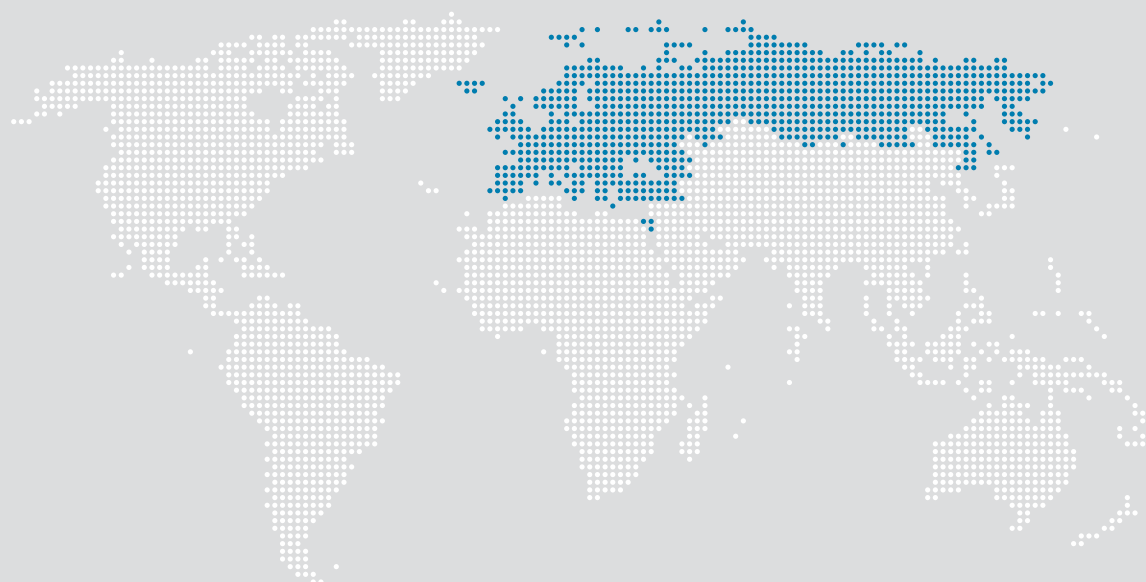


Regional Economic Issues

Central, Eastern, and Southeastern Europe Reconciling Fiscal Consolidation and Growth

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NOV 15

Regional Economic Issues

November 2015

Central, Eastern, and Southeastern Europe Reconciling Fiscal Consolidation and Growth

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Country Coverage and Codes

Central, Eastern, and Southeastern Europe (CESEE) refers to Albania, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Kosovo, Latvia, Lithuania, Macedonia, Moldova, Montenegro, Poland, Romania, Russia, Serbia, 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 🇸🇯);

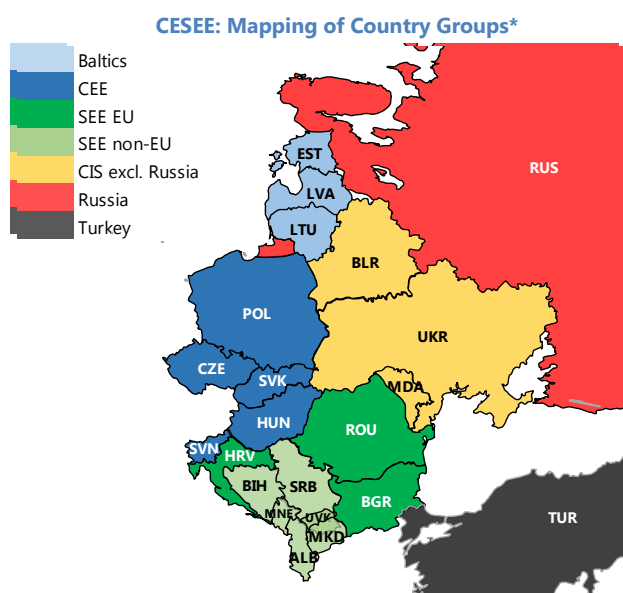
Commonwealth of Independent States (CIS) (shown in **yellow**): Belarus (BLR 🇧🇪), Moldova (MDA 🇲🇩), Russian Federation (RUS 🇷🇺, also in **red** when shown separately), Ukraine (UKR 🇺🇦);

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 PPP GDP weights of countries in sub-groups in 2014.



* / 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.



Reconciling Fiscal Consolidation and Growth

November 13, 2015

EXECUTIVE SUMMARY

Much of the Central, Eastern, and Southeastern Europe (CESEE) is growing at a healthy pace, while Russia and other CIS economies are facing significant economic challenges. The region as a whole is expected to return to positive growth next year. Overall, activity in the region is set to contract by 0.6 percent in 2015 and expand by 1.3 percent in 2016. This is little changed from the spring 2015 projections, but the risks have shifted to the downside:

- *Central and Eastern Europe (CEE), Turkey, and most of the Southeastern European (SEE) countries are expected to maintain solid, largely domestic-demand-driven growth in 2015–16. There are also some external tailwinds, such as lower oil prices and improved euro-area growth prospects. Furthermore, several CESEE European Union (EU) member states benefited from a temporary boost to investment from a sharp increase in utilization of EU Structural and Cohesion Funds (SCFs). In contrast, growth has softened in the Baltics due to weaker demand from the CIS.*
- *The economies of Russia, Ukraine, and other CIS countries will contract this year, with some stabilization expected in 2016. Russia continues to adjust to low oil prices and Western sanctions, but is expected to remain in recession in 2016. Ukraine is projected to return to positive growth next year, despite multiple challenges related to ambitious reforms, significant macroeconomic adjustment, and economic dislocations in the eastern part of the country.*
- *And the balance of risks has shifted to the downside. New risks to trade and capital flows stemming from a possible further slowdown in major emerging markets (notably, in China) as well as the ongoing refugee crisis in Europe are the main additions to long-standing risks.*

The key policy challenges are broadly similar from those discussed in the Spring 2015 *Regional Economic Issues* report. Supporting domestic demand, addressing crisis legacies, rebuilding buffers against external shocks, and improving the business environment to boost investment and long-term growth remain important. Country-specific priorities depend on how far along these economies are in the postcrisis adjustment and their exposure to external risks.

- *Where the recovery is well advanced, the policy priorities need to increasingly shift toward the medium term, including rebuilding fiscal buffers and continuing with reforms to improve the business environment and address structural weaknesses. This is not to deny that there is still a lot of uncertainty about the strength of global recovery that, domestically, inflation is still too low in many CESEE economies, and that the key crisis legacies—high nonperforming loans (NPLs) and debt overhangs—still need to be addressed in some countries (notably, in SEE).*

- *For economies that are in recession*, the key challenge is to steer the adjustment to terms-of-trade and other shocks with a view to supporting weak internal demand and reducing high inflation.
- *Countries vulnerable to external shocks*—such as those with large external financing needs, weak fiscal positions, or high dependence on commodity exports—need to be prepared to deal with market pressures by using exchange rate flexibility as a shock absorber alongside macro-prudential policies to contain the buildup of financial sector risks and gradually rebuild foreign exchange reserves if they are below prudent levels.

Large fiscal challenges remain in CESEE, despite progress with consolidating the fiscal stance and improving the quality of budgets in recent years. Can CESEE countries reconcile fiscal consolidation with growth? The analysis presented in this *Regional Economic Issues* report offers some insights:

- **Most CESEE economies entered the 2008–09 global financial crisis with growth-unfriendly budgetary structures relative to their peers.** On the *spending side*, budgets were characterized by high public consumption and large unproductive transfers. On the *revenue side*, they were characterized by a disproportionate reliance on labor taxes, notably social security contributions. Structures reflected a mixture of legacy issues from the economic transition of the 1990s, an aging population burdening social security systems, and an orientation based on Advanced Europe, which sustains similar budgetary structures but with support from much higher per capita incomes.
- **Budgets have generally improved since the global financial crisis**, when severe pressure on many CESEE budgets forced fiscal adjustment. On the *revenue side*, many countries managed to shift the tax burden from taxes harmful to growth—such as the corporate income tax (CIT)—to more neutral forms of taxation—such as the Value-Added Tax (VAT). On the *spending side*, countries with access to EU SCFs often managed to avoid large cuts in public investment. Large fiscal savings came instead from reforming entitlement programs and reducing public consumption.
- **Fiscal consolidation in CESEE has not yet run its course, with sizable adjustment needs remaining, especially in SEE.** To safeguard or improve the quality of budgets during consolidation, the focus should be on reducing unproductive transfers and further reforming entitlement programs, including public pension systems. Restructuring public employment may also be called for, especially where the public sector wage bill is high, either because of excessive employment levels or disproportionately high public sector wages. On the revenue side, policymakers should focus on achieving a sizable part of the adjustment through indirect taxes, and consider the introduction or strengthening of carbon and property taxes.
- **For countries that do not have urgent fiscal consolidation needs, fiscal reform is still called for to enhance the quality of their budgets**, including by shifting taxation toward indirect taxes, and increasing the efficiency of health and infrastructure expenditures.

Approved by
Poul Thomsen

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I. RECENT DEVELOPMENTS, OUTLOOK, AND RISKS

While a modest contraction in activity is expected this year for the Central, Eastern and South-eastern Europe (CESEE) as a whole, this reflects widely divergent country-specific developments. Most economies are growing at a relatively healthy pace, with the exception of Russia and the rest of the CIS, which are in recession. CESEE growth is expected to turn positive in 2016, but risks are tilted to the downside. Regional financial markets have, generally, weathered well the recent bouts of market volatility stemming from worries about Grexit, slowing activity in China, and falling commodity prices.

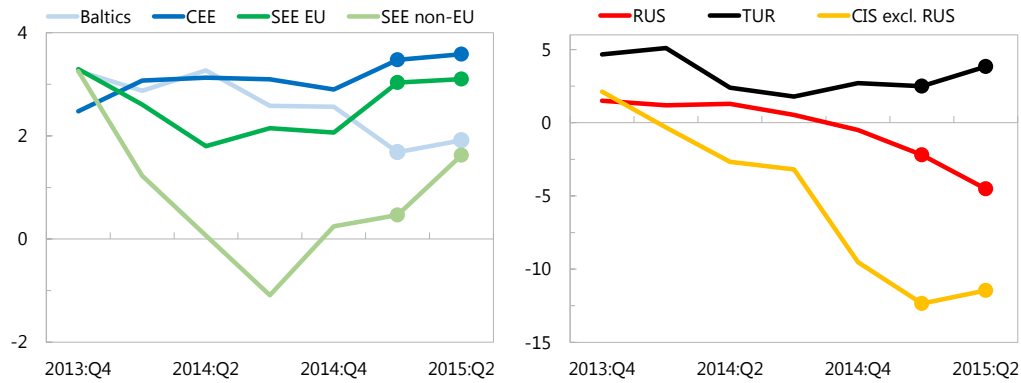
A. Recent Developments

In the first half of 2015, economic developments continued to differ widely across CESEE countries (Figure 1.1):

- *In Central and Eastern Europe (CEE) and Southeastern European EU members (SEE EU) the recovery, generally, proceeded at a solid pace.* The main tailwinds were stronger domestic demand, lower oil prices, improved euro area growth prospects following the launch of the ECB's quantitative easing (QE), and increased absorption of the EU Structural and Cohesion Funds (SCFs). Both CEE and SEE EU also benefited from improved competitiveness vis-à-vis the rest of the world, as their currencies weakened along with the euro.
- *Most SEE non-EU economies, except Serbia, also saw relatively strong growth.* In contrast, Serbia is only gradually emerging from the recession caused by the devastating floods in 2014.
- *Growth in the Baltics has softened* this year due to larger-than-expected spillovers from the recession in Russia and other CIS countries.
- *In Turkey, growth remained robust,* in the face of downside risks to investor confidence stemming from political uncertainty and elevated corporate debt.
- *Russia and the rest of the CIS are in recession.* The Russian economy contracted due to a combination of continued Western sanctions, low oil prices, and structural weaknesses. The recession deepened in Ukraine, reflecting declining activity in the eastern conflict zone and ongoing macroeconomic adjustment. Russia's recession has had a negative effect on activity in other CIS countries through the trade and remittances channels and via confidence effects on consumption and investment.

