasing investment capacity and growth.

4. CESEE EU Countries: PIMAs Score and Absorption of EU Structural and Cohesion Funds



Sources: European Commission, IMF Investment and Capital Stock Dataset, and IMF staff estimates.
Note: Efficiency gains represent savings that can be made by moving to the efficiency frontier of relevant income level, whereby lower amounts of public capital generates the same quality and access of infrastructure. CEE = Central and Eastern Europe; CIS = Commonwealth of Independent States; SEE-XEU = Southeastern European countries outside the European Union.

Box 2.1. Improving Public Investment Management: Selected Country Experiences 1/

Croatia, Lithuania, Poland, and Turkey provide good examples of countries that have achieved public investment efficiency gains as a result of improving PIM institutions. These countries' experiences suggest that improving capacity in project appraisal, selection, and management, as well as identifying infrastructure gaps through better national and sectoral planning can lead to more efficient outcomes.

Croatia

Outcomes: The efficiency of infrastructure investment improved notably during 2006–13, narrowing the efficiency gap from 20 to 10 percent (Figure 2.2, panel 4), as Croatia undertook efforts to upgrade airports, roads, and maritime transport infrastructure, partly aided by the EU pre-accession funds.

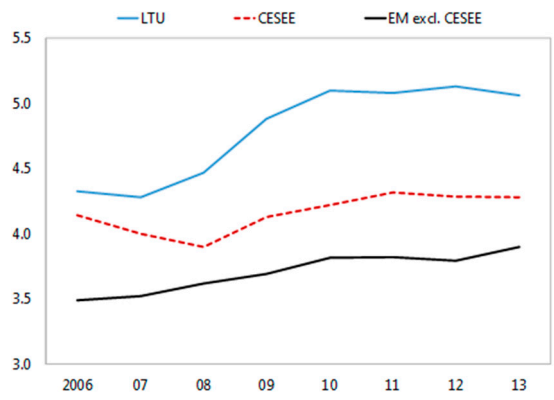
Institutional changes: Several aspects of public investment management framework were upgraded during this period. *Budget unity and comprehensiveness* was enhanced by passing the Fiscal Responsibility Act (2010), which helped better coordinate national strategic priorities with plans being prepared for the EU financing. *Project selection and appraisal* was improved as Croatia introduced a one-stop-shop model to streamline the multistage process of assessment and adoption of strategic projects by state-owned companies or the PPP projects. However, there is still scope for improvement on the timeliness of project approval and the harmonization of the EU and national criteria.

Reform drivers: Public financial management reforms have been key priorities under the EU accession program, these in turn have helped to improve absorption of EU Funds.

Lithuania

Outcomes: Efficiency of public spending and quality of institutions have been generally high in Lithuania even prior to its entry into the EU. Nonetheless since joining the EU in 2004, it has taken further steps to improve planning and implementation of public investment projects, particularly those financed by the EU Funds.

Figure 2.1.1. Lithuania: Index of Quality of Public Infrastructure *(0–7; 7 = best)*



Sources: World Economic Forum, and IMF staff calculations.

Institutional changes: After joining the EU, it was realized that the existing mechanisms for PIM were not sufficient and there was a need to base investments on national strategic documents and operational plans which were missing at the time. To deal with an expanding pool of potential project applications to use the EU funds, a competition-based project selection procedure was introduced which meant that public entities and public service providers had to apply for financing on an equal basis and to follow the well-defined criteria and procedures. Despite increased administration costs, this had a positive impact on *transparency* and strengthened administrative capacities for *project appraisal and selection*.

Reform drivers: EU accession and the goal of reaping the full benefits from the EU Funds appear to have acted as the key catalysts for latest phase of upgrading PIM institutions in Lithuania.

Poland

Outcomes: The efficiency of public investment increased during 2006–13, along with the access, quality, and quantity of public capital stock, narrowing the efficiency gap from 30 to 20 percent.

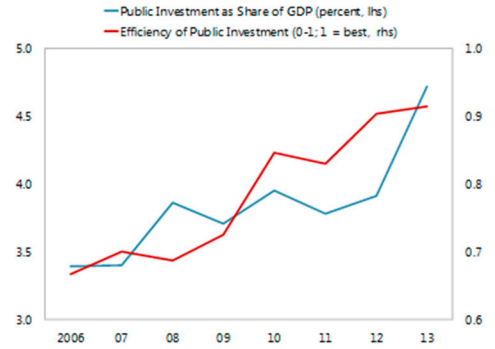
Institutional changes: Poland has implemented a range of reforms to enhance the capacity, absorption and impact of public investment. *Central-local coordination* of investment has been strengthened through introduction of territorial contractual agreements to ensure coordination of initiatives by national and sub-national bodies across all policy instruments that have a territorial dimension. A forum has been introduced for coordination of strategic planning for the EU-funded investments as well. *Project Management and Transparency of Execution* have improved as part of efforts to better absorb the EU Funds. Technical assistance funds have been used to train regions and beneficiaries of project funds in performance monitoring. An Informational System for Monitoring and Controlling Structural and Cohesion Funds was put in place in 2007 to monitor the financial and physical progress of projects co-financed by EU Funds throughout their implementation, which was meant to facilitate the certification process for release of the EU Funds. Each such project was also assigned a monitoring committee that carried out systematic progress assessments over the life of the project.

Reform drivers: Overall, EU membership and aiming to achieve a higher absorption of the EU Funds have spearheaded improvements in the PIM institutions in Poland.

Turkey

Outcomes: Efficiency of public investment improved markedly during 2006–13, with efficiency gap dropping from about 30 percent to 10 percent. The improvements largely reflected increase in access as well as better quality of infrastructure. Public investment picked up during this period as well, following the authorities' program of macroeconomic stabilization and fiscal consolidation in the aftermath of Turkey's 2001 banking crisis.

Figure 2.1.2. Turkey: Public Investment Over Time



Sources: World Economic Outlook, and IMF staff calculations.
Note: lhs = left scale; rhs = right scale.

Institutional changes: Promoting regional development has been one of the key pillars of the ninth national development plan (2007–13). During these years, *national and sectoral planning* institutions were strengthened through a variety of mechanisms supporting sub-national entities to undertake an increasingly larger share of public investment. Each region has a regional development agency, whose establishment was facilitated by legislation in 2006. These agencies prepare regional plans for all regions under regional planning guidelines and within the broader national development framework. National level institutions such as the Supreme Regional Development Council and Ministry of Development ensure regional and sectoral coordination among different levels of government. National sectoral representatives are appointed to regional levels and forums that bring sub-nationals together. There are also mechanisms and incentives to encourage cooperation for public investment across sub-national authorities.

Reform drivers: Strengthening regional development has enjoyed both domestic political support as well as being encouraged by prospect of EU-accession in mid-2000s.

1/ This Box was prepared by Faezeh Raei and Dilyana Dimova.

B. Improving Tax Administration Efficiency

Although many CESEE countries have core elements of modern tax administrations, tax compliance gaps are still large. Reform efforts should focus on bringing institutional arrangements in line with best practices (in countries where tax collection is not unified in a single body or where a functional structure is lacking), upgrading information technology systems, strengthening the risk management approach to compliance and improving operational performance (especially in countries where tax debt is high). Closing tax efficiency gaps could result in sizeable revenue gains, as well as broader benefits for the economy.

1. How Efficient Is Tax Collection in CESEE?

An efficient tax system[8] can be characterized by high tax collection efficiency for a given cost of collection. The standard measures of tax collection efficiency compare the revenue actually raised (for a given tax) with that which could be raised if it were perfectly enforced and levied at a uniform rate on the full tax base. In this chapter, "*tax efficiency*" is measured using tax collection efficiency indicators for the main taxes, such as the widely used C-efficiency indicator for the value-added tax (VAT),[9] and similar indicators for the corporate income tax (CIT), and the personal income tax (PIT) (see Annex VI for details). Another aspect of the tax system is how much revenue can be raised per unit of resources spent on tax collection ("*cost of collection*"). In the discussion that follows, both aspects are considered.

The relationship between tax efficiency and the cost of collection differs significantly across countries (Figure 2.9). In some countries (Bulgaria) high tax efficiency is achieved at relatively high cost of collection, in others with lower collection cost (Estonia or Lithuania).[10] This is also the case for advanced European economies. Some comparisons follow:

- *Tax efficiency*. The VAT C-efficiency indicator among CESEE countries is on average similar to that of advanced Europe, and the highest among SEE countries, where VAT revenue is by far the most important source of revenue—about 60 percent of total tax revenue. However, CESEE countries seem to lag advanced Europe in terms of efficiency of direct taxes.

- *Cost of collection*. The cost of tax administrations in CESEE is estimated at 0.3 percent of GDP (or at about 1 percent of tax revenue), only slightly higher than in Western Europe. Estonia, Lithuania, Russia, and Turkey have the lowest cost of collection in CESEE (0.1 percent of GDP).

[8] Efficiency here is not analyzed from a pure excess welfare burden of taxation perspective (Auerbach 1985) but rather from the revenue collection perspective, that is maximizing revenue collected at the lowest cost possible to the administration.

[9] Widely used for evaluating value-added tax (VAT) systems, the C-efficiency indicator compares VAT's actual collection with that using the standard rate on all consumption (Ebrill and other, 2001).

[10] This indicator does not capture the implied cost of compliance to taxpayers. Importantly, a low cost of collection should not be the result of unfunded tax administrations, eventually leading to lower tax compliance. Evidence from EU countries, however, suggests that VAT compliance is higher in countries where cost of tax collection is lower (Annex VI).

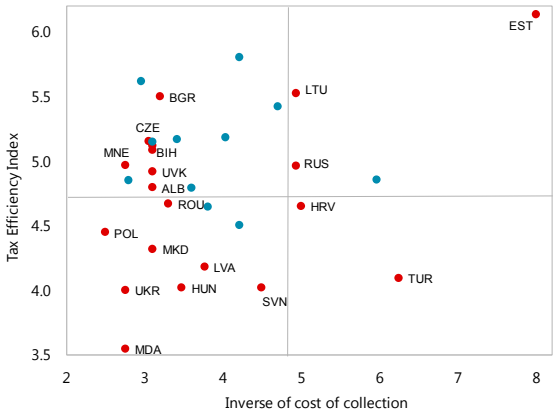
Tax efficiency improved in most CESEE countries since 2005, but progress has varied across countries (Figure 2.9). The efficiency of tax systems has improved substantially in Bulgaria, Estonia, and Russia, but to a lesser extent in other CESEE countries. Efficiency improvements in some cases have been driven by reforms in the context of the EU accession process, as in the cases of Estonia and Bulgaria (see Box 2.2 for details). There is also some evidence that IMF advice and technical assistance have helped strengthen revenue performance in some countries, including in CESEE (Crivelli and Gupta 2016).

Figure 2.9. Efficiency of Tax Systems in CESEE

The relationship between tax efficiency and cost of collection varies significantly across countries.

1. Tax Efficiency Index versus Cost of Collection

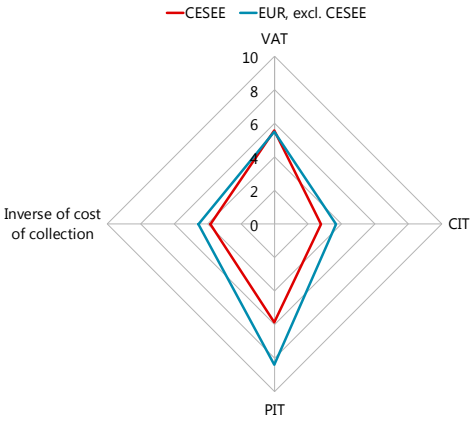
(10 = most efficient)



CESEE are close to advanced Europe on VAT efficiency, but lag behind on efficiency of direct taxes.

2. Tax Efficiency Components and Cost of Collection

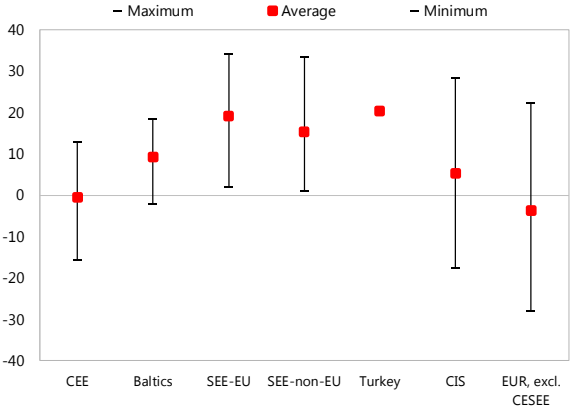
(10 = most efficient)



Tax efficiency in CESEE increased since 2005...