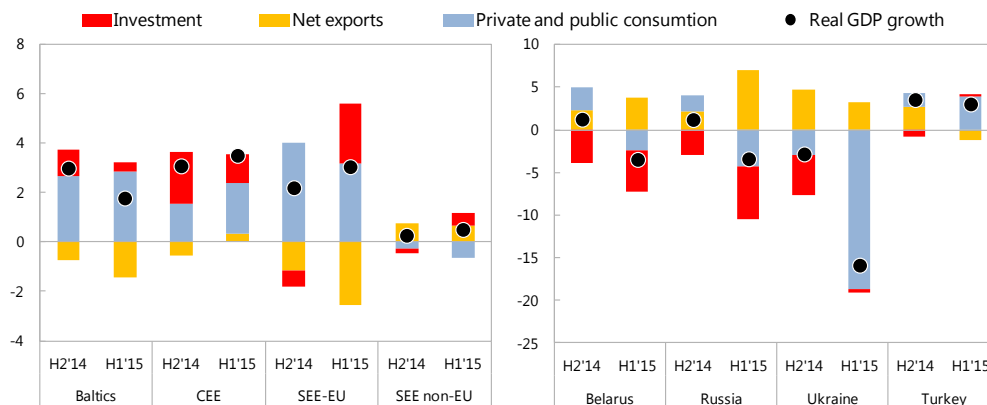
Domestic demand was generally robust outside the CIS, with investment growth supported by greater absorption of EU SCFs. Private consumption remained buoyant across CESEE EU countries and Turkey (Figure 1.2), on the back of lower oil prices and favorable employment and income dynamics. Investment surged in SEE EU countries and remained a major growth factor in CEE EU, driven by the sharp acceleration in the absorption of SCFs before the pending deadline for use of budgeted amounts for 2007–13 (Box 1.1). In contrast, consumption and investment in the CIS declined in response to worsening terms of trade, tighter credit conditions (Figure 1.3), and strong inflationary pressures (Figure 1.6).

Figure 1.1. CESEE: Quarterly GDP Growth (Percent, year over year)



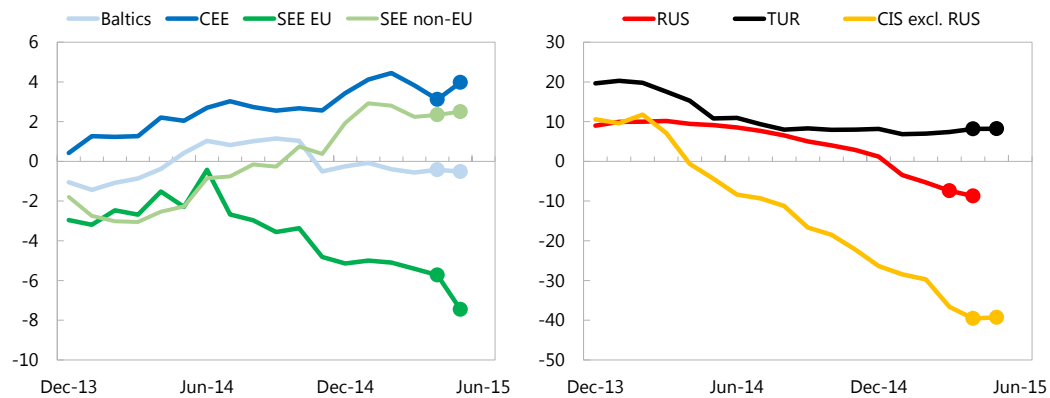
Sources: Haver Analytics; and IMF staff calculations Note: CESEE = Central, Eastern, and Southeastern Europe; CEE = Central and Eastern Europe; SEE = Southeastern Europe; CIS = Commonwealth of Independent States.

Figure 1.2. CESEE: Contributions to Real GDP Growth (Percent, year over year)



Sources: Haver Analytics; and IMF staff calculations Notes: CESEE = Central, Eastern, and Southeastern Europe; Semi-annual data constructed as the average of the respective quarterly data.

Figure 1.3. CESEE: Real Domestic Bank Credit to Private Sector
(12-month growth rates net of foreign exchange valuation effects and CPI-deflated, percent)



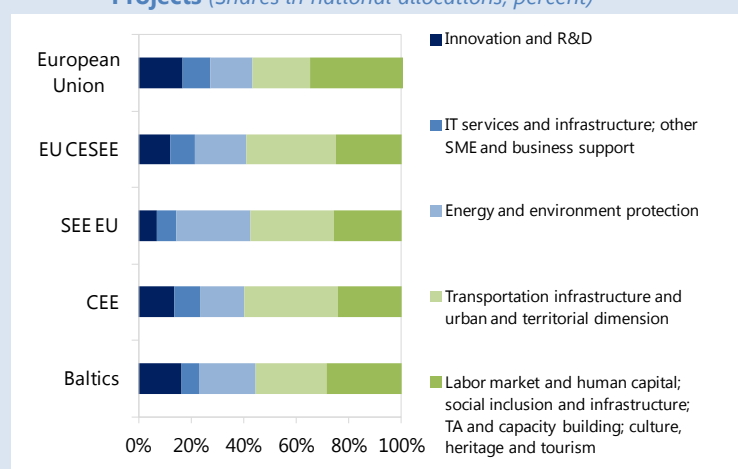
Source: EBRD, ECB, Haver Analytics, IMF International Financial Statistics, and IMF staff estimates. Notes: CESEE = Central, Eastern, and Southeastern Europe; CEE = Central and Eastern Europe; SEE = Southeastern Europe; CIS = Commonwealth of Independent States; CPI = Consumer Price Index.

Box 1.1. CESEE: EU Structural and Cohesion Funds ^{1/}

The European Union's (EUs) Structural and Cohesion Funds (SCF) amount to about one-third of the total EU budget (192.6 billion euro over 2014–20). Their main objectives are to promote convergence, regional competitiveness and employment, and thus to improve the functioning of the internal EU market. All EU countries are beneficiaries, with lower income CESEE countries receiving proportionately bigger shares relative to their GDP. SCFs are not “free” for the recipients. In addition to the safeguards offered by the European Commission (EC) oversight, national authorities provide around 15 percent co-financing to ensure ownership, depending on the operational program. Certain costs, for instance most land purchases and value added taxes on inputs, have to be fully covered by national authorities, at times raising the effective co-financing to 40–50 percent. Moreover, operating costs, such as those for waste management projects, are fully borne by the beneficiary.

There are three SCFs: (1) the **European Fund for Regional Development**, which is tasked with modernizing economic structures (e.g., improve public administration), infrastructure (e.g., improve metro systems), and support R&D and innovation, environmental protection (e.g., solar and wind energy, waste water and sewage projects), etc.; (2) the **European Social Fund**, which focuses on increasing worker and enterprise adaptability and employment participation, and reinforcing social inclusion, among other areas; and (3) the **Cohesion Fund**, which supports regions with per capita gross national income of less than 90 percent of the EU average, in the transport, environment and energy sectors. The allocations from the first two funds are guided by the principle of additionality, under which only new projects can be financed.

Breakdown of 2007–13 Structural and Cohesion Funds by Types of Projects (Shares in national allocations, percent)



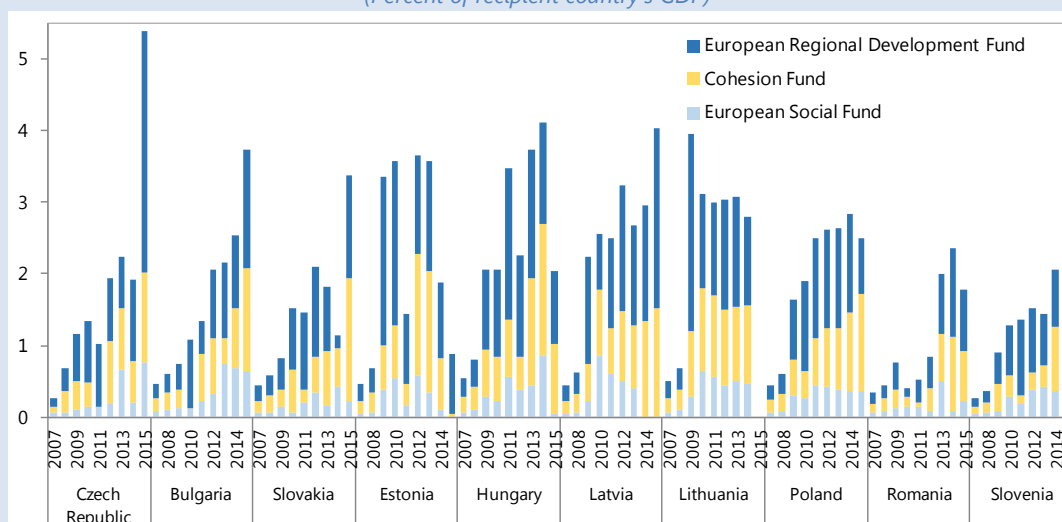
Sources: European Commission and IMF staff estimates.

The funds are primarily spent on public and private investment, but also on goods and services. CESEE countries use a bigger share of the SCF allocations, relative to the average for the EU, for transportation infrastructure and environmental projects (see Figure above). Both CEE and SEE EU countries invest less in R&D than their EU peers.

SCF allocations are budgeted over 7-year “program periods” (e.g., 2007–13; 2014–20). Funds that are not drawn within the pertinent deadlines (i.e., two years (N+2) or three years (N+3)) are, generally, lost for recipients. SCFs are administered by national authorities under close monitoring by the EC. Following the negotiation of country allocations, a “partnership agreement” is signed between the EC and member states for each program period. This is then followed by more detailed “operational programs” that include objectives and “priority axes”. National authorities choose the individual projects, with the EC monitoring all aspects of the process, including procurement procedures, IT systems, audit practices, etc. There is typically under-execution of SCF absorption in the beginning of each program period (figure below). Besides some advance payments at the start of each program period, reimbursements are made upon the presentation of invoices vetted and ultimately certified initially by the national certifying authority and then by the EC. If proper procedures are not followed, “irregularities”, such as administrative oversights, violations of public procurement regulations, or outright fraud, may be identified. In cases of serious irregularities, the reimbursement of EU Funds can be suspended. Confirmed irregularities also trigger an adjustment in EU co-financing, ranging from a haircut to a full charge back to governments. The EU grants, however, may not always be fully lost, since they can be reallocated to other projects, if the national authority has “over-booked” the pertinent program.

Czech Republic, Bulgaria and Slovak Republic have sharply increased the absorption (ratio of EC pay-outs relative to budget allocation) **of 2007–13 funds in the run-up to the pending deadline for their use.** In the case of Romania and Hungary, EC payouts were not as strong in the first half of the year. In Hungary, this was due to the suspension of some operational programs, with the burden of payment temporarily shifted to the national budget. In Romania, there is a discrepancy in the timing of recording of disbursements between the EC data and fiscal accounts, as the former are on a cash basis and the latter are on a commitment basis. Fiscal data point to an increase in absorption in the first half of 2015. For all countries, the absorption in the second half of the year is expected to be even stronger, as countries strive to reach certified payout rates of 95 percent. On the other hand, Lithuania and Estonia have already absorbed most of the available funds from the 2007–13 program period.

CESEE: Payouts from EU Structural and Cohesion Funds under 2007–13 Program
(Percent of recipient country's GDP)



Source: European Commission and IMF staff estimates. Note: 2015 data is until June and are divided by half of projected 2015 GDP.

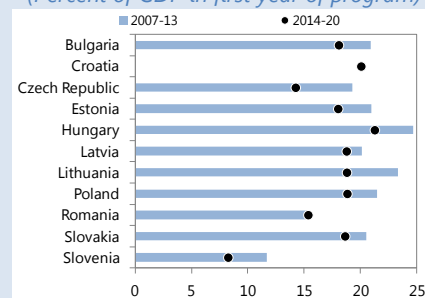
The hastened absorption could, however, adversely affect growth and fiscal positions:

- Rushed projects may be more prone to irregularities, which may result in larger fiscal burden in 2015–16.
- If they were to materialize, recently floated ideas about retroactively providing EU funding for projects that originally had been fully domestically financed would create risks for use of the newly created fiscal space for unproductive current spending.
- Since efforts have been focused on the previous seven-year program period, preparations for the new period (2014–20) have been delayed in some countries. This may cause a slump in absorption of SCFs in 2016, adversely affecting growth.
- Priority may have been given to shovel-ready projects (e.g., amelioration of urban public spaces) rather than to ones that could better enhance potential output.
- The 2014-20 budget envelope is 10 percent larger than the 2007-13 one in nominal terms, but significantly smaller in percentage of the recipient's GDPs (figure). Therefore, the impact of SCFs on growth will likely progressively decline, unless more efficient use of the funds will compensate for their smaller relative size.

These potential downsides are likely to be less of an issue in the Baltics, which have demonstrated better preparedness to absorb SCFs in a more timely manner.

CESEE: EU SCF Allocations

(Percent of GDP in first year of program)



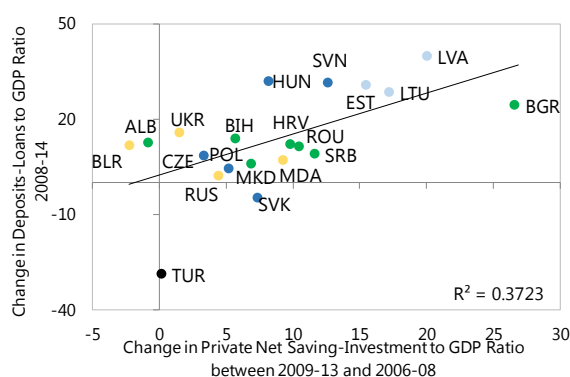
Source: European Commission and IMF staff estimates.

^{1/} This box was prepared by Plamen Iossifov and Tonny Lybek.

Crisis legacies—private sector debt overhangs and high nonperforming loans (NPLs)—continue to weigh on economic activity and credit growth in parts of the region.

While many countries have made significant adjustment – as reflected in a notable improvement in the private sector net saving-investment balances and a decline of banking systems’ loan-to-deposit ratios – the balance-sheet repair is not yet fully completed (Figure 1.4). The Spring 2015 REI (IMF, 2015b) highlights the persistent debt overhang in several SEE and CIS economies (notably, in Bulgaria, Croatia, and Ukraine). Data for 2015:Q1 show that non-financial corporations’ debt-to-equity ratios in Croatia, Latvia, Bulgaria, Romania, and Slovenia are still well above the euro area average. Reflecting weaknesses in private balance sheets and slow pace of distressed debt resolution, the aggregate NPL ratios remain persistently high, exceeding 10 percent in many SEE and CIS countries (Figure 1.5).

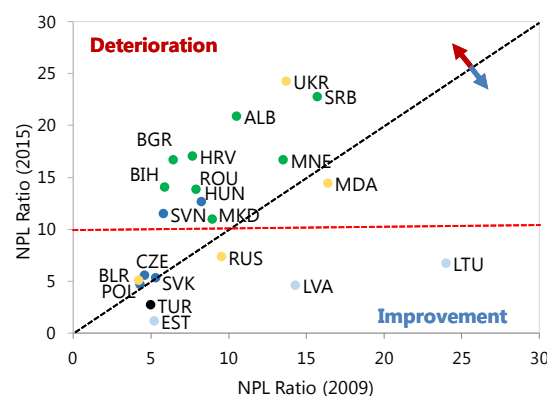
Figure 1.4. CESEE: Changes in Domestic Deposit-Loan Gaps and Private Savings-Investment Balances (Percent of GDP)



Source: Eurostat, Central Bank of Russia, Orbis, and Fund staff calculations.

Note: Data are not consolidated within the corporate sector. Debt includes loans and securities. For Russia and Turkey, the ratios are calculated from firm-level data.

Figure 1.5. CESEE: Nonperforming Loan Ratios (Percent)



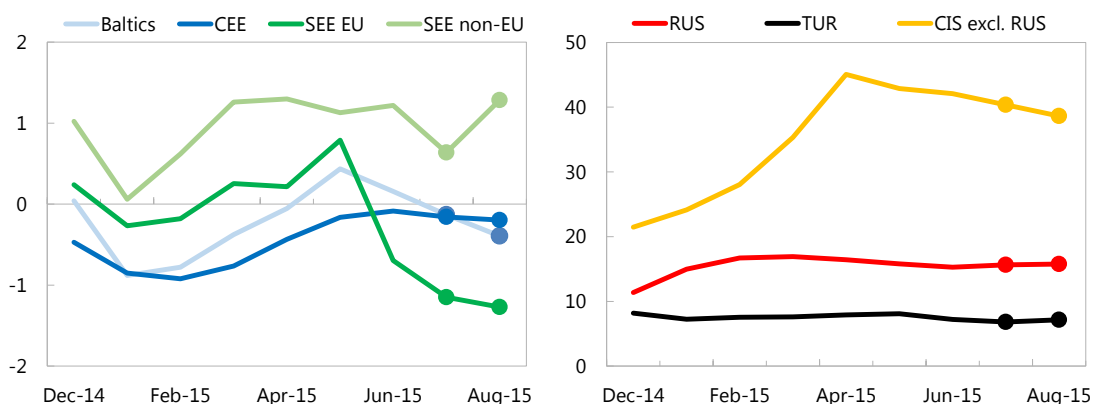
Sources: IMF FSI database

Note: NPL ratio is the ratio of gross nonperforming loans to total loans. The data for 2015 are either as of 2015:Q2 or the latest available.

Inflation trends remain divergent between CEE/SEE and CIS/Turkey. The prolonged disinflation across Europe reversed course in 2015:Q1, but the reflation has since stalled, as oil prices fell again (Figure 1.6). In contrast, inflation has remained high or accelerated further in Turkey and CIS countries, on the back of expansionary policies (Turkey) and capital outflow pressures that weakened domestic currencies.

Inflation expectations in SEE and CEE EU countries have stabilized at historically low levels (Figure 1.7). The recent fall in inflation expectations in SEE and CEE EU countries —for which comparable data are available—cannot be fully explained by their normal response to falling oil prices (see Box 1 in IMF (2015b) for details). Thus far, this overshooting does not appear to have impacted real activity, but renewed disinflationary pressure would raise concerns of possible unanchoring of inflation expectations.

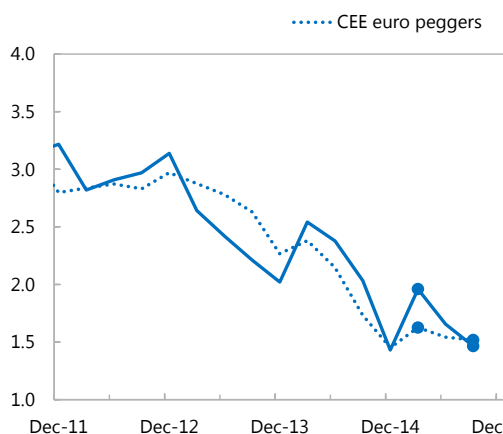
Figure 1.6. CESEE: Headline Inflation (Percent, year over year)



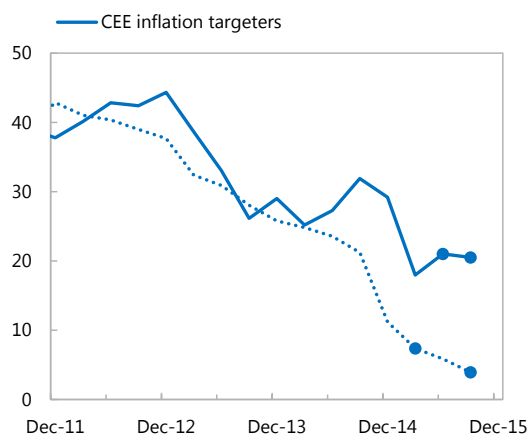
Sources: Haver Analytics; IMF, national authorities; and IMF staff calculations.
 Note: CESEE = Central, Eastern, and Southeastern Europe; CEE = Central and Eastern Europe; SEE = Southeastern Europe; CIS = Commonwealth of Independent States.

Figure 1.7. CEE and SEE EU: Inflation Expectations

Consensus forecasts of next year's inflation (Percent)



Consumer expectations of average inflation over the next 12 months (Index)



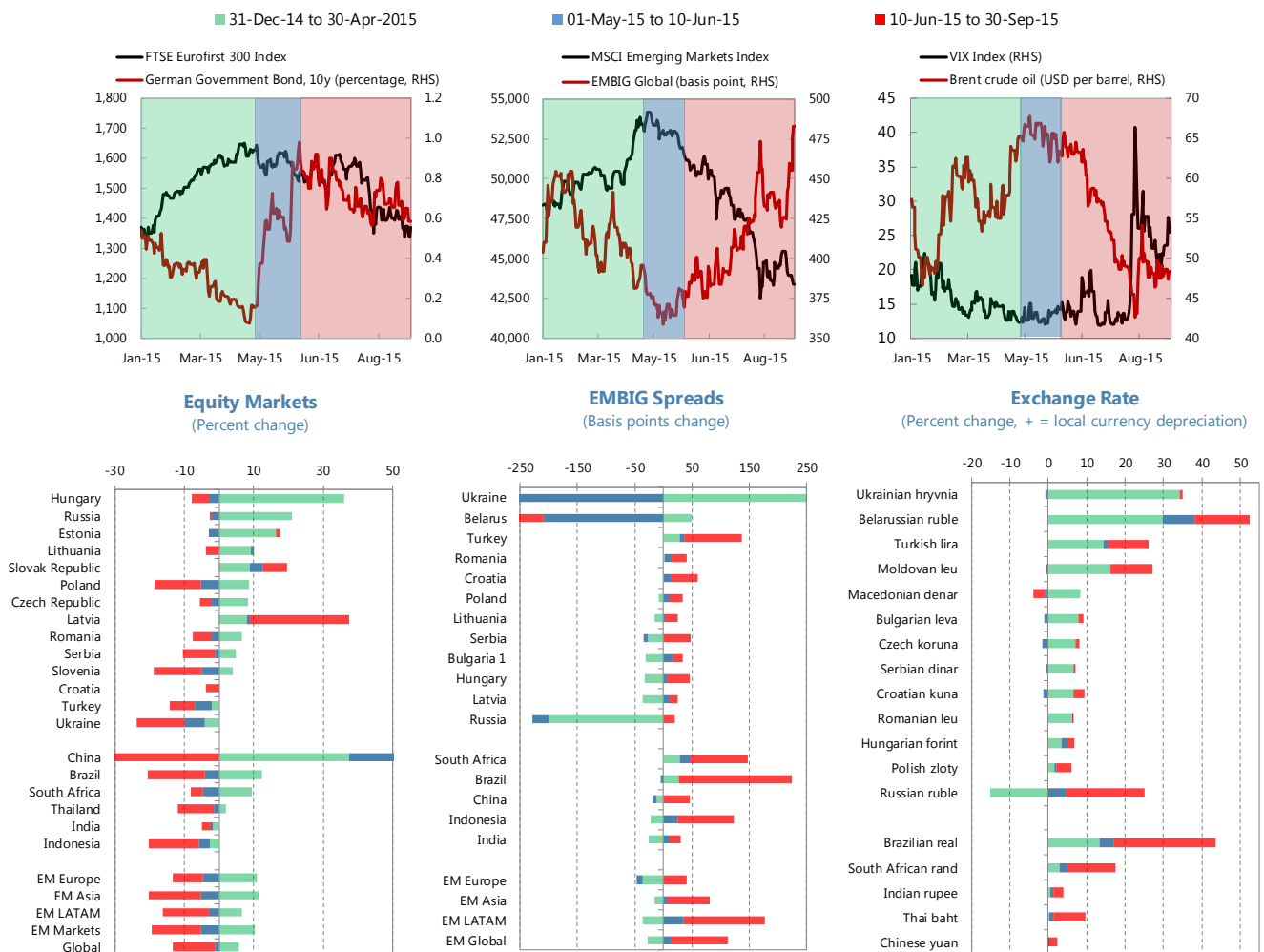
Sources: European Commission and Consensus Economics Forecasts.
 Notes: Euro peggers – Bulgaria and Croatia; Inflation targeters - Czech Republic, Hungary, Poland, and Romania; It is generally believed that firms form their expectations using professional forecasters' projections, whereas households tend to follow the general sentiment reflected in survey results. Consumer inflationary expectations index reflects survey responses to the question on price trends over next 12 months. It is calculated as + 1* ("Percentage thinking it will rise a lot")+ 1/2 * ("Percentage thinking it will rise moderately"- 1/2 * ("Percentage thinking it will stay about the same") - 1 * ("Percentage thinking it will fall").