3. Change in Tax Efficiency Index, 2013-05

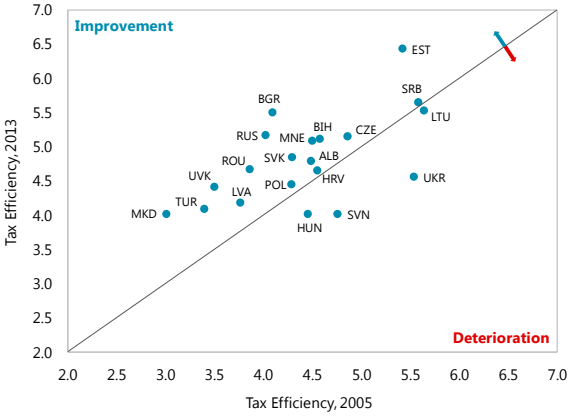
(Percent change)



...with most CESEE countries experiencing improvement.

4. CESEE: Tax Efficiency Index over Time

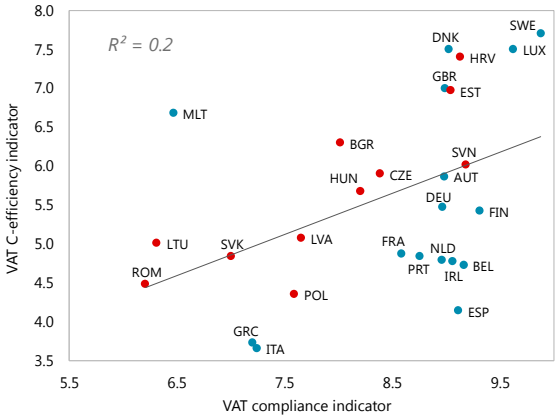
(10 = most efficient)



Sources: Organisation for Economic Co-operation and Development; and IMF staff calculations.
Note: Inverse cost of collection is (net revenues/cost of tax administration) x 100. CIT = corporate income tax; PIT = personal income tax; VAT = value-added tax.

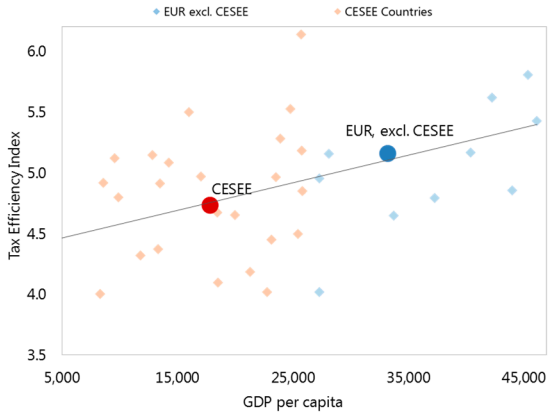
While tax efficiency is a complex concept that reflects both tax policy design and tax compliance, it seems to be largely reflecting compliance in CESEE and policy gaps in advanced Europe. A tax efficiency gap—a gap between actual receipts and those under some perfectly enforced benchmark tax system[11]—could arise either because of the *policy gap*, which reflects deviations of current tax rules from the benchmark—as a result of tax exemptions and reduced tax rates—or the so-called *compliance gap*, which refers to imperfect compliance under the current tax system (Keen 2013). Because many tax systems in CESEE were designed from scratch based on international best practices during the transition from socialism in the early 1990s, policy gaps may be smaller in CESEE than in other European countries with "older" tax systems. This finding is particularly true for the VAT, which replaced more distortionary sales and trade taxes. Figure 2.10 shows the relationship between the VAT C-efficiency indicator used in this chapter and a VAT compliance indicator prepared by the European Commission for all EU countries.[12] While among CESEE countries (red dots) there is a strong link between the two indicators, this is not the case for advanced Europe. This is consistent with previous studies that found that tax efficiency gaps in advanced European countries are largely due to policy gaps rather than low tax compliance. In contrast, for emerging economies, compliance gaps are the primary concern (see IMF 2010), and are

Figure 2.10. EU: VAT Compliance and VAT C-efficiency Indicators
(10 = most efficient)



Sources: CASE (2016); and IMF staff estimates.
Note: VAT = value-added tax.

Figure 2.11. Tax Efficiency Index vs. GDP per capita
(10 = most efficient)



Sources: Organisation for Economic Co-operation and Development; and IMF staff calculations.

[11] This refers to a tax system without any policy or compliance gaps, that is free from exemptions, loopholes, and excessive rate differentiation, but also free of evasion.

[12] While compliance gaps' estimates for developing countries are rare, the EC provides regular estimates of the VAT compliance gap for the EU members (CASE 2016). The VAT compliance indicator is computed as [1-(VAT Compliance GAP/100)] x 10.

indeed large in many CESEE countries—VAT compliance gaps in the CESEE EU countries are on average about 60 percent higher than in advanced Europe.

Despite notably lower income levels, the overall tax efficiency in CESEE is close to advanced European standards, even though compliance gaps can be large in some cases. This relatively high tax efficiency level could be owing to design features that reflect best international practices and limited policy gaps, as discussed previously.[13] For some countries, tax administration reforms took place in the context of the EU accession. However, there are notable differences within the region. Estonia stands out as having a very high tax efficiency not only in absolute terms but also relative to what might be expected given its per capita income level (it is well above the fitted line in Figure 2.11). In SEE, Bosnia and Herzegovina, Bulgaria, and Serbia score well relative to their expected levels of tax efficiency for their income levels but again here, their relatively high tax efficiency could be reflecting policy design and hiding large compliance gaps (Figure 2.10). By contrast, tax efficiency is rather low among CIS countries, except Russia, and could also be higher in CEE countries, given their per capita income levels.

2. Tax Administration Reform and Tax Efficiency

The key features of an efficient tax administration are well established. A modern tax administration needs to be able to accurately identify compliance risks, and to effectively allocate limited resources and actions (administrative, enforcement) to address them. To achieve this, revenue bodies need to pay proper attention to basic tax administration functions, they need effective prioritization in addressing multiple compliance risks, and a strong commitment to and capacity for data collection and analysis. Efficient tax administration also requires the right institutional and legal approach enabling these capabilities to be developed (IMF 2015b).

The choice of the methodology to assess tax administration efficiency in CESEE is determined by available information. The Tax Administration Diagnostic Assessment Tool[14] (TADAT), developed by IMF's Fiscal Affairs Department is a comprehensive standardized framework for evaluating the performance of tax administration systems, which provides an evidence-based and scored assessment of performance in all key areas. However, TADAT's coverage of CESEE region is limited and data are confidential. Therefore, the assessment in this chapter is based on indicators[15] compiled by the OECD reflecting key organizational and operational aspects of revenue administrations in different countries relative to "best practices" (see Annex VII for details). These indicators can be grouped into six key areas (Figure 2.12):[16]

[13] In some countries, the relative high tax efficiency could also be related to the adoption of a flat PIT rate.

[14] Detailed information on this initiative can be found online at: http://www.tadat.org/. In addition, the IMF's Fiscal Affairs Department Revenue Administration Fiscal Information Tool (RA-FIT) is a new initiative to gather and analyze core tax and customs administration data annually, and make these data available to member countries (IMF 2015b).

[15] An additional limitation to our approach is that these indicators are largely input-based as opposed to result-based, which limits the link to tax administration performance.

[16] The areas used here follow closely OECD (2015).

1. ***Institutional Arrangements*—**A *unified body* is responsible for the administration of both direct and indirect taxes, as well as the collection of social security contributions. It has sufficient *autonomy*, in particular concerning aspects of organization and planning, budget management, performance measurement, and information technology (IT)/human resource management (Barrand and others 2004; Kidd and Crandall 2010)

2. ***Organizational Structure*—**The revenue body possesses a *functional structure*, operating a dedicated processing center—for tax returns and payments—with dedicated divisions for the investigation of serious fraud/evasion cases, and in-house debt collection functions. It also includes a dedicated, well-staffed unit to identify and manage key compliance risks and priorities of *large taxpayers* (OECD 2009; Kidd 2010).

3. ***Strategic Management*—**Modern revenue administrations adopt a *risk management approach* for timely identification and mitigation of compliance risks. An integral part of this approach is a monitoring framework that aims to identify and prioritize *compliance risk areas*—such as, registration, filing on time, unpaid tax debts, profit shifting, VAT fraud (IMF 2015c; OECD 2014a).

4. ***Human Resources*—**To operate effectively, revenue administrations require an adequate number of *well-trained* staff. Skills and capability needs are formally assessed, recruitment and training programs are in place, and a performance-based remuneration scheme is established to improve staff engagement and motivation, thereby contributing to *staff retention*. Also the share of staff allocated to operational functions (as opposed to support functions) such as *verification* (including audit) *and tax debt collection* is key in achieving higher tax compliance (EC 2007).

Figure 2.12. Operational and Organizational Indicators of Tax Administration

Source: OECD (2015).
Note: CIT = corporate income tax; PIT = personal income tax; VAT = value-added tax.

5. ***Operational Performance*—**Tax verification represents a major investment for tax administrations. As such, the contribution of the value of completed verification actions to revenue collection is key in assessing the effectiveness of these operations. Also given its significant contribution to tax revenues and the likely high volume of operations, VAT administration is crucial. Having systematic processes in place for granting timely *VAT refunds* to compliant taxpayers, as well as robust checks for detection of fraudulent

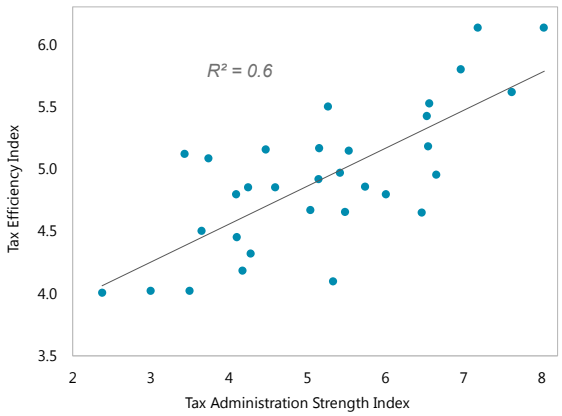
registrations and refund claims are critical. Finally, *low tax debt* levels can be associated with factors related to better operational performance, such as, extensive enforcement powers, use of tax withholding, well-staffed debt collection units, and investment in information technology (Harrison and Krelove 2005; OECD 2014b).

6. ***IT/Online Services—***The use of technology facilitates compliance with tax laws and provides higher service standards to taxpayers. The replacement of routine manual work with automated systems has helped making the processes faster and more efficient. One way of assessing the growing number of online services now being provided by revenue bodies, is by focusing on *electronic filing* which usually covers the VAT first, and is then extended to other taxes once IT capabilities are further developed (OECD 2013, 2014c).

To arrive at a quantifiable framework, the indicators reflecting operational and organizational aspects of tax administration (described above) were compiled for all CESEE and advanced European economies and scores were assigned to each of these indicators. The individual scores were subsequently aggregated into an overall index capturing the overall strength of tax administration—the *tax administration strength index* (see Annex VII for details).

Does better tax administration deliver higher tax efficiency? Figure 2.13 shows that there is indeed a strong association between the aggregate *tax administration strength index* and tax efficiency (shown in Figure 2.9) for the sample of CESEE and advanced European economies.[17] Furthermore, tax efficiency is also highly correlated with most of the indicators reflecting institutional strength of specific core areas of tax administration. In particular, correlations are very high for the areas of unified body, strategic risk management, and the extent and quality of online services. The high correlations seem to suggest that having a unified semi-autonomous body with a strategic risk management approach to compliance is key to ensuring higher tax efficiency. Also important is addressing tax debt in a comprehensive manner, with well-staffed debt collection units. Correlations between electronic filing and tax efficiency are also high, suggesting that investment in technology likely plays an important role in supporting tax compliance and helping to make processes more cost-effective.

Figure 2.13. Tax Administration Strength and Tax Efficiency



Sources: Organisation for Economic Co-operation and Development; and IMF staff calculations.

[17] There is also a positive association between VAT compliance and the tax administration strength index in the EU (Annex VI).

Given complementarities between different core areas of tax administration, improvement in its quality may require a comprehensive approach. Cross-correlations between some of the indicators provide useful insights. For example, a strong commitment to and capacity for data analysis becomes essential both for effectively administering a larger number of taxes, and to support effective prioritization in addressing multiple compliance risks. Similarly, functional structure and the share of staff allocated to verification and debt collection are highly correlated. Possessing specialized units for large taxpayers, or debt collection can only improve efficiency if qualified staff is assigned to these functions.