CESEE financial markets have weathered well the bouts of market volatility stemming from worries about Grexit, slowing activity in China, and falling commodity prices. Across the three periods discussed below, CESEE have generally performed better than other EM regions:

- *The ECB's QE boost:* since the start of the year, equity and bond markets rallied across much of the region, mirroring developments in the euro area (Figures 1.8). While the ECB's QE raised investor confidence, net financial flows into CESEE markets were negative in 2015:H1 (Figure 1.9). In the case of EU member states, however, these outflows were more than offset by the inflows of EU funds through the capital account (Figure 1.9).

- Grexit worries and an increase in German bund yields:* The re-emergence of market worries about Grexit in May and a correction in German bond yields had little impact on regional financial markets, including SEE countries with sizable trade or financial links with Greece (Figures 1.8). The subsidiaries of Greek banks operating in the SEE countries experienced some deposit outflows, which remained in the domestic banking system (see below).
- Concerns about China slowdown and commodities sell-off:* During July-September 2015, equity markets across the region posted modest losses, while sovereign spreads widened by less than 50 basis points in most countries (except Turkey), and only some currencies (Turkey, Russia and other CIS countries) saw depreciation pressures (Figure 1.8). The spike in global risk aversion (VIX) in the last week of August triggered the largest outflows from mutual funds investing in CESEE since the May 2013 “taper tantrum” (Figures 1.8 and 1.10). The outflows were largest from bond funds.

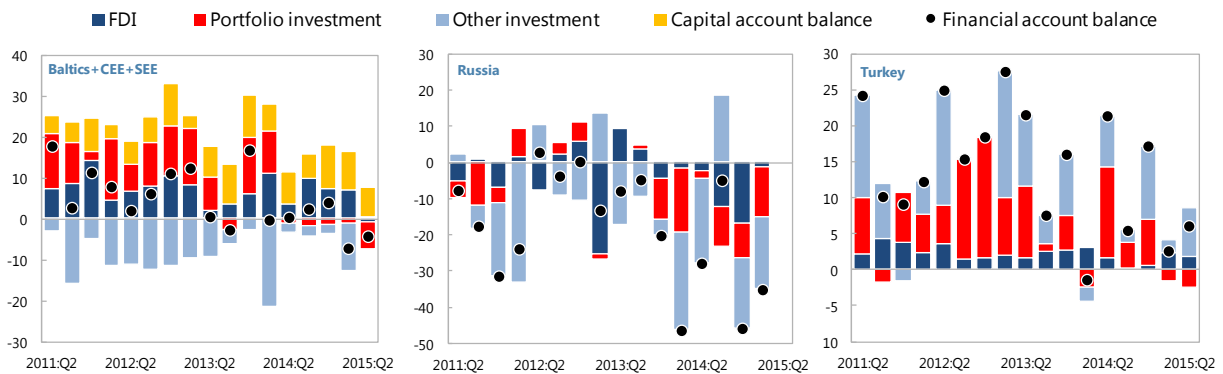
Figure 1.8. Oil price and Financial Market Developments



Source: Bloomberg. Note: CESEE = Central, Eastern, and Southeastern Europe. ¹ Euro bond spread. Exchange rates are vis-à-vis USD.

What explains the resilience of the CESEE financial markets? One reason is that trade links of the CESEE region with China are relatively small (Box 1.2). In addition, the impact of China's rebalancing on commodity prices is a positive terms-of-trade shock for most CESEE countries, in contrast with emerging market commodity exporters (such as Brazil, Indonesia, and Russia). At the same time, most CEE and SEE countries are in a different phase of the credit cycles compared with other emerging markets. Many CEE and SEE countries have made notable progress in private sector deleveraging —via improvements in the private saving-investment balances—that has reduced their external vulnerabilities (Figure 1.11). This makes them more resilient to changes in international investor sentiment. That said, these countries are not immune to a more persistent rise in global risk aversion, which could result in sustained capital outflows, with a greater impact on countries with a larger share of foreign investors in their local markets (such as Poland and Hungary).

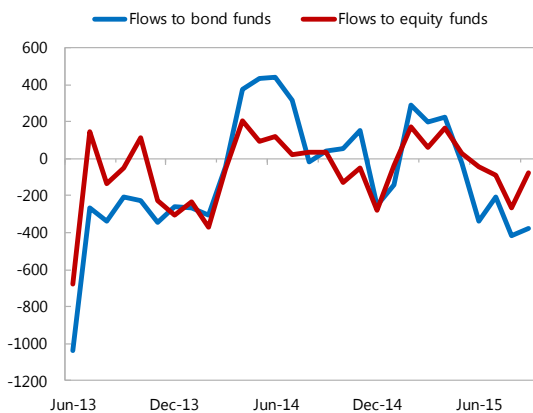
Figure 1.9. CESEE: Net Capital and Financial Account Flows (Billions of US dollars)



Sources: Haver Analytics and IMF staff calculations.

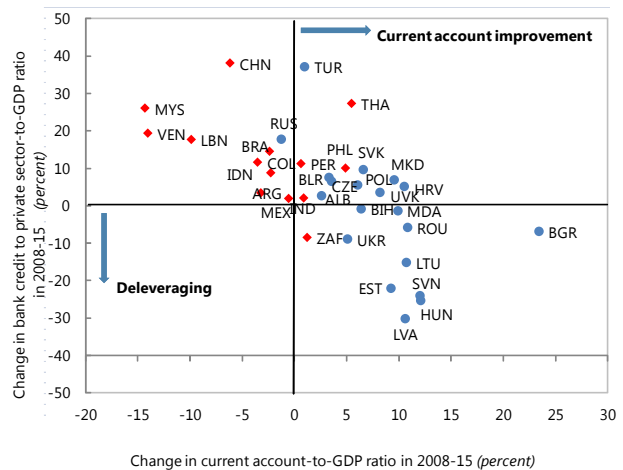
Notes: CEE = Central and Eastern Europe; SEE = Southeastern Europe; Capital account, which mostly comprises of EU Structural and Cohesion Funds, is shown only in the first panel.

Figure 1.10. Flows into Foreign Exchange-Traded and Mutual Funds Investing in Emerging Europe (Million U.S. dollars)



Source: Haver Analytics, EPFR.

Figure 1.11. CESEE: Post-Crisis Private Sector Adjustment (Percent)



Source: WEO, IFS

Box 1.2. CESEE: Implications of a Slowdown in China and Major Emerging Markets ^{1/}

The direct trade links between CESEE and China are small. The share of domestic value added from the region consumed by China is less than 2 percent of CESEE countries' GDP (see Figure). Russia and those CESEE economies that are more integrated into the global supply chains (the Czech and Slovak Republics, and Hungary) are most exposed. This suggests that—in the absence of any impact of China's slowdown on investor confidence and risk premiums—the impact on CESEE would be small.

Model simulations of the transmission of China's growth slowdown to CESEE via the real channel—through both direct and indirect channels—confirm that the impact is fairly small.

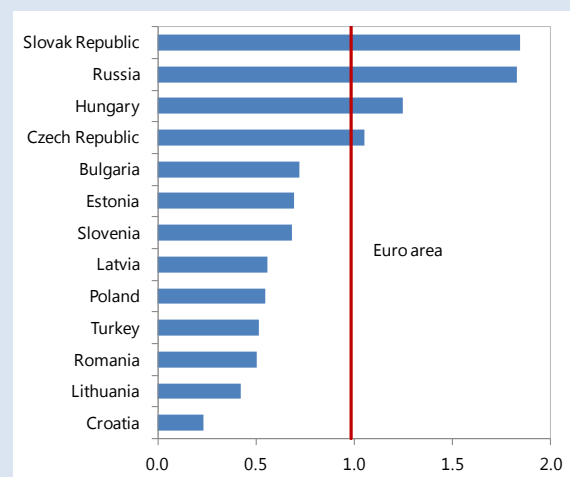
The IMF's Flexible System of Global Models (FSGM) used for this exercise is a multi-region, forward-looking, semi-structural model (Andrle, M., et. al., 2015). In the model, lower growth in China affects world growth through two channels. First, lower than expected investment and growth in China implies weaker exports for the rest of the world. Second, it implies weaker global demand for commodities and lower commodity prices (including oil and metals). The simulation assumes a weakening of Chinese growth by around 1.5 percentage points on average over the next five years (relative to the October 2015 WEO baseline), combined with yuan depreciation vis-à-vis the dollar by 10 percent and an increase in the Chinese risk premium by 100 basis points. All countries with policy space are assumed to use it to offset the shock. Model simulations show that the impact on CESEE countries would be relatively small (see Figure below). This is, importantly, due to the assumption that these countries have fiscal and in most cases monetary space to engage in countercyclical policies that counteract the impact of the shock.

Spillovers from a broader economic slowdown in emerging economies would be bigger, but manageable.

The October 2015 WEO (Scenario Box 1) presents a scenario that assumes a slower pace of catching-up and lower productivity growth, combined with a tightening of external financing conditions in large emerging economies (including in Russia and Turkey). Commodity prices fall and emerging market currencies depreciate in response to the growth slowdown and reversal of capital flows. The key results are as follows:

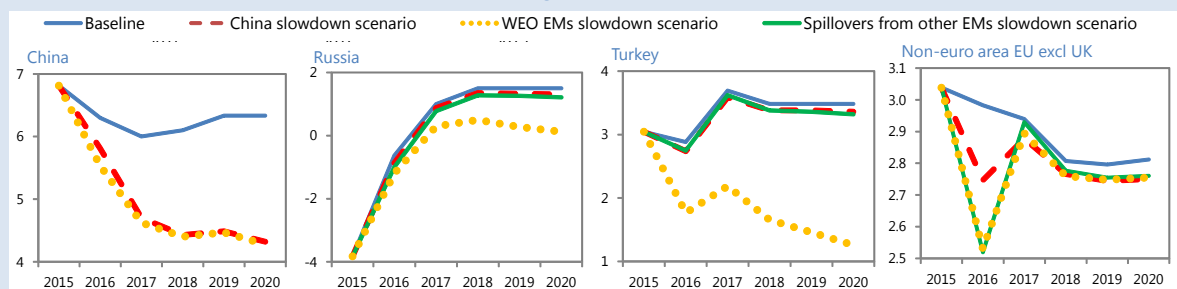
- The impact on smaller emerging economies in CESEE is double that under China-only slowdown, but is short-lived and small relative to the size of the assumed negative shock on large emerging markets.
- The substantially lower growth in Russia and Turkey compared to baseline under this scenario mostly reflects the assumed slowdown of their own potential growth, rather than spillover effect from China and other emerging economies. The spillovers
- to Russia and Turkey from a structural slowdown in the other emerging markets is of similar magnitude to that in non-euro area EU countries.

Figure. CESEE: Domestic Value-Added Embodied in Chinese Final Demand, 2011
(Percent of GDP of exporting country)



Source: OECD-WTO Trade in Value Added (TIVA) dataset.

Figure. CESEE: Simulations of Impact of China and EMs Growth Slowdown
(Real GDP growth rates, percent)



Source: IMF's Research Department Flexible System of Global Models.

Notes: Baseline real GDP growth rates are from the October 2015 WEO; **WEO EMs slowdown scenario**—assumes slower pace of catching-up and lower productivity growth, combined with a tightening of external financing conditions in large emerging economies (including in Russia and Turkey); **Spillovers from other EMs slowdown scenario**—same as the WEO EMs slowdown scenario, except that there is no structural slowdown in Russia and Turkey and CESEE countries do not benefit from flight-to-safety capital inflows from other emerging markets.

^{1/} This box was prepared by Plamen Iossifov, Susanna Mursula, Agustin Roitman, and Jiaie Yoo.

Some banks in SEE countries saw deposit outflows during the Greek crisis in late June/early July 2015. Greek-owned subsidiaries and branches have a significant presence in five SEE countries—Albania, Bulgaria, FYR Macedonia, Romania, and Serbia—holding 12-22 percent of total banking sector assets (see IMF (2015b) for details). In the immediate aftermath of the Greek referendum, some subsidiaries of Greek banks experienced deposits outflows, although those outflows were channeled to the rest of the domestic banking system. Prudential measures and enhanced monitoring that have been in place for some time, along with other actions by national central banks have helped enhance confidence and have proven effective in dampening the initial contagion. The situation has since stabilized but authorities should remain vigilant.

B. Outlook

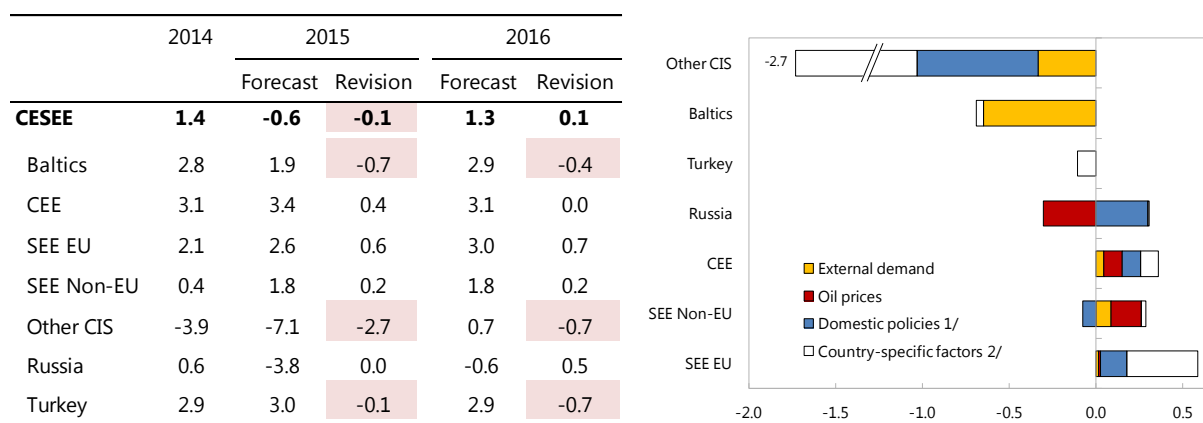
The 2015 GDP growth forecast for CESEE remains broadly unchanged since the May 2015 REI, but there are notable shifts in contributions of countries. Growth was revised up in CEE and SEE, kept unchanged in Russia and Turkey, and revised down in the Baltics and other CIS countries (Figure 1.12).

The revisions to 2015 GDP growth reflect both domestic and external factors (Figure 1.12):

- *External demand:* The ECB's QE, launched in March 2015, has supported economic activity in the euro area with positive effects on CEE. At the same time, the recessions in Russia and Ukraine had negative spillovers on the CIS and the Baltic countries.
- *Oil prices:* Oil prices returned to multi-year lows over the summer, extending their support of real disposable incomes in most CESEE, while dragging down growth in oil exporters (Russia).

- *Fiscal policy:* In Belarus, Bosnia and Herzegovina, and Kosovo, fiscal tightening is expected to weigh on growth. Delays in public investment projects will contribute to lower growth in Montenegro. In contrast, greater-than-expected absorption of EU funds by the EU countries outside the Baltics, will provide a boost to growth.
- *Domestic monetary and credit conditions:* Tighter credit conditions turned out to be more of a drag on growth in the CIS than previously expected, while monetary policy easing in Russia has counteracted the negative terms-of-trade shock.
- *Other country-specific factors:* The conflict in Eastern Ukraine has taken a larger-than-expected toll on growth of the Ukrainian economy. On the other hand, growth in EU SEE and CEE has benefited from improved domestic demand, supported by gains in consumer confidence and wage growth.

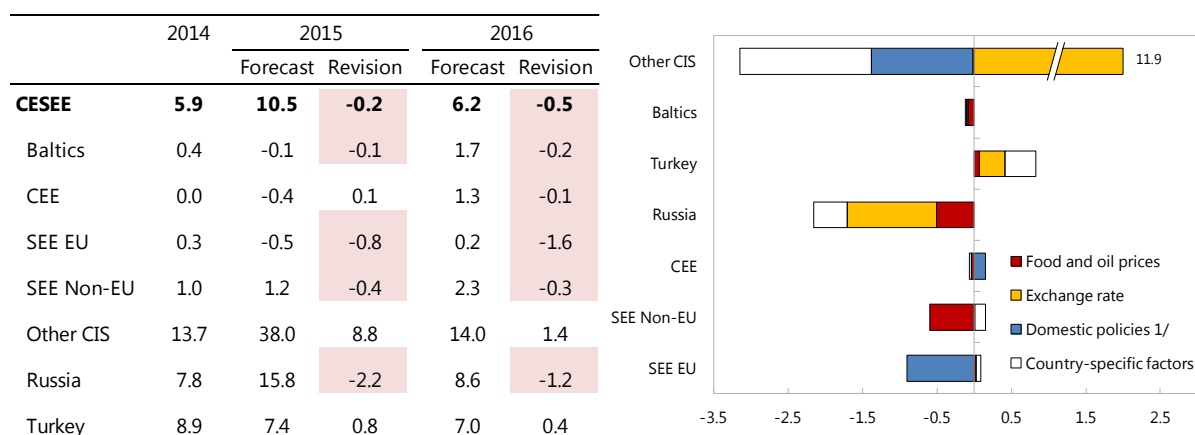
Figure 1.12. CESEE: Growth Forecasts and Revisions since May 2015 (Percent)



Source: IMF country teams' estimates.

Note: CEE = Central and Eastern Europe; EU = European Union; SEE = South- Eastern Europe; CIS = Commonwealth of Independent States; 1/ Domestic policies represent financial conditions and fiscal policy (including EU funds); 2/ Geopolitical and domestic political uncertainty and consumer confidence.

Inflation projections for 2015 have been revised down across CESEE since the Spring 2015 REI. The main disinflationary drivers have been the renewed weakness in oil prices (with higher transmission to consumer prices in the Baltics) and lower food prices in Russia and some SEE non-EU countries (Figure 1.13). Factors that contributed positively to inflation include the depreciation of domestic currencies in Turkey and CIS, excluding Russia, and the faster-than-anticipated closing of output gaps in CEE and SEE EU. Some country-specific factors, such as the sharp tightening of monetary policy in Belarus (which adopted monetary aggregate targeting) and the cut in the value-added tax on food in Romania, had a sizable downward impact on inflation in these countries. In Turkey, both inflation and inflation expectations remain elevated.

Figure 1.13. CESEE: Inflation Forecast and Revisions since May 2015 (Percent)

Source: IMF country teams' estimates.

Note: CEE = Central and Eastern Europe; EU = European Union; SEE = South-Eastern South-Eastern Europe; CIS = Commonwealth of Independent States; 1/ Domestic policies include output gap and changes in taxes.

In 2016, growth in many CESEE countries is expected to continue at a pace broadly similar to that in 2015, except in CIS and the Baltics (Figure 1.12 and Annex I). As the Russian economy stabilizes and contraction of activity slows and Ukraine's economy rebounds, neighboring economies will be seeing higher growth rates in 2016. By contrast, the anticipated normalization of the annual absorption rate of EU SCFs will likely slow growth in CEE (Box 1.1). The expected sustained growth in SEE EU countries is predicated on a successful rotation of investment expenditures from the absorption of EU funds into private investment. In the SEE non-EU countries, the IMF program with Serbia is forecast to help support a somewhat stronger rebound from the 2014 recession.

Inflation trends will continue to be bimodal in 2016 (Figure 1.13 and Annex II). The weakness of emerging market currencies amidst the ongoing rotation of financial sector risks from developed to emerging markets will keep inflation elevated in the CIS and Turkey, albeit on a downward trajectory. The significant downward revision in World Economic Outlook (WEO) medium-term projections of commodity prices are driving markdowns to inflation forecasts in the rest of CESEE, though inflation is generally expected to move closer to central bank inflation targets. The inertia in inflation expectations is contributing to the slow pace of change in inflation outcomes.

C. Risks

The balance of risks to CESEE growth has shifted from broadly neutral at the time of the Spring 2015 REI to being tilted to the downside. New risks to trade and capital flows stemming from a possible further slowdown in major emerging markets (notably, in China) as well as the ongoing refugee crisis in Europe are the main additions to long-standing risks. Table 1 highlights the key external downside risks and the IMF staff's assessment of the relative likelihood and impact of these risks on the region. They include:

- *Weaker-than-anticipated external demand:*
 - *From China:* While direct trade links between CESEE and China are relatively small, commodity exporters (Russia) and the most open CESEE economies (Czech Republic, Slovak Republic, and Hungary) would be most affected by a decline in the import demand from China through both direct and indirect channels (Box 1.2).
 - *From Russia:* CESEE countries with close links to Russia/CIS—notably, other CIS countries and the Baltic states—would be negatively affected if the recession in Russia deepens further¹.
 - *From the euro area:* Weaker-than-expected euro area growth would take a toll on the CEE and SEE EU, which are most closely integrated into pan-European global value chains. The potential negative fallout from the Volkswagen emissions scandal could be damaging for the Czech and Slovak economies, and to a lesser extent, for Hungary and Poland.
- *A surge in financial market volatility and a tightening in global financial conditions:* Given their high dependence on foreign funding and generally compressed risk premiums (Box 1.3), CESEE countries are vulnerable to tightening of external financing conditions that could be triggered by dislocations in advanced or emerging markets:
 - *Contagion from renewed selling pressures and volatility in emerging markets (including China),* on account of weaker emerging market fundamentals could result in capital outflows and liquidity strains on CESEE sovereigns and leveraged firms.
 - *A return of financial stress in the euro area* (e.g., on concerns about the Greek program) remains a risk, particularly for weaker subsidiaries of Greek banks in SEE, as well as other CESEE sovereigns and financial institutions that are reliant on funding from the euro area.
 - *A faster-than-expected tightening in the U.S. monetary policy or a persistent U.S. dollar appreciation* could trigger a reassessment of emerging market prospects. A stronger U.S. dollar and higher dollar borrowing costs may lead to balance sheet strains in countries with significant dollar-denominated debt, such as Russia, Turkey, Hungary and Ukraine.
- *Intensification of geopolitical tensions* (around Russia/Ukraine and the Middle-East) could prolong recessions in CIS countries and dampen investor sentiment in other countries (e.g., the Baltics, Turkey). The ongoing refugee crisis in Europe (Box 1.4) could put pressure on public finances, disrupt trade flows—as countries struggle to secure their borders—and cause political tensions and divisions within the European Union.