3. How to Improve Efficiency of Tax Administration in CESEE?

The core operational and organizational elements of modern tax administrations are in place in CESEE, though some weaknesses remain. Aggregate scores for the main areas of tax administration in CESEE are relatively high (Figure 2.14). There are areas, however, where CESEE countries, on average, lag behind, particularly on investment in information technology and provision of online services. This reflects a more limited automation of processes, which results in a larger share of staff allocated to support functions (as opposed to more productive verification and debt collection functions). There is also some room to improve organizational structure and operational performance. There are also a number of specific weaknesses identified in IMF technical assistance programs that have supported reform modernization efforts in SEE countries.

Figure 2.14. Tax Administration Core Strength Areas
(10 = most efficient)

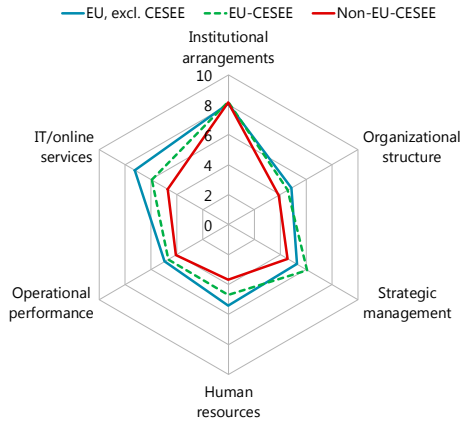
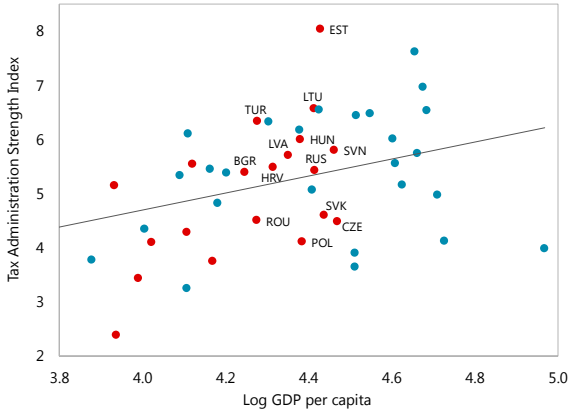


Figure 2.15. Tax Administration Strength and GDP per capita



Sources: IMF *World Economic Outlook*; OECD; and IMF staff calculations.
Note: Individual CESEE country names are shown only for countries reporting to the OECD (2015) database. The names of countries for which the underlying data are not publicly available are not shown.

And in some countries in the region, the areas of tax administration assessed here score particularly well when taking into account the relative level of development. Even though the overall score of tax administration strength is low among less-developed countries, some countries such as Bulgaria and Kosovo score relatively well in terms of expected quality of their tax administrations (above the fitted line in Figure 2.15). Also in many of the more advanced

CESEE economies, the quality of tax administration is above the expected level and comparable to advanced Europe. There are some exceptions: given their per capita income levels tax administration quality could be better in some CEE countries.

While there is scope for improvement in most countries, priorities vary. Figure 2.16 illustrates the strengths and weaknesses of each indicator in CESEE countries: red and green colors, respectively, represent scores that fall in the bottom and top quartile of the distribution of each score among all advanced and emerging economies in the sample, and yellow represents the middle two quartiles of the distribution. Except in the Baltics, many countries in the region face significant challenges. In general, most countries face challenges with staff retention, and due to relatively low automation of processes, a relatively high share of staff is allocated to support functions. But there are many country-specific challenges as well:

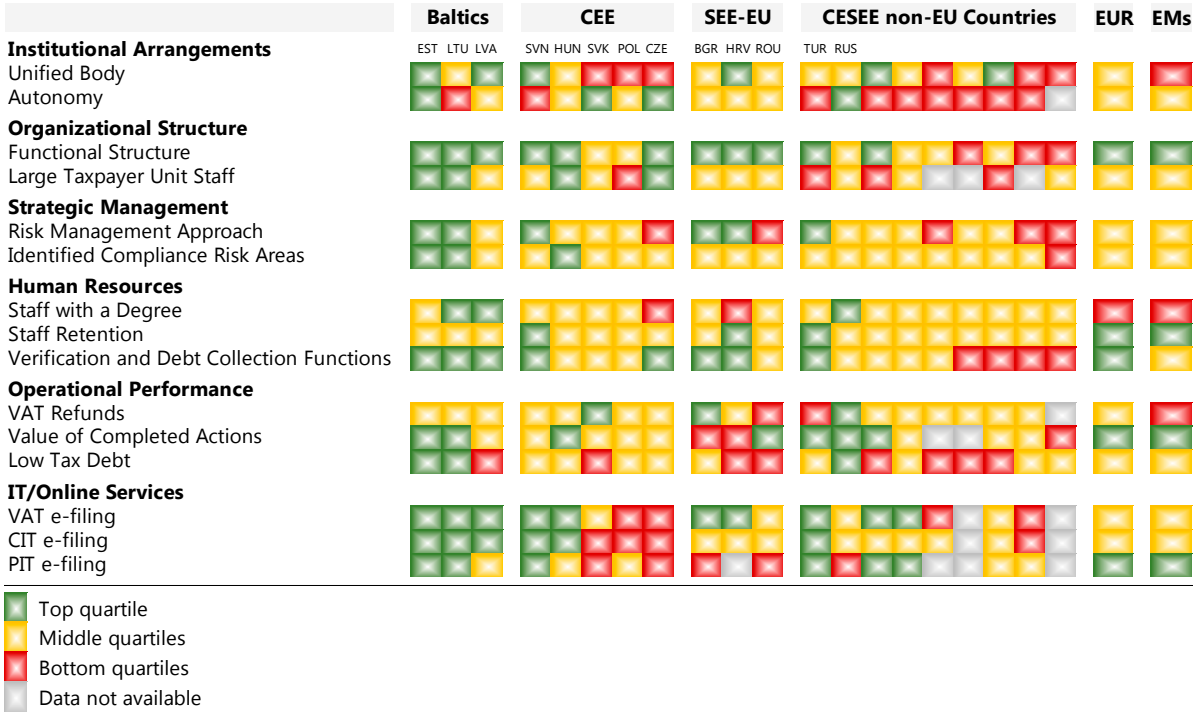
- ***Baltic countries—***While tax administrations are already fairly efficient—especially in Estonia (Box 2.2)—there is room for improvement. Institutional arrangements could be strengthened in Lithuania, while Latvia faces a relatively high level of tax debt which hinders operational performance.
- ***CEE countries—***Tax collection is generally not unified in a single body, except in Slovenia where all taxes and social security contributions are collected by the same administration. Provision of online services is generally weak and the risk management approach to compliance could be strengthened. Also some countries, notably the Slovak Republic, face high levels of tax debt.[18]
- ***SEE-EU countries—***Improving the level of operational performance is particularly challenging. Croatia and Romania face high levels of tax debt and the value of completed verification actions is low. Bulgaria has managed to improve its VAT compliance strategy with the establishment of a special risk management, an audit unit and IT capacity to extend e-filing (see Box 2.2 for details).
- ***SEE-non-EU countries—***Except for Kosovo[19] and Macedonia, tax collection is generally not unified in a single body, and autonomy is particularly lacking in countries, where also a functional division of core activities has not been fully institutionalized. Provision of online services is generally weak (except for Kosovo and Serbia were improvements have been significant), hindering the full development of a risk management approach to compliance.

[18] High levels of tax debt could be related to limitations in the legal framework, affecting tax compliance beyond tax administration reform efforts. Some of the political economy constraints on reform are analyzed in Section C.

[19] The domestic tax authority in Kosovo collects both direct and indirect taxes, but two-thirds of VAT is collected by the customs administration. There are ongoing plans to merge the tax and customs administrations.

- ***CIS and Turkey*—**Provision of online services is strong in Turkey and has improved significantly in Russia over the last few years (see Box 2.2). However, operational performance could be further strengthened in the case of Turkey, where tax debt remains high.

Figure 2.16. Relative Strength of Tax Administrations in CESEE Economies



Sources: Organisation for Economic Co-operation and Development; and IMF staff calculations.

Note: Individual country names are shown only for countries reporting to the OECD (2015) database. Countries sorted by the tax administration strength index (from higher to lower by sub-region). The names of countries for which the underlying data are not publicly available are not shown. CIT = corporate income tax; EMs = emerging market economies excluding CESEE; EUR = European Union excluding CESEE; PIT = personal income tax; VAT = value-added tax.

4. What are the Payoffs from Improving Tax Administration?

Tax administration reform could help improve tax collection efficiency and generate sizable additional fiscal revenues in CESEE. The potential revenue gain can be presented as a function of the estimated efficiency gap[20] and the tax rates prevailing in each of the countries (see Annex VI). Taking a measure of efficiency gap calculated against the *average tax collection efficiency* for each type of tax, for different income levels, the overall revenue gains for CESEE could be conservatively estimated to fall in the range of 0.5 percent of GDP in the Baltics—where tax efficiency is the highest—to 2 percent of GDP among the CIS countries (Figure 2.17, panel 1, solid bars). It should be noted, however, that these estimates may not fully reflect the order of

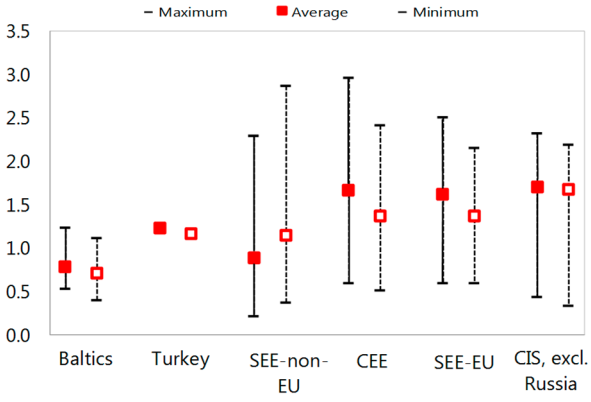
[20] If the efficiency gap is calculated against the *highest tax collection efficiency* for each type of tax, for different income levels, the estimated gains from closing these efficiency gains for CESEE countries could range from 2 to 5 percent of GDP.

magnitude of tax efficiency gaps in different CESEE sub-regions, given the fact that tax rates are relatively low in some countries—particularly in SEE-non-EU—and higher in others—CEE and SEE-EU. This can be addressed by estimating the revenue potential at average tax rates, as shown by dashed bars in Figure 2.17, panel 1.

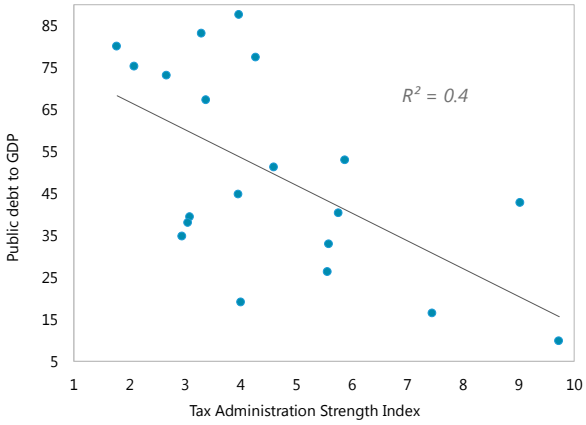
By delivering additional fiscal revenues, more efficient tax administration could help reduce fiscal liabilities. Indeed, countries with more efficient tax administration tend to have lower government debt (Figure 2.17, panel 2). However, tax administrations reforms do not deliver fiscal savings overnight. This means that if countries aim to use potential revenue gains for fiscal consolidation, they need to speed up the adoption of reforms as it may take several years for tax administration reforms (once fully implemented) to translate into higher revenues.

Figure 2.17. Tax Administration Efficiency and Fiscal Outcomes

1. Potential Revenue Gain from Tax Efficiency Improvement *(VAT, CIT, and PIT; Percent of GDP)*



2. Tax Administration Efficiency and Government Debt



Sources: Organisation for Economic Co-operation and Development; *World Economic Outlook*; and IMF staff calculations
Note: The efficiency gap is calculated against the *average tax collection efficiency* for each type of tax, for different income levels. The calculations do not take into account efficiency gains from reducing the cost of collection. Dashed lines correspond to estimates at average tax rates. CEE = Central and Eastern Europe; CIS = Commonwealth of Independent States; SEE = Southeastern European countries; CIT = corporate income tax; PIT = personal income tax; VAT = value-added tax.

Besides additional revenues, tax administration reforms may have broader positive economic implications. Noncompliance with tax obligations may compromise equity because similar individuals or firms are subject to different levels of taxation due to differences in compliance or because some firms may find it easier to escape their tax obligations.[21] In addition, a more efficient and fair tax system may help reduce the shadow economy (see Box 2.3). This is relevant because negative externalities of a firm's decision to operate in the shadow economy, such as the impact on governance, the legal system, and infrastructure, entail significant losses to the economy at the macro level (Box 2.3).