¹ See “The Spillover Effects of Russia’s Economic Slowdown on Neighboring Countries”, 2015 IMF Departmental Paper.

Table 1. CESEE: Regional Risk Assessment Matrix

Source of Risks	Likelihood	Impact
Lower-than-expected growth in advanced economies/the euro area	High	Medium
Further growth deceleration/decline in major EMs (BRICs)	High	Medium
Surge in financial volatility/a tightening in financial conditions	High	Medium
Intensification of geopolitical tensions/refugee crisis in Europe	Medium	Medium-High

Source: IMF staff assessment.

Notes: 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 weighted by purchasing-power-parity GDP. "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.

There are also a number of country-specific risks. In several countries in the region, there are increased pressures for *populist fiscal loosening* and worsening the composition of budgets that may increase vulnerabilities and be viewed negatively by investors. Another risk is *an unanchoring of inflation expectations*, due to persistently low oil prices and weak inflation expectations.

On the upside, lower oil prices and policies aimed at supporting domestic demand may boost activity more than currently anticipated. For example, policy measures to unclog financial intermediation could boost CESEE domestic demand and a stepped-up ECB QE could further improve euro area growth prospects as well as CEE and SEE competitiveness.

Box 1.3. CESEE: Vulnerability to External Financial Shocks ^{1/}

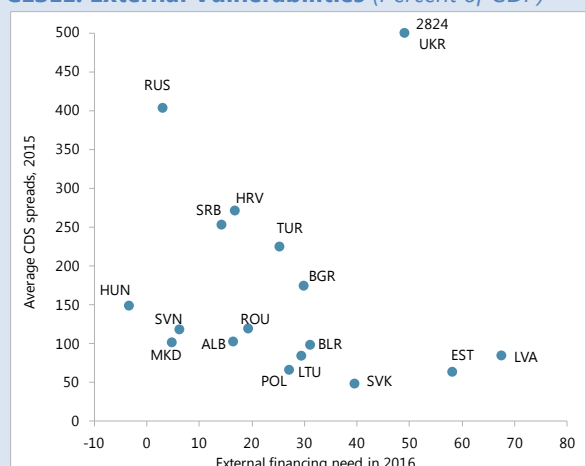
Countries with sizable external financing needs or elevated sovereign credit spreads are more vulnerable to external financial shocks (see Figure). As discussed in the Spring 2014 REI, the level of rollover risk depends critically on the composition of external borrowing. For some countries (most notably the Baltic states) the rollover risks are mitigated by the fact that a sizable portion of payments falling due is related to the inter-company loans, which have proven to be as stable as FDI. On the other hand, countries that have a relatively large share of maturing debt denominated in USD (Turkey, Russia) are more vulnerable to the USD appreciation and to the U.S. interest rate hikes. In the case of Hungary, the FX conversion of mortgages (finalized in February 2015) will be accompanied by a reduction in short-term external debt, and less reliance on net FX swaps— significantly lowering roll-over needs from 2016 onwards (see Figure).

Market risk premiums are generally compressed, increasing the risk of abrupt correction. Based on IMF staff's estimates, the CDS spreads for most CESEE countries are lower than their model-based medium-term norms (see Figure)^{2/}. The CDS spreads of Hungary, Croatia, and Slovenia appear to be particularly compressed, making these countries relatively more vulnerable to a sharp decompression of risk premiums, when global financial conditions tighten. For Turkey, the higher-than-model-based estimate of the CDS spread is likely a consequence of increased political uncertainty.

More leveraged firms and households are more vulnerable to the negative funding shocks. The latest 2015:Q1 data shows that the non-financial corporations' debt-to-equity ratios in Bulgaria, Croatia, Latvia, Romania, and Slovenia remain elevated.

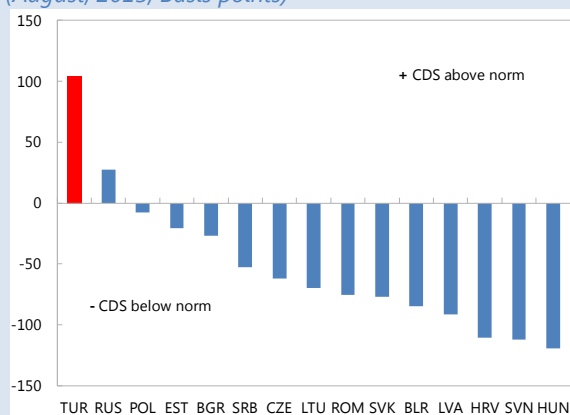
Countries with higher share of foreign investors in local markets tend to be more vulnerable to contagion. For example, the share of foreign holdings of local currency government debt securities is particularly high (over 30 percent of the total) in Hungary and Poland.

CESEE: External Vulnerabilities (Percent of GDP)



Source: WEO, EBRD, and Fund staff calculations.

CESEE: Gap Between Actual and Fitted Sovereign CDS Spreads (August, 2015, Basis points)



Source: Heinz and Sun (2014).

^{1/} This box was prepared by Yan Sun and Plamen Iossifov.

^{2/} The fundamentals-consistent values of CDS spreads are derived from Heinz and Sun (2014) regression model that links them to market's consensus forecasts for the current and the following year of the real GDP growth, government budget deficit, current account balance, public debt to GDP ratio, as well as the depth of the CDS market (proxied by the CDS bid-ask spreads), and global investment sentiment (proxied by VIX).

Box 1.4. Making Sense of Different Attitudes toward Migration among EU Countries^{1/}

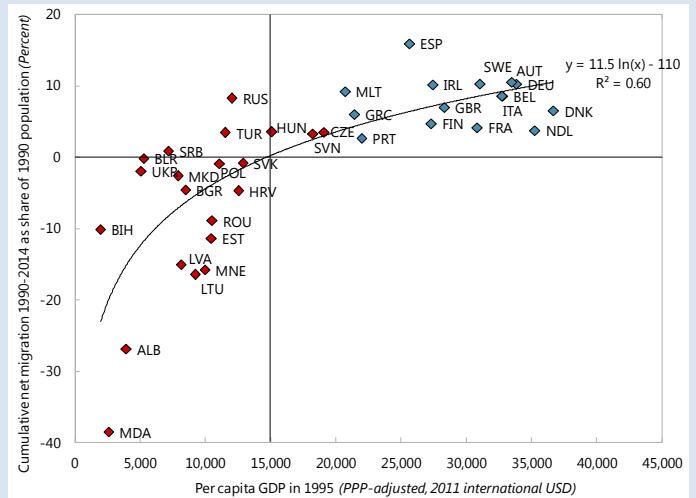
The recent surge in migrant^{2/} flows to Europe has put in the spotlight the long-standing issue of migration.

Governments have taken different approaches to the current humanitarian crisis, with some balking at the costs imposed on EU frontier countries by the Dublin regulation—under which requests of asylum seekers from outside the EU should be processed in the country where they first enter—while others suspending the regulation’s provisions in order to legally accept migrants. What accounts for these differences in attitudes?

International experience offers evidence on both the short-term costs and potential long-run benefits of migration. An upcoming IMF Staff Discussion Note argues that the net fiscal impact of migration is, initially, likely to be negative, reflecting the cost of humanitarian aid and integration policies. Over time, however, the fiscal burden diminishes, as migrants gradually enter the labor force and contribute to tax revenues. The impact on employment and wages of native workers is generally found to be small and short-lived. In the long-run, the expansion of the labor force should boost the potential output of host countries. Fully leveraging on the human capital potential of migrants depends crucially on countries’ ability to successfully integrate migrants.

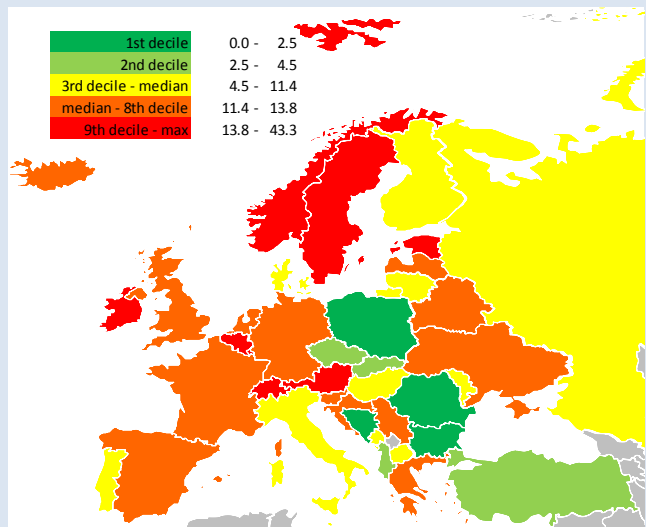
Different countries’ focus on short-term costs or long-term benefits can be seen as reflecting differences in institutional capacities, income levels, and other factors. Migration flows are driven, to a large degree, by differences in income levels and strength of social safety nets between sender and receiver countries. Most CESEE countries with per capita incomes below USD 15,000 (PPP-adjusted) have been on the sender side of migration flows since the late 1980s (see Figure above). Inward migration to wealthier CESEE countries has been mostly from other CESEE countries. Overall, the share of foreign-born persons living in Central, Eastern, and Southeastern Europe (CESEE) is much lower than in Western Europe (see Figure below). CESEE countries, therefore, generally lack the institutional setup and knowhow to integrate large numbers of migrants from outside Europe. This also reflects CESEE region’s more limited historic links with countries outside Europe.

Europe: Net Migration and Initial Income Levels



Sources: Eurostat, World Bank World Development Indicators, and IMF staff calculations.

Europe: Share of Foreign-Born Persons in Total Population, 2014 (Percent)



Source: Eurostat.
Note: Foreign-born refers to people born in other countries, including EU members.

^{1/} This box was prepared by Gil Mehrez and Plamen Iossifov (with input from Krzysztof Krogulski).

^{2/} The term migrant refers to “all people on the move who have yet to complete the legal process of claiming asylum” (www.bbc.com/news/world-europe-34131911).

II. FISCAL CONSOLIDATION IN CESEE AND ITS LONG-TERM IMPACT ON GROWTH

After the onset of the global financial crisis, economies in CESEE came under pressure to correct external and internal imbalances. By now, much of the external adjustment has taken place, via increases in private and public savings and, mainly, through declines in investment relative to GDP—a process that has come with high unemployment in many cases.²

The global financial crisis of 2008-09 forced sharp, pro-cyclical fiscal adjustments on many CESEE countries, typically triggered by a sharp tightening in financing conditions and the re-assessment of longer-term growth prospects. Fiscal adjustment is not yet complete, with significant consolidation needs remaining in several economies, many of them in Southeastern Europe (see below).

The quality of fiscal adjustment is the focus of this chapter, taking a longer-term perspective. As most countries in CESEE have emerged from the crisis and its aftereffects, this is an opportune time to take stock of the structural quality of their budgetary systems, how these have changed during adjustment, and of reform needs that remain. While there are several studies reviewing individual countries' experiences with fiscal adjustment, and also cross-cutting studies on expenditure and revenue reforms, notably in the IMF Fiscal Monitor (2013, 2014), this study takes a regional perspective, looking for common traits and lessons that can be drawn from CESEE's experience.