[21] Crivelli and others (2016) find that about 1.3 percent of GDP in tax revenue is lost due to profit shifting activities of multinational corporations in developing countries.

Box 2.2. Improving Tax Administration: Selected Country Experiences 1/

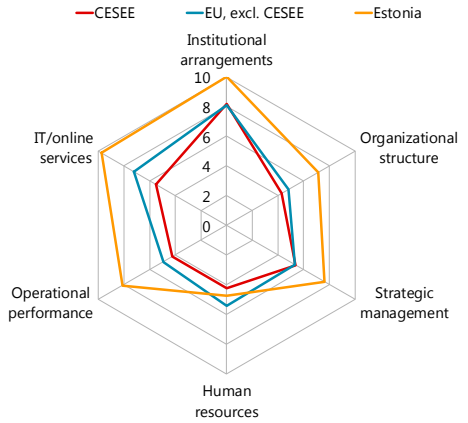
Estonia, Bulgaria, and Russia provide good examples of tax efficiency gains from recent tax administration reforms. Their experiences suggest that investment in information technology to support core tax administration activities, including risk analysis, are key to improve tax compliance and reduce collection costs.

Estonia

Outcomes: Tax efficiency in Estonia is very high: the VAT compliance gap is low, the PIT tax collection efficiency is high, and the cost of collecting taxes is among the lowest not only in CESEE but among all OECD countries.

Institutional changes: The Estonian Tax and Customs Board (ETCB) has developed into a full-service-oriented revenue body that allows maximum simplification in the fulfilment of tax liabilities, through extended use of information technology (e-filing now covers nearly 99 percent of total tax receipts). Risk analysis has been substantially upgraded, supported by the introduction of new methods for data analysis, and automated submission of routine reports. Improved information systems have also supported the administration of tax arrears, resulting in higher tax recovery (tax debt is below 5 percent of revenues).

Figure 2.2.1. Estonia: Tax Administration Core Performance Areas



Sources: OECD; and IMF staff calculations.
IT = information technology.

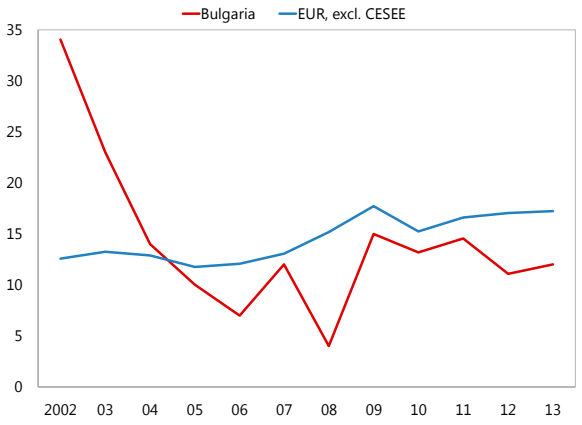
Reform drivers: The Estonian tax administration overhaul started with the adoption of a new tax system in the early 1990s. It got a new impetus in the context of a wider public administration reform in 1996, aimed at establishing an efficient and citizen-oriented administration that would meet the demands of the EU membership. It strengthened further during the global financial crisis of 2008/09 in order to secure revenues following a severe recession.

Bulgaria

Outcomes: The improvement in tax efficiency is mostly explained by a sharp reduction in the compliance gap (from about 35 percent to below the advanced European average) in the past 10 years.

Figure 2.2.2. Bulgaria: VAT Gap

(Percent of VAT collection)



Sources: CASE (2016); and IMF staff calculations.

Institutional changes: The Bulgarian National Revenue Agency (NRA) unified tax, social security and health insurance contribution collections. It established functionally-based headquarters, large- and medium-size taxpayer offices, and a call center

dealing with customer inquiries. This has contributed to strengthening the service orientation of the NRA. A special Risk Management and Audit Unit responsible for general risk analysis and identification of special audit cases was established and a partially automated audit selection process was successfully introduced, particularly for VAT refunds. The IT capacity at the central and territorial level was enhanced, and computer systems to support business processes were implemented, which has helped reduce tax frauds in excise taxes, and other tax receivables. The possibility of electronic filing was introduced for all major taxes and contributions. More recent measures have been laid out in the "Single National Strategy for Improving the Tax Collection, Tackling the Shadow Economy and Reducing the Compliance Cost, 2015–17)," including the introduction of a VAT reverse charge mechanism for supplies of grains and industrial crops.

Reform drivers: Bulgaria has been making concerted effort to improve the tax administration for nearly a decade as part of broader government-wide reforms initially directed at EU accession negotiations.

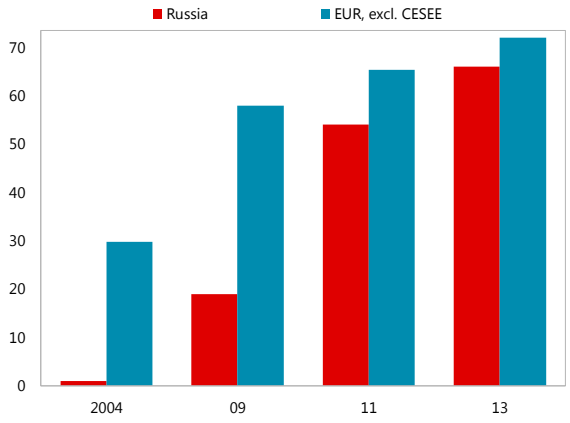
Russia

Outcomes: The improvement in tax efficiency is mostly explained by a drastic reduction in the cost of tax collection. Tax collection costs were reduced by almost one half in a five-year period, without affecting collection efficiency of the main taxes.

Institutional changes: The Russian Federal Tax Service (FTS) has been implementing a major downsizing program since 2001, which resulted in a drastic consolidation of tax offices—reducing its network from more than 2,500 to fewer than 1,000 offices today—and a 20 percent reduction of staff. Automation rapidly followed. Beginning in 2002, the FTS gradually expanded online services, it rolled out an IT platform to support core functions, enabled e-filing for federal taxes, and implemented a modern set of enquiry and payment facilities, including payment of taxes through self-service terminals in banks, as well as electronic state registration and remote access to registration data. The FTS stepped up the management of tax arrears, achieving a net reduction of 60 percent in tax debt during 2008–13 (now at about 10 percent of tax collection).

Figure 2.2.3. Russia: E-filing

(In percent)



Sources: OECD; and IMF staff calculations.

Reform drivers: The FTS went through several reforms and modernization since its inception in 1990. It was not until the 1998 crisis, however, that remaining weaknesses in tax collection became evident—including low tax compliance and a very costly tax administration—providing further impulse for reform.

1/ This Box was prepared by Ernesto Crivelli.

Box 2.3. Government Effectiveness and the Shadow Economy in CESEE 1/

What is the shadow economy? The shadow economy is typically defined as comprising all market-based legal production of goods and services that are deliberately concealed from the authorities to avoid taxes and regulation (see for example, Feige (1994) and Schneider (2005)). Because surveys tend to understate the size of the shadow economy, it is typically estimated using econometric techniques.

The informal sector is quite large in many CESEE countries, with the estimates ranging from slightly higher than 14 percent of official GDP in the Slovak Republic to more than 50 percent in Moldova, according to Schneider (2015), which is the only dataset that provides overtime consistency and cross-country comparability for a large number of countries. Despite a wide margin of uncertainty around these estimates, the average size of the shadow economy in CESEE is estimated to be well above the average size of the shadow economy in advanced Europe (see Figure 2.3.1). However, the picture is different in comparison with other EMs that have similar income levels. The shadow economy is lower in many CESEE countries compared to their peers with similar income level. The CIS and some Baltic countries stand out with higher level of shadow economy compared to peers with similar income levels. Zukauskas (2015) identified two important factors contributing to the high levels of shadow economy in the Baltic countries: (1) certain shadow economy activities, particularly "envelope wages," are considered socially acceptable, and (2) despite a low tax burden on income especially corporate income, the tax burden on labor is relatively high, exceeding the EU average.

What drives CESEE firms to operate underground? Consistent with the literature, the relatively larger size of the shadow economy in CESEE compared to advanced Europe likely reflects a relatively less efficient tax administration and higher regulatory burden on firms in CESEE compared with advanced Europe.

- Most studies find that tax and social security burdens are the main root causes of the shadow economy (see for example, Johnson, Kaufmann, and Zoido-Lobatón (1998a, b), Giles and Tedds (2002), and Dell'Anno (2003) Therefore, it is not surprising that the tax administration efficiency and the extent of disincentives to work created by the tax system are strongly correlated with the size of the shadow economy (Figure 2.3.1).
- The regulatory burden on firms is another important factor identified in the literature. Johnson, Kaufmann, and Zoido-Lobatón (1998b) found empirical evidence of the influence of regulations on the shadow economy. They emphasized that it is the enforcement of regulation which is the key factor for the burden levied on firms and individuals, which drives firms into the shadow economy. Not surprisingly, among advanced and emerging European economies, the shadow economy is higher in countries with higher bureaucracy costs and the presence of extra payments and bribery (Figure 2.3.1).

Why is the shadow economy a problem? The presence of the shadow economy limits governments' ability to collect taxes and to regulate economic relations between economic agents, and it also hampers efficient allocation of resources. Although at the micro level, a firm's decision to operate informally may not directly affect its efficiency, at the macro level, negative externalities such as the impact on governance, the legal system, infrastructure, and the tax system and rates, entail significant losses to the economy as a whole.

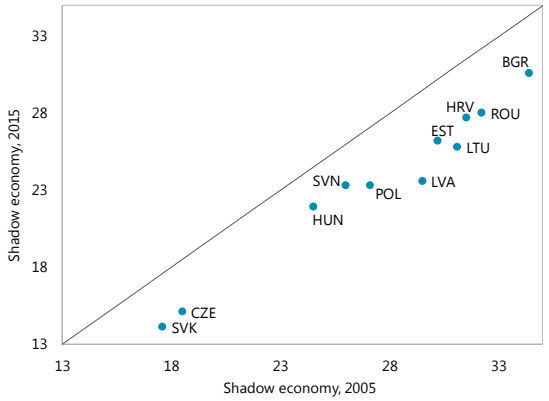
… And what can be done about it? In all CESEE countries, the shadow economy has been shrinking since 2005 (Figure 2.3.1). Particularly in Latvia, Lithuania, and Romania, the decline in the shadow economy was the largest, ranging from 4 to 6 percentage points of GDP during 2005–15. For example, in Latvia the authorities undertook comprehensive and large-scale efforts to reduce the size of the shadow economy between 2010 and 2013, while in Lithuania, illegal workers' inspections have doubled since 2011. The Czech and Slovak Republics also managed to reduce the shadow economy considerably from already low levels during the same period. In the Czech Republic, measures to tackle the shadow economy focused on reducing bureaucracy and making the tax submission process more user-friendly, while in the Slovak Republic, the government aimed to limit the use of cash in the economy and streamline the tax system (Goliaš 2013). Thus, improving tax administration efficiency and reducing regulatory burden on firms in CESEE could help to further reduce the shadow economy. This would in turn increase the tax base, further improve economic structure and mitigate the negative externalities of the shadow economy on the formal sector.

1/ This Box was prepared by Gil Mehrez and Ara Stepanyan.

Figure 2.3.1. Advanced and Emerging Europe: Shadow Economy, 2005–15

While the share of shadow economy declined in CESEE...

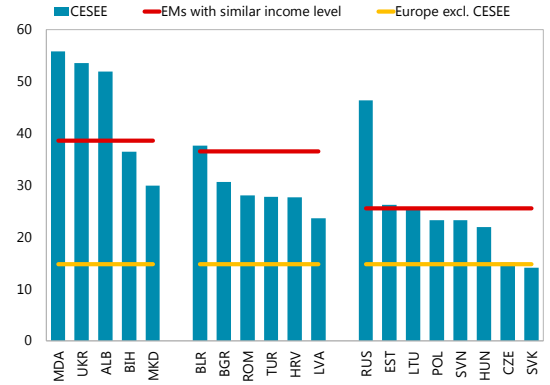
1. Size of Shadow Economy over Time, 2015–05



The shadow economy tends to be more widespread in countries with low tax administration efficiency...

...a significant portion of firms still operate underground.

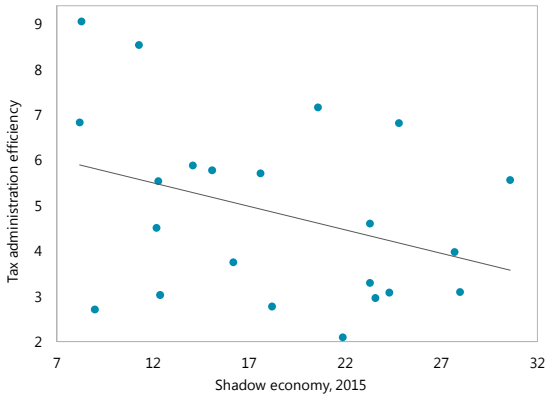
2. The Shadow Economy: Cross-Country Comparison



(estimates as of 2015 or latest available)1/

...and where the tax system reduces incentives to work...

3. The Shadow Economy and Tax Administration Efficiency

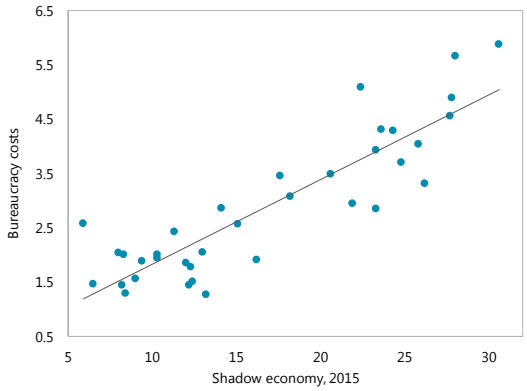


...where bureaucracy costs are high...

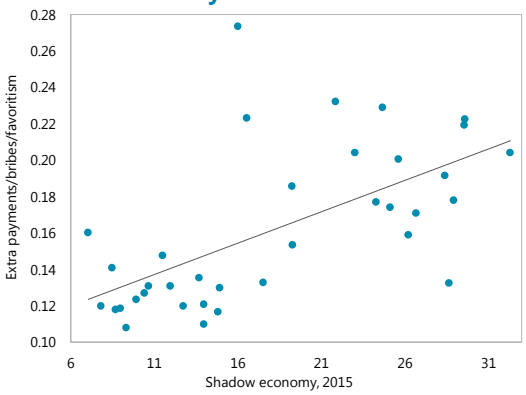
4. The Shadow Economy and Effects of Taxation on Work Incentives

...and where extra payments and bribery are widespread.

5. The Shadow Economy and Bureaucracy Cost



6. The Shadow Economy and Presence of Extra Payments and Bribes



Sources: Schneider (2015); OECD; World Economic Forum; Doing Business; and IMF staff calculations.
Note: Unless indicated otherwise, data are for advanced and emerging market European economies.
1/ For non EU countries, the shadow economy estimates are as of 2013 (Schneider (2015).

C. Political Economy Aspects of Reforms

Political institutions play a crucial role in shaping economic institutions. Indeed, the strength of public investment management framework and tax administration appear to be linked to the quality of bureaucracy, control of corruption in politics, and accountability. Furthermore, improvements in government effectiveness tend to be associated with improvements in political institutions. Therefore, taking into account political economy factors while developing reform strategies could increase the likelihood of their success.

The strength of public investment management and tax administration appear to be linked to the quality of specific political institutions, whose relevance is well established in the literature (Persson and Tabellin 2000; Acemoglu and Robinson 2006). While some of these indicators may not be measured precisely, the analysis presented here focuses on broad relations and trends rather than on assessing the strength of specific institutions in individual countries. Some of the main findings follow:

- Political indicators tend to be more closely associated with the PIMA scores related to the *implementation and allocation*, and in the case of tax administration, with the scores related to the *institutional arrangements* and *operational performance* (Figure 2.18).[22]

- *Corruption in politics and quality of bureaucracy are strongly associated with most of PIMA and tax administration performance scores.*[23] In the environment of excessive patronage and favoritism and lack of independence of the bureaucratic apparatus from political interference, the cost and likelihood of being caught in the event of a misconduct is lower, thus increasing incentives to engage in rent seeking. More generally, IMF (2016b) finds that corruption affects core government functions, for example, by weakening the state's capacity to tax, increasing the cost and reducing the efficiency of public investment.

- *Accountability appears to be relevant mostly for areas that require established rules and procedures.* For example, accountability is strongly associated with scores in areas of fiscal rules, management of PPPs, protection of investments, project selection, and transparency of budget execution. Higher accountability reduces rent-seeking incentives of politicians and encourages them to announce and pursue policies that favor establishment of economic institutions that limit room for rent extraction.

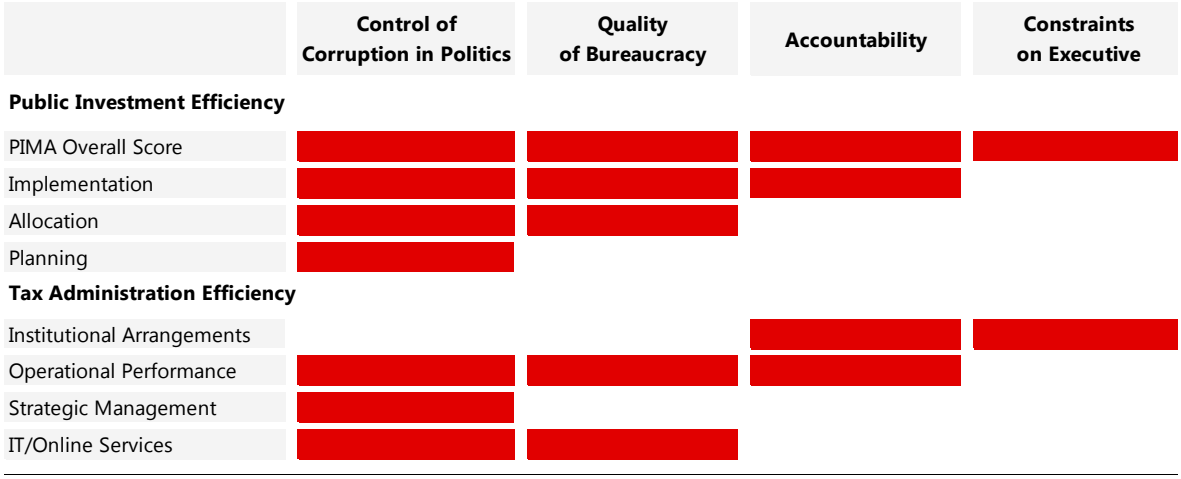
- *Furthermore, improvements in government effectiveness tend to be associated with improvements in political institutions.* Our analysis suggests that countries that experienced improvements in the tax efficiency have also recorded significant improvements in the

[22] After controlling for the differences in income per capita, the associations remain broadly similar.

[23] *Corruption* in politics main refers to incidence of excessive patronage, nepotism, job reservations, and "favor-for-favors.. *Quality of bureaucracy* reflects the extent to which the bureaucratic apparatus is free from political interference and has an established mechanism for recruitment and training. See Annex VIII for more details.

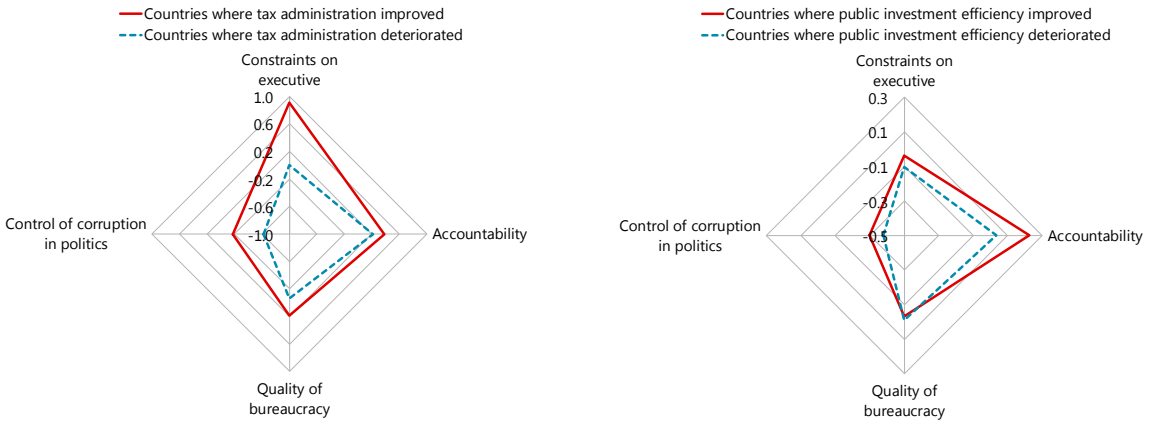
quality of bureaucracy and accountability (Figure 2.19). A similar pattern is observed in the case of public investment efficiency: countries that improved public investment efficiency have also increased accountability compared with those countries where public investment efficiency has not improved. These are the areas that have strong correlations with PIMA and tax administration performances scores.

Figure 2.18. Correlations of Political Institutions with the Strength of Public Investment Management and Tax Administration Institutions



Sources: World Bank, Database of Political Institutions; Political Regime Characteristics and Transitions (Polity IV); World Bank, International Country Risk Guide; Reporters Without Borders; OECD; country authorities; and IMF staff calculations.
Note: The figure covers all OECD countries and the following non-OECD countries: Albania, Argentina, Brazil, Bulgaria, China, Colombia, Costa Rica, Croatia, Cyprus, India, Indonesia, FYR Macedonia, Malaysia, Malta, Montenegro, Morocco, Romania, Russia, Saudi Arabia, Serbia, Singapore, South Africa, Thailand, and Ukraine. IT = information technology; PIMA = Public Investment Management Assessment.

Figure 2.19. CESEE and Other Emerging Economies: Average Change in Political Economy Indicators, 2000–15



Sources: World Bank, Database of Political Institutions; Political Regime Characteristics and Transitions; World Bank, International Country Risk Guide; Reporters Without Borders; and IMF staff calculations.

D. Key Takeaways and Policy Implications

Public investment management and tax administration systems in CESEE are fairly efficient, but significant gaps remain. Many CESEE countries already possess the core elements of a modern tax administration and tend to have public investment management institutions and processes that are stronger than what might be expected given their income levels. However, there are large differences in efficiency and quality of institutions among CESEE countries, and compliance gaps are sizeable in some cases.

There is scope for improvement in both areas, though priorities vary across countries:

- On *public investment management*, the focus should be on improving allocation and implementation frameworks and procedures. Project appraisal and management could be strengthened by publishing cost-benefit analyses of major projects, developing procedures for project adjustment, and conducting ex-post evaluations. Countries with access to EU funds should extend the EU procedures on project appraisal to all projects. Also, open and transparent procurement processes should be extended, and in some cases, budget appropriation should be preserved.
- On *tax administration*, the focus should be on bringing institutional arrangements in line with best practices (in countries where tax collection is not unified in a single body or where a functional structure is lacking), upgrading IT systems, strengthening the risk management approach to compliance and improving operational performance. Countries should seek to extend automation of processes and introduce new methods for data analysis and identification of risks, which are important elements of a successful strategic management approach to tax compliance. Several countries need to focus on operational performance—particularly those with high tax debt.

The benefits associated with efficiency improvements go well beyond fiscal savings. Efficiency gains from improving public investment management institutions and tax administration can help create fiscal space that can be used to boost public investment or reduce the still-elevated fiscal deficits. In addition, better public investment management raises the quality of public investments and can therefore, amplify its impact on economic growth through higher productivity. Also in countries with access to EU funds, improving PIM institutions has been associated with higher absorption of these funds. Tax administration reform can help increase the fairness of the tax system, and reduce the size of the shadow economy.

Finally, creating reform momentum requires taking into account political economy factors. Improvements in government effectiveness may be constrained by poor accountability, low quality of bureaucracy or by weak control of corruption in politics, which appear to be strongly correlated with the quality of public investment management institutions and tax administration. To overcome these constraints, the design of reforms should include elements that help reduce resistance to reforms and build the support base for their successful completion.