The chapter focuses on the structural quality of budgets. At its core are questions such as: do revenue systems limit disincentives to work, save, and invest? Does government spending promote productive activities—particularly the accumulation of physical and human capital—or does it finance mostly unproductive transfers? The focus is not on *cyclical* budgetary management, which is covered extensively in IMF bilateral surveillance, notably Article IV reports.

A. How Growth Friendly Are Budgets in CESEE?

Budget structures in CESEE resemble more those of Advanced Europe than of other Emerging Economies, despite significantly lower GDP levels. On the spending side, transfers and public consumption tend to be higher than among peers, on the revenue side, CESEE governments rely disproportionately on social security contributions and consumption taxes. Overall, most CESEE countries entered the global financial crisis with relatively growth unfriendly budget structures.

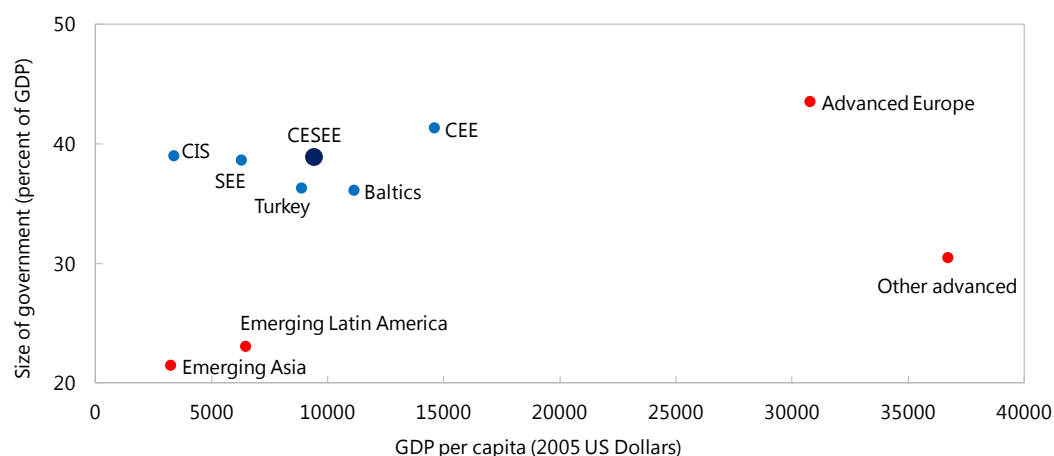
² See the Spring 2015 Regional Economic Issues report for a detailed discussion of the private sector balance sheet adjustment in CESEE.

CESEE Budget Structures Compared to Peers

Budgetary systems in CESEE are young. Many of their features were put in place during the economic transition from socialism in the early 1990s. This (relative) youth has been both a blessing and a curse. On the one hand, CESEE countries could design many budgetary elements from scratch—notably on the revenue side—and in so doing could draw on international experience. On the other hand, legacy issues burdened the transition, such as loss-making state owned enterprises, overburdened social security systems, and excessive public employment. In some cases, these issues inhibit fiscal policy to this day.³

Public expenditure levels in Central and Eastern Europe (CESEE) are high and resemble more those of Advanced Europe than of other Emerging Economies (Figure 2.1).⁴ Despite significantly lower income levels, total spending as a share of GDP is close to Western European standards, reflecting arguably historical reasons, geographic and cultural proximity, and a similar understanding of the role of government. There are some differences *within* CESEE: the Baltic countries and Turkey tend to spend somewhat less than Central (CEE) and South-Eastern (SEE) European countries, and also less than countries in the Commonwealth of Independent States (CIS). However, these differences pale compared to the discrepancies with public sectors in Latin America or Emerging Asia, both of which absorb much smaller shares of GDP.

Figure 2.1. Public Spending and Income, 2014
(Structurally adjusted)



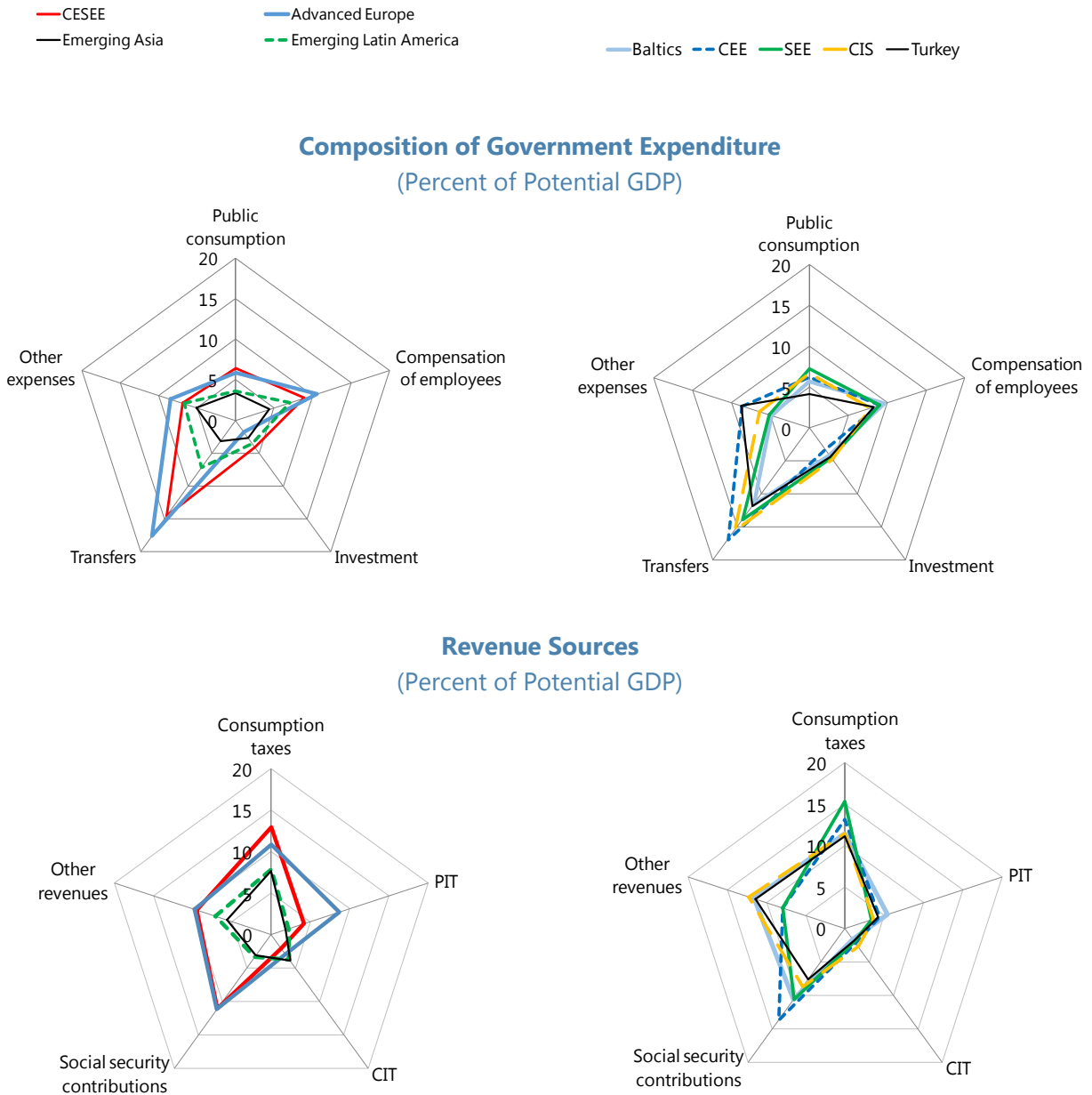
Sources: IMF World Economic Outlook database; and IMF staff calculations

Note: simple cross-country averages (as in all figures).

³ See Tanzi and Tsibouris (2000) or Kopits (2008).

⁴ Figures are drawn from the World Economic Outlook (WEO) database. All aggregates, including expenditure and revenue categories, are adjusted for the business cycle, using a methodology developed by Bornhorst et al. (2011). See Annex IV for the adjustment methodology, and Annex V for countries included in the sample.

Figure 2.2. Budgetary Structures, 2014
(Structurally adjusted)



Sources: IMF World Economic Outlook database; and IMF staff calculations.

The similarity with Advanced Europe shows up as well in similar revenue and, especially, spending structures (Figure 2.2).

- *Expenditures.* Transfers form a sizable portion of government spending, reflecting well developed social safety nets and high outlays for public pensions (Box 2.1). For public consumption—i.e., spending on goods and services—and the public sector wage bill,

expenditure levels in CESEE are also close to those of Advanced Europe. The exception is public investment, where CESEE economies outspend Advanced Europe by a substantial margin (as a share of potential GDP). Disaggregating spending by sub-region shows that Turkey differs from the rest of CESEE, with relatively smaller shares in transfers and public consumption, in line with its smaller overall spending levels. Also in the Baltic countries, transfers are below the CESEE average.

Revenues. The discrepancies with Advanced Europe are larger on the revenue side. CESEE governments tend to raise a higher share of revenue from consumption taxes—i.e. value added tax (VAT) and excises—than their western European counterparts. By contrast, they raise less from direct taxes on personal (PIT) and corporate income (CIT). For taxes on personal income and property, the revenue yield in CESEE is less than half compared to that in Advanced Europe.⁵ Consumption taxes are an important revenue source especially in Southeastern Europe, where yields are almost double those of Advanced Europe. Turkey raises a relatively small share of revenue from social security contributions, in line with its lower level of transfers.

Box 2.1. Public Pension Spending and Pension Sustainability^{1/}

The challenges for pension systems in Emerging Europe (EE) resemble those in Advanced Europe (AE).

Increasing life expectancy and falling fertility rates have triggered rapid population aging. In the EE EU Member States—where comparable data exist from the European Commission’s Ageing Report—the share of the working age population is expected to decline rapidly. While currently about 1.5 workers support one pensioner, this is expected to be only one worker per pensioner in 2060 (for AE countries, the number of workers per pensioner will fall from 1.9 to 1.4).

Progress with pension reform in Emerging Europe compares favorably with Advanced Europe. Many EE countries began to introduce pension reforms starting in the early 2000s. Although the path and pace of reforms differ across countries, most countries have reduced pension benefits, restricted early retirement, and increased the retirement age. As a result of these reforms, in most EE countries the net pension deficit is projected to be less than 2 percent of GDP by 2060. At the same time, public pension spending is projected to fall by $\frac{1}{4}$ of a percentage point until 2060.⁶

A major concern is social sustainability of the pensions system. A key element of pension reform has been the reduction in pension benefits through parametric reforms. As a result, the level of pensions—already lower compared to AE—will decline further. Relative to wages, pension benefits are projected to fall on average by 10 percentage points until 2060. While such developments are unavoidable to render public pensions financially sustainable, in a few countries, the benefit ratio and gross replacement rate are projected to fall below 20 percent in 2060. This looks unrealistic and raises concerns about intergenerational equity.

⁵ The gap is smaller for corporate income tax. High CIT yields are a distinctive characteristic of many developing and emerging economies (Crivelli, Keen and De Mooij, 2015)

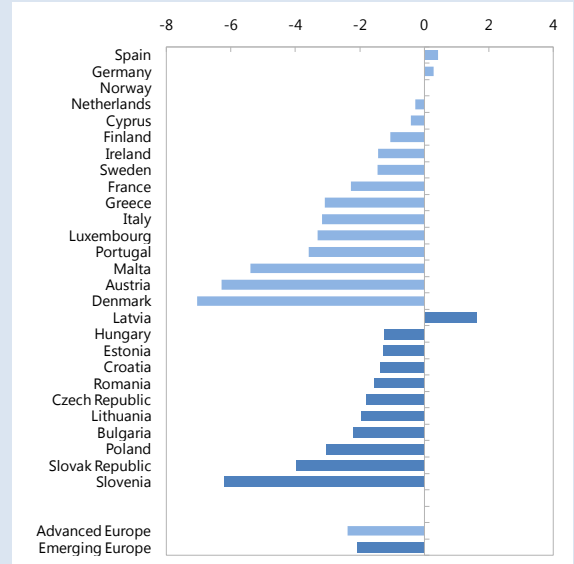
⁶ Total ageing-related costs are projected to increase, however, reflecting the impact of ageing on issues like health and long-term care expenditures.