Annex I. CESEE: Growth of Real GDP, Domestic Demand, Exports, and Private Consumption

(Percent)

	Real GDP Growth				Real Domestic Demand Growth				Real Export Growth (goods and services)				Real Private Consumption Growth			
	2014	2015	2016	2017	2014	2015	2016	2017	2014	2015	2016	2017	2014	2015	2016	2017
Baltics[1]	2.7	1.8	2.3	3.0	2.5	3.8	3.2	3.6	2.8	0.1	2.6	3.2	3.1	4.6	4.2	3.7
Estonia	2.9	1.1	1.5	2.5	4.1	-0.9	2.5	3.2	1.7	-1.1	1.8	3.3	3.3	4.5	4.4	4.3
Latvia	2.0	2.7	2.5	3.4	0.6	3.1	2.8	3.6	3.1	1.4	2.3	3.1	1.3	4.1	3.4	3.0
Lithuania	3.0	1.6	2.6	3.0	3.0	6.4	3.7	3.8	3.0	-0.2	3.0	3.1	4.1	4.9	4.6	3.8
Central and Eastern Europe[1]	3.2	3.7	2.8	3.0	4.3	3.5	2.3	3.5	6.7	7.2	7.4	5.6	2.2	2.8	3.2	3.2
Czech Republic	2.7	4.5	2.5	2.7	3.4	4.8	1.7	3.2	8.7	7.7	6.7	5.0	1.8	3.0	3.2	3.2
Hungary	3.7	2.9	2.0	2.5	4.2	1.9	0.2	2.7	7.6	8.4	6.4	6.3	1.5	2.6	2.7	2.4
Poland	3.3	3.6	3.1	3.4	5.0	3.4	3.0	3.8	6.4	6.8	8.5	5.7	2.4	3.0	3.5	3.6
Slovak Republic	2.5	3.6	3.4	3.3	3.1	4.9	3.0	3.5	3.6	7.0	4.2	5.4	2.3	2.4	2.9	3.0
Slovenia	3.1	2.3	2.3	1.8	1.8	1.4	1.1	2.8	5.7	5.6	5.3	3.2	2.0	0.5	2.0	2.3
Southeastern Europe-EU[1]	2.2	3.3	4.1	3.3	2.3	3.8	5.5	4.0	6.5	6.5	5.3	5.8	2.9	4.2	7.4	4.3
Bulgaria	1.5	3.0	3.0	2.8	2.6	1.0	2.8	3.1	-0.1	7.6	3.4	3.4	2.7	0.8	3.8	3.3
Croatia	-0.4	1.6	1.9	2.1	-1.7	1.2	2.0	2.4	7.3	9.2	8.5	8.3	-0.7	1.2	1.7	1.9
Romania	3.0	3.8	5.0	3.8	3.1	5.3	7.1	4.7	8.6	5.5	5.2	6.0	3.8	6.1	9.9	5.1
Southeastern Europe-non-EU[1]	0.3	2.2	2.9	3.2	1.5	1.6	3.5	2.9	6.3	5.8	7.5	6.9	0.8	0.6	2.6	2.2
Albania	1.8	2.8	3.4	3.7	3.7	3.0	7.4	3.7	1.8	-0.2	5.7	3.5	3.0	0.2	3.8	2.7
Bosnia and Herzegovina	1.1	3.2	3.0	3.2	3.1	1.7	3.5	4.0	4.9	5.9	5.4	5.3	2.3	3.2	3.9	3.6
Kosovo	1.2	4.0	4.1	3.3	1.8	3.8	5.3	4.4	16.7	1.8	2.2	5.3	4.8	3.2	4.0	3.7
FYR Macedonia	3.5	3.7	2.2	3.5	4.7	2.5	2.5	3.4	18.2	4.6	5.4	8.1	2.1	3.2	2.6	2.6
Montenegro	1.8	3.2	5.1	3.6	2.7	4.9	10.3	2.7	-1.2	8.3	3.9	2.9	5.0	-3.8	14.9	2.6
Serbia	-1.8	0.7	2.5	2.8	-1.1	0.4	1.8	2.0	5.7	7.8	9.9	8.8	-1.3	-0.6	0.5	1.2
European CIS countries[1]	0.2	-4.2	-0.7	1.1	-1.7	-9.9	-0.5	1.6	-0.4	1.8	-1.8	1.7	0.8	-10.0	-0.3	2.8
Belarus	1.7	-3.9	-3.0	-0.5	0.3	-6.3	-9.7	-3.6	7.0	-0.1	0.9	-0.5	4.3	-2.4	-2.5	0.4
Moldova	4.8	-0.5	2.0	3.0	3.0	-5.9	1.6	0.6	1.0	2.3	1.4	8.0	3.2	-2.3	1.3	1.9
Russia	0.7	-3.7	-0.8	1.1	-0.9	-9.9	-0.3	1.7	0.6	3.6	-1.8	1.6	1.4	-9.4	-0.5	2.9
Ukraine	-6.6	-9.9	1.5	2.5	-11.4	-12.7	2.5	3.2	-14.2	-16.9	-4.1	3.6	-8.1	-20.1	2.8	3.0
Turkey	3.0	4.0	3.3	3.0	1.0	4.2	4.9	2.9	7.4	-0.9	-0.5	0.7	1.4	4.8	6.4	3.6
CESEE[1,2]	1.5	-0.2	1.3	2.1	0.5	-3.0	1.7	2.5	3.1	2.8	1.2	2.8	1.4	-3.0	2.4	3.2
Emerging Europe[1,3]	1.4	-0.6	1.2	2.1	0.3	-3.6	1.7	2.4	2.9	2.6	0.9	2.7	1.3	-3.5	2.3	3.1
New EU member states[1,4]	2.9	3.5	3.1	3.1	3.7	3.6	3.1	3.6	6.4	6.6	6.6	5.5	2.4	3.3	4.3	3.5
Memorandum																
Euro Area[1]	1.1	2.0	1.7	1.5	1.1	1.9	1.8	1.6	4.4	6.3	2.9	3.5	0.8	1.8	1.6	1.5
European Union[1]	1.6	2.3	1.9	1.7	1.8	2.3	2.0	1.7	4.0	5.4	3.2	3.5	1.3	2.1	2.2	1.7

Source: IMF, World Economic Outlook database, October 2016 published version.

[1] Weighted averages using 2014 GDP valued at purchasing power parity.

[2] Includes Albania, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Kosovo, Latvia, Lithuania, FYR Macedonia, Moldova, Montenegro, Poland, Romania, Russia, Serbia, Slovak Republic, Slovenia, Turkey, and Ukraine.

[3] CESEE excluding Czech Republic, Estonia, Latvia, Lithuania, Slovak Republic, and Slovenia.

[4] Includes Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic, and Slovenia.

Annex II. CESEE: Consumer Price Index Inflation, Current Account Balance, and External Debt

(Percent)

	CPI Inflation (Period average)				CPI Inflation (End of period)				Current Account Balance to GDP				Total External Debt to GDP			
	2014	2015	2016	2017	2014	2015	2016	2017	2014	2015	2016	2017	2014	2015	2016	2017
Baltics[1]	0.4	-0.3	0.4	1.4	0.0	0.0	0.5	2.1	1.4	-0.7	-1.2	-1.7	94.2	97.0	92.2	88.2
Estonia	0.5	0.1	0.5	1.4	0.1	-0.2	0.9	2.3	1.0	2.1	0.6	0.0	94.5	93.8	88.6	82.2
Latvia	0.7	0.2	0.2	1.7	0.3	0.4	0.3	1.8	-2.0	-1.2	-2.0	-1.2	142.4	138.2	128.7	125.4
Lithuania	0.2	-0.7	0.5	1.2	-0.2	-0.2	0.5	2.2	3.6	-1.7	-1.6	-2.8	65.5	73.9	72.3	68.9
Central and Eastern Europe[1]	0.0	-0.5	-0.2	1.3	-0.7	-0.2	0.5	1.8	-0.6	0.7	1.1	0.5	76.0	77.9	77.7	74.9
Czech Republic	0.4	0.3	0.6	1.9	0.1	0.1	1.1	2.2	0.2	0.9	1.5	1.0	67.9	69.4	68.1	67.7
Hungary	-0.2	-0.1	0.4	1.9	-0.9	0.9	0.8	2.6	2.0	4.4	4.9	4.6	114.8	108.8	104.0	97.6
Poland	0.0	-0.9	-0.6	1.1	-1.0	-0.5	0.2	1.5	-2.0	-0.2	-0.1	-1.0	65.1	69.4	70.8	68.1
Slovak Republic	-0.1	-0.3	-0.2	1.1	-0.1	-0.5	0.3	1.4	0.1	-1.3	-1.0	-0.6	83.2	84.4	85.6	84.4
Slovenia	0.2	-0.5	-0.3	1.0	0.1	-0.4	0.3	0.8	6.2	5.2	7.7	7.2	115.7	114.3	109.5	105.8
Southeastern Europe-EU[1]	0.3	-0.7	-1.5	1.3	0.0	-0.8	-0.4	2.2	0.0	0.3	-0.7	-1.5	71.4	66.9	69.5	66.5
Bulgaria	-1.6	-1.1	-1.6	0.6	-2.0	-0.9	-0.8	1.4	0.9	1.4	0.8	0.0	85.6	76.6	80.9	75.5
Croatia	-0.2	-0.5	-1.0	0.8	-0.5	-0.1	-0.1	1.2	0.9	5.2	3.0	2.2	108.4	103.7	101.5	97.1
Romania	1.1	-0.6	-1.5	1.7	0.8	-0.9	-0.3	2.7	-0.5	-1.1	-2.0	-2.8	58.6	55.6	58.7	56.7
Southeastern Europe-non-EU[1]	0.9	0.7	0.6	2.0	0.7	0.7	1.2	2.3	-7.1	-6.0	-6.1	-6.2	64.1	69.8	69.7	68.6
Albania	1.6	1.9	1.1	2.2	0.7	2.0	1.8	2.3	-12.9	-11.2	-13.3	-13.8	34.3	41.1	42.0	42.6
Bosnia and Herzegovina	-0.9	-1.0	-0.7	0.5	-0.5	-1.2	-0.3	0.7	-7.5	-5.6	-5.1	-6.0	63.7	63.7	63.7	63.2
Kosovo	0.4	-0.5	0.2	0.9	-0.4	-0.1	0.5	1.7	-7.9	-8.7	-9.6	-9.1	...	...	...	...
FYR Macedonia	-0.1	-0.2	0.1	0.7	-0.5	-0.3	0.5	1.0	-0.8	-1.4	-1.8	-2.4	65.2	68.5	72.4	72.8
Montenegro	-0.7	1.6	0.5	1.3	-0.3	1.4	1.0	1.4	-15.2	-9.7	-10.3	-11.8	154.8	154.1	155.9	160.8
Serbia	2.1	1.4	1.3	3.2	1.8	1.6	2.0	3.5	-6.0	-4.8	-4.2	-3.9	76.2	86.2	84.3	81.3
European CIS countries[1]	8.6	18.1	8.1	5.8	12.6	15.3	6.8	5.4	1.9	4.4	2.3	2.7	35.8	47.3	49.3	45.0
Belarus	18.1	13.5	12.7	12.0	16.2	12.0	13.0	11.0	-6.9	-3.8	-4.9	-4.8	52.6	70.1	81.8	82.7
Moldova	5.1	9.6	6.8	4.4	4.7	13.5	3.5	4.7	-3.8	-4.7	-2.8	-3.4	83.7	100.7	102.2	102.1
Russia	7.8	15.5	7.2	5.0	11.4	12.9	5.9	4.9	2.8	5.2	3.0	3.5	29.4	38.0	39.2	34.7
Ukraine	12.1	48.7	15.1	11.0	24.9	43.3	13.0	8.5	-3.9	-0.3	-1.5	-2.1	95.4	134.6	141.3	136.3
Turkey	8.9	7.7	8.4	8.2	8.2	8.8	9.1	6.2	-5.4	-4.5	-4.4	-5.6	50.3	55.3	59.4	61.1
CESEE[1,2]	5.9	10.1	5.4	4.8	7.5	9.0	5.1	4.4	-0.3	1.3	0.3	0.1	51.4	58.2	60.0	57.3
Emerging Europe[1,3]	6.4	11.0	5.8	5.1	8.2	9.8	5.5	4.6	-0.5	1.4	0.3	0.0	48.7	55.9	58.0	55.2
New EU member states[1,4]	0.1	-0.5	-0.5	1.3	-0.5	-0.3	0.3	1.9	-0.3	0.5	0.5	-0.1	76.1	76.4	76.6	73.7

Source: IMF, World Economic Outlook database, October 2016 published version.

[1] Weighted averages using 2015 GDP valued at purchasing power parity.

[2] Includes Albania, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Kosovo, Latvia, Lithuania, FYR Macedonia, Moldova, Montenegro, Poland, Romania, Russia, Serbia, Slovak Republic, Slovenia, Turkey, and Ukraine.

[3] CESEE excluding Czech Republic, Estonia, Latvia, Lithuania, Slovak Republic, and Slovenia.

[4] Includes Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic, and Slovenia.

Annex III. CESEE: Evolution of Public Debt and General Government Balance [1]

(Percent of GDP)

	General Government Balance				Public Debt			
	2014	2015	2016	2017	2014	2015	2016	2017
Baltics[2]	-0.7	-0.5	-0.5	-0.5	33.3	33.2	32.7	32.1
Estonia	0.7	0.4	0.2	0.2	10.4	9.7	9.5	9.1
Latvia[3]	-1.7	-1.8	-1.2	-1.2	38.6	34.9	35.1	34.7
Lithuania	-0.7	-0.2	-0.3	-0.5	40.7	42.8	41.9	41.0
Central and Eastern Europe[2]	-3.0	-2.2	-2.3	-2.4	53.9	53.9	54.3	54.6
Czech Republic	-1.9	-0.4	-0.6	-0.6	42.2	40.3	39.8	38.8
Hungary	-2.3	-2.0	-2.0	-2.7	76.2	75.3	75.3	75.1
Poland	-3.3	-2.6	-2.8	-2.9	50.5	51.3	52.4	53.2
Slovak Republic	-2.7	-3.0	-2.3	-2.2	53.9	52.9	52.8	53.0
Slovenia[3]	-7.1	-3.6	-3.5	-2.8	80.9	83.1	80.0	81.2
Southeastern Europe-EU[2]	-2.8	-2.0	-2.4	-2.4	44.0	43.3	44.2	43.8
Bulgaria[3]	-3.6	-2.9	-0.8	-1.2	26.4	26.3	29.7	26.3
Croatia[3]	-5.5	-3.2	-2.8	-2.6	86.5	86.7	86.8	86.3
Romania	-1.9	-1.5	-2.8	-2.8	40.5	39.3	39.7	40.3
Southeastern Europe-non-EU[2]	-5.0	-3.2	-2.7	-2.4	61.3	64.5	64.6	63.6
Albania[3]	-5.5	-4.1	-2.5	-2.5	72.0	73.3	72.2	69.1
Bosnia and Herzegovina	-3.3	-0.5	-0.9	-0.7	44.0	44.7	44.1	43.5
Kosovo[3,4]	-2.5	-1.8	-1.3	-2.0	16.7	19.0	21.7	22.5
FYR Macedonia	-4.2	-3.5	-4.0	-3.5	38.3	38.0	40.2	40.4
Montenegro[3]	-2.6	-7.5	-12.1	-9.9	59.9	67.2	75.5	81.8
Serbia[3]	-6.6	-3.7	-2.5	-2.2	72.0	77.4	76.8	75.2
European CIS countries[2]	-1.4	-3.3	-4.0	-2.0	21.2	23.1	24.8	25.6
Belarus[3,5]	-1.5	-4.3	-5.3	-8.2	37.3	53.7	54.9	59.2
Moldova[3]	-1.9	-2.3	-3.2	-3.0	31.4	41.5	42.8	44.5
Russia[3]	-1.1	-3.5	-3.9	-1.5	15.9	16.4	17.1	17.9
Ukraine[3]	-4.5	-1.2	-3.7	-4.4	70.3	80.1	92.7	92.1
Turkey[3]	-1.4	-1.5	-2.3	-1.9	33.5	32.9	31.7	30.8
CESEE[2,6]	-1.9	-2.6	-3.1	-2.1	33.2	34.1	34.8	35.1
Emerging Europe[2,7]	-1.9	-2.7	-3.3	-2.2	32.0	33.0	33.9	34.2
New EU member states[2,8]	-2.8	-2.0	-2.2	-2.3	50.2	50.0	50.5	50.5

Source: IMF, World Economic Outlook database, October 2016 published version.

[1] As in the WEO, general government balances reflect the IMF staff's projections of a plausible baseline, and as such contain a mixture of unchanged policies and efforts under programs, convergence plans, and medium-term budget frameworks. General government overall balance where available; general government net lending/borrowing elsewhere. Public debt is general government gross debt.

[2] Weighted averages using 2015 GDP valued at purchasing power parity.

[3] Reported on a cash basis.

[4] Regarding the overall balance, this includes fiscal room for donor-financed capital projects (for 2016-2018 period), which might not be fully utilized by year-end. Public debt includes former Yugoslav debt, not yet recognized by Kosovo.

[5] General government balance: the measure reflects augmented balance, which adds to the balance of general government outlays for bank recapitalizations and is related to called guarantees of publicly guaranteed debt.

[6] Includes Albania, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Kosovo, Latvia, Lithuania, FYR Macedonia, Moldova, Montenegro, Poland, Romania, Russia, Serbia, Slovak Republic, Slovenia, Turkey, and

[7] CESEE excluding Czech Republic, Estonia, Latvia, Lithuania, Slovak Republic, and Slovenia.

[8] Includes Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic, and Slovenia.

Annex IV. Measuring Public Investment Efficiency

The widely used methodology of Data Envelopment Analysis (DEA) is used to estimate the efficiency of public investment. This framework is based on a production function approach in which inputs are combined to produce outputs subject to a given technology. The production function represents the technical efficiency frontier and the distance between an individual observation and the frontier is a measure of inefficiency. Given a particular technology (constant, non-increasing or decreasing returns to scale) DEA method uses linear programming techniques to find a piecewise linear frontier comprising of the most efficient observations, which then "envelop" the less efficient ones (Sutherland and others 2007).

We follow an approach similar to IMF (2015a) to calculate efficiency of public investment. In line with this approach, a *hybrid* of the following two different set of indicators is used to measure output of public investment: (1) a *physical indicator*. This indicator intends to capture the reach and access of public infrastructure, and combines pure infrastructure indicators (access to water, electricity production) and indicators of provision of social services (number of hospital beds and secondary school teachers). All variables except access to water are expressed in per capita terms and standardized as they are expressed in different scales; (2) a *survey based indicator of quality*. This indicator is based on World Economic Forum pillar 2 subcomponents focusing on quality of key infrastructure services. The output of public investment is measured as the hybrid indicator that combines the access and quality indicators described above.

The main input variable is the public capital stock per capita. Estimates of public capital stock are taken from IMF's Public Investment and Capital Dataset and are constructed using a perpetual inventory methodology described in IMF (2015). As the inputs and their intensity are not necessarily homogenous among countries, per capita GDP is used as the second input, following the practice in the literature.

The efficiency scores calculated appear to be robust to a variety of specifications. The scores are calculated for 17 CESEE countries and 90 other emerging market and advanced economies, over 2006-13. Different specifications of output variables are explored, including pure physical, only quality, and specifications including additional areas such as roads. All scores are highly correlated (0.6-0.9).

Annex V. Public Investment Management Questionnaire

The PIMA scores used in this report are based on the following questionnaire that assesses 15 public investment management institutions. The scoring was performed by IMF staff with inputs from country authorities on factual questions. An internal review has been conducted to ensure consistency across countries. The framework is described in more details in IMF (2015a).

A	Ensuring Sustainable Levels of Public Investment
1	Fiscal principles or rules: Are there explicit fiscal principles or rules, and how do they apply to capital spending?
1.a.	Is fiscal policy guided by one or more permanent fiscal principles, or rules?
1.b.	Do fiscal principles or rules constrain capital spending in the near term?
1.c.	Are there targets or limits for government liabilities, debt, or net worth??
2	National and Sectoral Planning: Are investment allocation decisions based on sectoral and inter-sectoral strategies?
2.a.	Does the government publish national and sectoral strategies for public investment?
2.b.	Are the government's national and sectoral strategies or plans for public investment costed?
3.c.	Do sector strategies include measurable targets for the outputs and outcomes of investment projects?
3	Central-Local Coordination: Is there effective coordination of central and sub-national governments' investment plans?
3.a.	Are there limits on sub-national governments' borrowing?
3.b.	Is capital spending by SNGs coordinated with central government?
3.c	Does central government have a transparent, rule-based system for making capital transfers to SNGs, and for providing timely information on such transfers?
4	Public-Private Partnerships: Is there a transparent framework for the scrutiny, selection, and oversight of PPP projects?
4.a.	Has the government published a strategy for PPPs and issued standard criteria for entering into PPP arrangements?
4.b.	Are PPPs subject to value for money review by a dedicated PPP unit prior to approval
4.c.	Is the accumulation of explicit and/or contingent PPP liabilities systematically recorded and controlled?
5	Regulation of Infrastructure Companies: Is there a favorable climate for the private sector and SOEs to participate in infrastructure provision?
5.a.	Does the regulatory framework support competition in contestable markets for economic infrastructure (e.g., power, water, telecoms, and transport)?
5.b.	Are there independent regulators who set the prices of economic infrastructure services based on objective economic criteria?
5.c.	Does the government oversee the investment plans of infrastructure SOEs and monitor their financial performance?
B	Ensuring Public Investment is Allocated to the Right Sectors and Projects
6	Multi-Year Budgeting: Does the government prepare medium-term projections of capital spending on a full cost basis?
6.a.	Is capital spending by ministry forecasted over a multi-year horizon?
6.b.	Are there multi-year ceilings on capital expenditure by ministry or program?
6.c.	Are projections of the full cost of major capital projects over their life cycle published?
7	Budget Comprehensiveness: To what extent is capital spending undertaken through the budget?
7.a.	Is capital spending mostly undertaken through the budget?
7.b.	Are externally funded capital projects included in the budget documentation?
7.c.	Is information on PPP transactions included in the budget documentation?

8	Budget Unity : Is there a unified budget process for capital and current spending?
8.a.	Are capital and recurrent budgets prepared and presented together?
8.b.	Does the budget include appropriations of the recurrent costs associated with capital investment projects?
8.c.	Does the budget classification and chart of accounts distinguish clearly between recurrent and capital expenditure, in line with international standards?
9	Project Appraisal: Are project proposals subject to systematic project appraisal?
9.a.	Are capital projects subject to standardized cost-benefit analysis whose results are published?
9.b.	Is there a standard methodology and central support for the appraisal of projects?
9.c.	Are risks taken into account in project appraisal?
10	Project Selection: Are there criteria and institutions in place to guide project selection?
10.a.	Does the government undertake a central review of major project appraisals before decisions are taken to include projects in the budget?
10.b.	Does the government publish and adhere to standard criteria for project selection?
10.c.	Does the government maintain a pipeline of approved investment projects for including in the annual budget?
C	Delivering Productive and Durable Public Assets
11	Protection of Investment: Are investment projects protected during budget implementation?
11.a.	Are total project outlays appropriated by Parliament at the time of commencement of a project?
11.b.	Are in-year transfers of appropriations (virement) from capital to current spending prevented?
11.c.	Can unspent appropriations for capital spending be carried over to future years?
12	Availability of Funding: Is financing for capital spending made available in a timely manner?
12.a.	Are ministries/agencies able to plan and commit expenditure on capital projects in advance on the basis of reliable cash flow forecasts?
12.b.	Is cash for project outlays released in a timely manner?
12.c.	Is external (donor) financing of capital projects integrated into cash management and the TSA?
13	Transparency of Budget Execution: Are major investment projects executed transparently and subject to audit?
13.a.	Is the procurement process for major capital projects open and transparent?
13.b.	Are major capital projects subject to monitoring during project implementation?
13.c.	Are ex-post audits of capital projects routinely undertaken?
14	Management of Project Implementation: Are capital projects well managed and controlled during the execution stage?
14.a.	Do ministries have effective project management arrangements in place?
14.b.	Has the government issued rules, procedures and guidelines for project adjustments that are applied systematically across all major projects?
14.c.	Does the government systematically conduct an ex post review and evaluation of projects that have completed their construction phase?
15	Monitoring of Public Assets: Is the value of assets properly accounted for and reported in financial statements?
15.a.	Are surveys of the stock, value and condition of public assets regularly conducted?
15.b.	Are non-financial asset values recorded in the government balance sheets?
15.c.	Is depreciation of fixed assets captured in government operating statements?

Annex VI. Measuring Tax Efficiency

The tax efficiency indicator is computed for each country using tax collection efficiency indicators (for VAT, CIT, and PIT taxes) for 20 CESEE countries, 15 advanced European countries, and 16 other emerging market economies. Tax collection efficiency indicators compare the revenue actually raised (for a given tax) with that which would be raised if it were perfectly enforced and levied at a uniform rate on the full tax base. They take the following form:

$$\mathrm{E}^n = \frac{T_n}{(\tau_n)x(B_n)} \quad (1)$$

Where n represents the given tax (*VAT, CIT, or PIT*); *T* is actual revenue collected (in euros); τ is the uniform rate; and *B* is a proxy for the corresponding tax base (in Euro). For the VAT, the tax rate is the standard rate and the base is estimated using domestic consumption (the so-called C-efficiency indicator). For the PIT, the average tax rate on average income was used, and the base is estimated using data on compensation of employees from national accounts. For the CIT, the standard tax rate was used and the base is estimated using data on corporate profits. While measurement issues can arise in many different dimensions (Keen, 2013), one would expect that the higher the tax collection efficiency, the closer the indicators get to unity. Data on tax rates are taken from the IMF's Fiscal Affairs Department Tax rates database, and OECD, whereas national accounts data are taken from IMF's WEO database and OECD. With this, the elements are in place to construct an index of tax efficiency which takes the form:

$$\text{Tax Efficiency} = \frac{(E^{VAT}+E^{CIT}+E^{PIT})\ X\ 10}{3} \quad (2)$$

Assuming no measurement errors, the maximum value for each of the tax collection efficiency indicators is one. The tax efficiency indicators for each country have been rescaled to take values between 0-10.

Tax revenue can be written as a function of tax collection efficiency indicators, the prevailing tax rates, and the tax base. When considering the three revenue sources (VAT, PIT, and CIT), tax revenue collection, relative to GDP, can be written as:

$$\frac{TAX}{GDP} = \sum \frac{T_n}{GDP} = \sum \tau^n E^n \frac{B_n}{GDP} \quad (3)$$

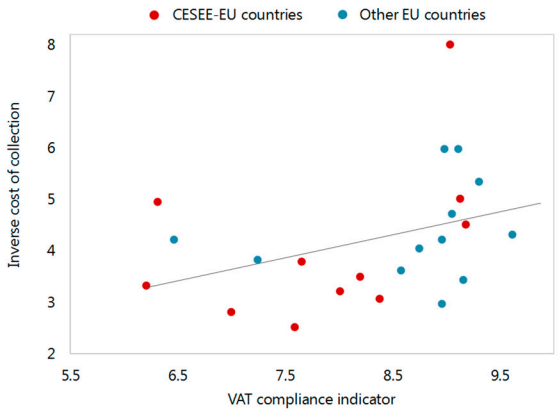
From equation (3), and assuming constant tax rates and constant tax base-to-GDP ratios, the change in tax revenue can be computed as a function of the change in tax collection efficiency.

Alternatively, the chapter has focused on available data for EU countries on VAT compliance gaps (CASE, 2016) to build a VAT compliance indicator which is computed as [1-(VAT Compliance GAP/100) x 10]. Figure VI.1 appears to indicate that VAT compliance tends to be higher in EU countries with lower cost of tax collection. Figure VI.1 also suggests that as with the tax efficiency

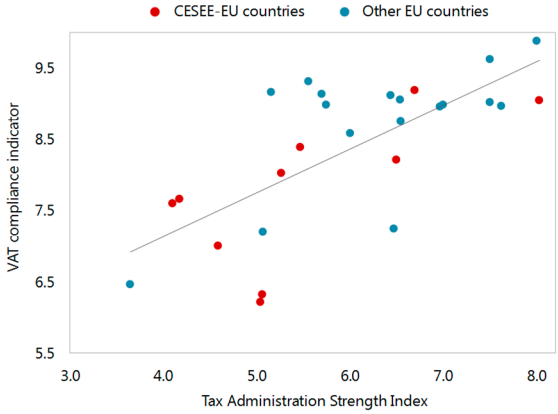
indicator used in this chapter, there is a positive association between the VAT compliance indicator and the tax administration strength index.

Figure VI.1. VAT Compliance in EU Countries

1.VAT Compliance and Cost of Collection
(10 = most efficient)



2.Tax Administration Strength and VAT Compliance
(10 = most efficient)



Sources: OECD; CASE (2016); and IMF staff calculations.
Note: VAT = value-added tax.

Annex VII. The Tax Administration Framework

The six core areas and selected indicators to assess tax administration performance are taken from OECD (2015). In addition, information from IMF country desks and tax experts was used to fill the gaps.[24] Following is a summary of the motivation for the focus on these six core areas and indicators.

1. Institutional Arrangements. Given its complex and multi-faceted responsibilities, a revenue body requires adequate powers and autonomy to perform in an efficient manner. They need to ensure transparency in their operations and proper accountability in the overall management of the tax system. Delegating tax collecting authority to a single dedicated and independent body is a vital step toward ensuring the autonomy and objectivity of the tax system.

- *Unified Body*. It assesses the share of taxes (including social security contributions) collected by the tax administration. Through commonality of process, for example, with comprehensive and unified data collection, integration leads to efficiency gains, also through the elimination in duplication of core functions, resulting in lower collection cost. Compliance cost for employers can also be reduced, with less paperwork, and a common audit program.

- *Autonomy*. It assesses whether the revenue body has the authority to make tax rulings, remit penalties, design internal structure, re-allocate budget, set service standards, influence staff recruitment, dismissal, and pay levels, independently from the constraints of the civil service system and free of political interference.

2. Organizational Structure. A functional structure in which there are special units with specific skills, offering operational economies of scale helps improve operational results while increasing transparency and accountability.

- *Functional Structure*. It assesses whether the revenue body is organized following core functions, such as, assessment, collection, data processing, audit, taxpayer service, and claim investigation. Beyond this, it assesses whether there is segmentation to understand and meet the needs of special taxpayer groups (such as a large taxpayer's unit).

- *Large Taxpayers Unit Staff*. It assesses whether this dedicated unit is well staffed to deal with the special needs and risks of this group of taxpayers, which are typically a small group responsible for the bulk of tax revenue collected.

3. Strategic Management. To maximize tax compliance with limited resources, revenue authorities identify major risks. The compliance risk management process provides a structured basis for strategic planning, a focus on the underlying drivers of non-compliance, and promotion

[24] For 44 out of 51 countries covered in this report, data on the several indicators are available from OECD (2015). Data for the 7 remaining countries (Albania, Bosnia and Herzegovina, Kosovo, Former Yugoslav Republic of Macedonia, Montenegro, Serbia, and Ukraine) was compiled from IMF country desks and tax experts.

of diversity in the treatment of major risks, and better outcomes in terms of program effectiveness.

- *Risk Management Approach*. It assesses whether a formal risk management process is used, tax gap estimates are calculated (including research conducted and publicly announced results), random audits are conducted, cooperative compliance model used or planned for large taxpayers, and whether computer-based systems are used for matching income reports and VAT invoices.

- *Identified Compliance Risk Areas*. It assesses whether a formal process is in place to identify and prioritize major compliance risks, such as from: *(1)* corporate profit shifting/transfer pricing; *(2)* VAT fraud; *(3)* economic activities in the hidden economy; *(4)* other tax avoidance schemes, and *(5)* unpaid tax debts.

4. Human Resources. Adequate human resources are key to any organization. A comprehensive and flexible human resource management strategy supports the tax administration's business strategy; has decision-making abilities regarding recruitment, retention, performance management, promotion, career progression, training and development, dismissal and retirement; motivates, supports, and protects employees.

- *Staff with a Degree*. It assesses the skill level of staff to carry out the tax administration's basic mandate, based on the share of staff with university or degree-level qualifications.

- *Staff Retention*. It is defined as the inverse of staff attrition, which usually reflects an unusual volume of staff movements out of an organization resulting from a variety of factors, such as downsizing policies, lack of recruitment, demographics, and staff dissatisfaction.

- *Verification and Debt Collection Function***.** It assesses how revenue bodies allocate their total staff resources across the range of tax administration and support functions. Given its critical importance, the share of staff allocated to account management, audit and debt collection units provides an indication of the strength of tax administration core functions.

5. Operational Performance. Refers to the effectiveness in revenue collection, including though verification activities and administration of tax arrears, and taxpayers' services, including tax refunds, and dispute resolution.

- *VAT Refunds*. It assesses whether revenue bodies to have systematic processes in place for granting timely refunds to compliant taxpayers, as well as robust compliance checks for the detection of fraudulent refund claims. Excess tax payments represent a cost to taxpayers, particularly critical to businesses operating with tight margins where cash flow is paramount.

- *Value of Completed Actions*. It assesses the share of revenue collected through verification and audit functions, which represent a major investment for revenue bodies.

- *Low Tax Debt*. Tax debt (or arrears) is an indicator of broad deficiencies, including lack of enforcement powers. Extensive use of tax withholding and various legislative initiatives (for example, powers to collect taxes from third parties, obtain liens over assets, require tax clearance for the granting of government contracts, etc.) can improve the level of debt collection.

6. IT/Online Services. Electronic filing initiatives, make it easier for taxpayers to file returns, reduce the revenue bodies' processing costs, and expedite refunds to taxpayers. The share of e-filing is used as indicator for the level of investment in information technology. E-filing (and online services more generally) can help reduce taxpayers' information requirements, it facilitates and reduces the cost of tax payments, it facilitates the sharing of information and guidance to taxpayers, it reduces the volume of routine processes (through automatic verification and pre-filing of tax returns, etc.

To arrive at a quantifiable framework, data for the different indicators of tax administration performance were compiled and scores were assigned to each of the indicators in a scale from 0-10. Scores for each performance areas (and total) take averages of the respective indicators.

Unified Body	Number of taxes centrally administered (share of total), using the following seven categories: PIT, SSC, CIT, VAT, excises, real estate, others).
Autonomy	Number of areas with independent authority (share of total), using nine categories: tax rulings, remit penalties, design internal structure, re-allocate budget, fix levels/mix of staff, set service standards, influence staff recruitment criteria, hire and dismiss staff, and negotiate staff pay levels independently.
Functional Structure	Number of dedicated units (share of total), using the following seven categories: high net worth individuals, large taxpayer division/unit, dedicated processing centers, debt collection, tax fraud, dedicated disputes, and full in-house IT function.
Large Taxpayers Unit Staff	Number of staff in the Unit over the number of taxpayers administered.
Risk Management Approach	Share of activities in total, using the following eight categories: formal risk management process in place, tax gap estimates, random audits, co-operative compliance model used, computer-based system support.
Identified Compliance Risk Areas	Number of indicators (share of total), using the following categories: profit shifting/transfer pricing, other tax avoidance schemes, VAT fraud, other tax fraud hidden economy, evasion or illegal activities, other evasion, unpaid tax debts, and non-filing of returns.
Staff with a Degree	Number of staff (share of total) with a university degree.
Staff Retention	Inverse of the indicator on staff attrition, calculated as number of staff departures over average staffing level (where the average staffing level equals opening staff numbers + end-of-year staff numbers/2)
Verification and Debt Collection Function	Number of staff (share of total) assigned to verification (including audit), and debt collection functions.
VAT Refunds	Share of VAT refunds out of gross VAT collection.
Value of Completed Actions	Value of completed actions in percent of net tax collections.
Low Tax Debt	Inverse of total end-year tax debt in percent of net revenue collection for the fiscal year
E-Filing	Share of all tax returns (for VAT, CIT and PIT) e-filed during the fiscal year.

Annex VIII. Description of the Political Economy Variables

Variable Name	Description	Source
Constraints on executive	This variable refers to the extent of institutionalized constraints on the decision-making powers of chief executives, whether individuals or collectivities. Such limitations may be imposed by any "accountability groups."	Political Regime Characteristics and Transitions, Center for Systemic Peace, Polity IV Project,
Accountability	This is a measure of how responsive government is to its people. The points in this component are awarded on the basis of the type of governance enjoyed by the country in question.	World Bank, International Country Risk Guide (ICRG)
Quality of bureaucracy	This reflects the extent to which the bureaucratic apparatus is autonomous from political pressure and have an established mechanism for recruitment and training.	World Bank, International Country Risk Guide (ICRG)
Corruption in politics	This is an assessment of corruption within the political system. While this measure takes into account financial corruption, it is more concerned with actual or potential corruption in the form of excessive patronage, nepotism, job reservations, 'favor-for favors', secret party funding, and suspiciously close ties between politics and business.	World Bank, International Country Risk Guide (ICRG)

ABBREVIATIONS

ALB	Albania
AQR	Asset Quality Review
AUT	Austria
BGR	Bulgaria
BiH	Bosnia and Herzegovina
BIS	Bank for International Settlements
BLR	Belarus
CEE	Central and Eastern Europe
CESEE	Central, Eastern, and Southeastern Europe
CHF	Swiss franc
CIS	Commonwealth of Independent States
CZE	Czech Republic
DEU	Germany
ECB	European Central Bank
EIB	European Investment Bank
EM	Emerging Market
EMBIG	Emerging Markets Bond Index Global
EPFR	Emerging Portfolio Fund Research
EST	Estonia
EU	European Union
FIN	Finland
FDI	Foreign direct investment
FRA	France
FX	Foreign exchange
GBR	United Kingdom
GDP	Gross domestic product
GRC	Greece
HICP	Harmonised Index of Consumer Prices
HRV	Croatia
HUN	Hungary
ICR	Interest coverage ratio
IMF	International Monetary Fund
ITA	Italy
LTU	Lithuania
LVA	Latvia
LUX	Luxembourg
MDA	Moldova
MKD	Former Yugoslav Republic of Macedonia
MNE	Montenegro
NPL	Nonperforming loan
OECD	Organisation for Economic Co-operation and Development
PMI	Purchasing Managers Index
POL	Poland
REI	Regional Economic Issues
ROU	Romania
RUS	Russia
SA	Seasonally adjusted
SEE	Southeastern Europe
SRB	Serbia
SVK	Slovak Republic
SVN	Slovenia
TFP	Total productivity factor
TUR	Turkey
UKR	Ukraine
UVK	Kosovo
WEO	World Economic Outlook

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