To ensure adequate retirement incomes in the future, EE policymakers should strive to raise the effective retirement age and encourage private savings. Aligning the retirement age with life expectancy alone could improve the net pension balance by about 0.6 percentage points. Increases in public pension contributions may also be called for in individual cases. The development of private pension savings schemes should be encouraged, to complement public pensions for higher-earning workers.

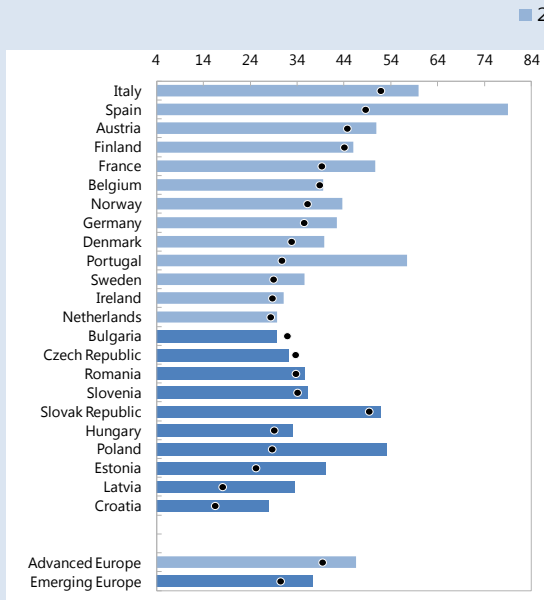
EU: Change in Pension Spending, 2013-60
(Percentage points of GDP)



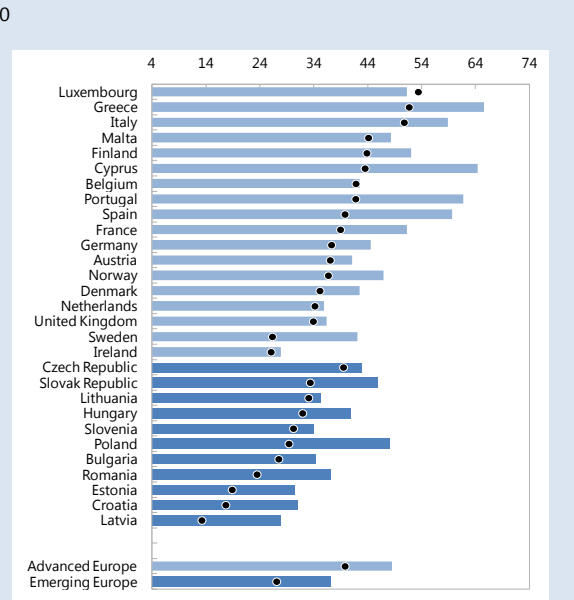
EU: Net Pension Balance, 2060
(Percentage points of GDP)



EU: Gross Replacement Rate
(Percent)



EU: Benefit Ratio
(Percent)



Source: European Commission, The 2015 Aging report.

^{1/} This box was prepared by Yan Sun

Differences in budget structures can reflect policy preferences, but also different structural characteristics of the underlying economies. For example, an open economy would typically raise a larger portion of revenues from (indirect) trade taxes than a closed economy. To separate out the structural component, Figure 2.3 compares the CESEE’s actual (average) budget structure with a model-based, “predicted” structure—that is, the budget one would expect from a country with identical structural characteristics. The model-based budget is computed from cross-country regressions covering 76 advanced and emerging economies (Annexes V and VI for details). The regressions suggest that per-capita GDP is the most important correlate of budget structures, with richer economies collecting more revenue from income taxes, and spending a relatively higher share of GDP on the public sector wage bill and on transfers. Other important correlates are total GDP, openness, population density, age structure, and resource wealth.

Public spending in CESEE is generally higher than the various structural characteristics suggest—but especially so on transfers, public consumption, and other, unclassified expenses. On the revenue side, CESEE countries use particularly heavily social security contributions and consumption taxes. As CESEE, *advanced* Europe spends more on transfers than its structural characteristics suggest, but—in contrast to CESEE—not on public consumption. On the revenue side, CESEE’s disproportionate reliance on consumption taxes is not shared by Advanced Europe. Differences in public investment and personal income tax between Advanced Europe and CESEE are largely explained by structural characteristics.

What Makes a Budget Growth Friendly?

Context

The remainder of this chapter analyzes the link between CESEE’s budgetary structures and long-term growth. Before advancing, some remarks are in order to place the analysis in context.

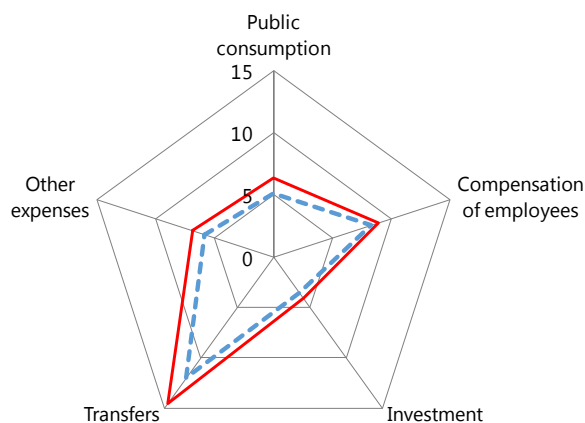
- First, ***supporting growth is only one objective of fiscal policy.*** In particular, fiscal policy also pursues social and distributional objectives that may or may not correlate with growth—the link is complex. There can be conflicts: for instance, a shift from direct to indirect taxes reduces disincentives for work and savings, but it also decreases the amount of income redistribution through the tax system. Similarly, cuts in transfers can encourage labor participation but might worsen equity. That said, well-designed fiscal packages can mitigate such trade-offs (Cournede et al., 2014).⁷ For example, if the proceeds of a regressive yet growth-enhancing tax reform are used to finance productive spending, for example on education or health, the outcome may be higher growth and lower inequality (IMF, 2014b).

⁷ In general, expenditure-based fiscal consolidations are found to increase income inequality while revenue-based consolidations are rather neutral (Ball and others, 2013) or may even decrease inequality (Mulas-Granados, 2005).

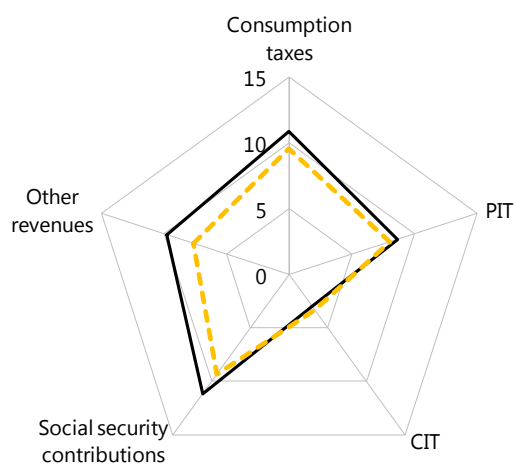
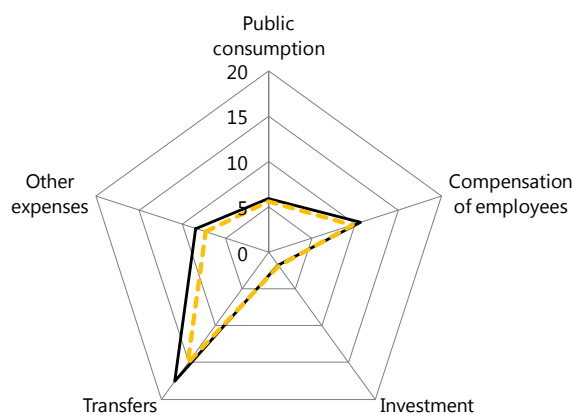
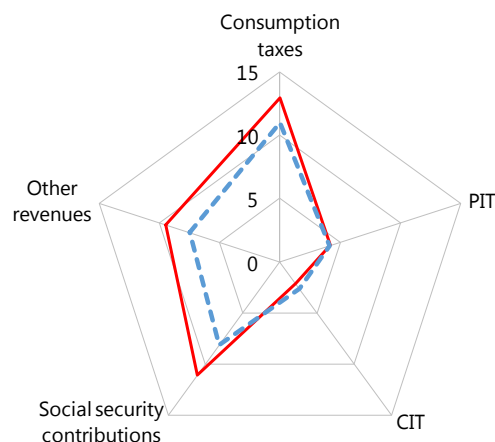
Figure 2.3. Actual vs. Model-Implied CESEE Budgets
(Structurally adjusted, percent of potential GDP)

— CESEE - - CESEE predicted — Advanced Europe - - Advanced Europe predicted

Expenditure



Revenue



Sources: IMF World Economic Outlook database; and IMF staff calculations.

- Second, **growth friendliness has a long- and a short-term dimension**. In the short term, the impact of policies on *aggregate demand* can be more important than the structural aspects discussed here. Cuts in transfers, for example, can be detrimental to aggregate demand, even though they may improve labor market outcomes in the longer term. A discussion of short-term demand stabilization is beyond the scope of this chapter.
- Third, **not only taxation and spending levels matter for growth but also the quality of government policy and institutions**. On the revenue side, this includes issues such as tax expenditures and the quality of tax administration. On the expenditure side, *spending*

efficiency is critical. Box 2.2 reports results for public infrastructure, health, and education. They point to relatively strong educational outcomes in CESEE relative to the amount spent on public education. This is less the case though for health and public infrastructure (the latter with the exception of the Baltic countries). Thus, CESEE's relative overspending on public investment may compensate in part for lower spending efficiency.

Theory

Economic theory offers some insights into how budgetary policies can support growth

(Anschauer, 1989; Barro and Sala-i-Martin, 1992; Mendoza et al., 1997).

For **government revenues**, theory suggests that, at an aggregate level, taxation of income tends to be more harmful to growth than taxation of consumption.

- *Taxation of capital income* reduces the return on savings and investment, thus discouraging domestic investment, foreign direct investment and productivity improvement (Hall and Jorgenson, 1967; Lee and Gordon, 2005). With capital being fairly mobile, high capital taxes can also drive corporate activity across borders absent international cooperation. Such tax arbitrage by multinational companies can be especially detrimental for emerging economies (De Mooij and Ederveen, 2008; Dharmapala, 2014; Crivelli, Keen and De Mooij, 2015).
- *Labor taxes* can reduce both the demand for and supply of labor. *Social security contributions* can be especially harmful to employment if they interact with the withdrawal of social transfers upon taking up work, creating so called “employment traps”—that is, high effective marginal tax rates at the lower end of the income distribution (Blundell et al. 1998; Eissa and Liebman 1996; Pissarides 1998).
- By contrast, *broad-base consumption taxes* discourage neither savings nor employment. Some taxes—such as environmental taxes—can even improve resource allocation and correct market failures (IMF, 2015a; Woo et al., 2013; Agnello and Sousa, 2012). At the same time, indirect taxes tend to be regressive. *Sector-specific taxes*, by contrast, can be especially distortionary and growth unfriendly.

In line with these arguments, a series of papers by the Organization for Economic Cooperation and Development (Johansson et al., 2008; Arnold, 2008) has developed a “tax and growth ranking”, according to which taxation of corporate profits has the most adverse impact on growth, followed by labor taxation. By contrast, recurrent taxes on immovable property are the least distortive tax instrument (Box 2.3), followed by broad-base consumption taxes, particularly VAT.

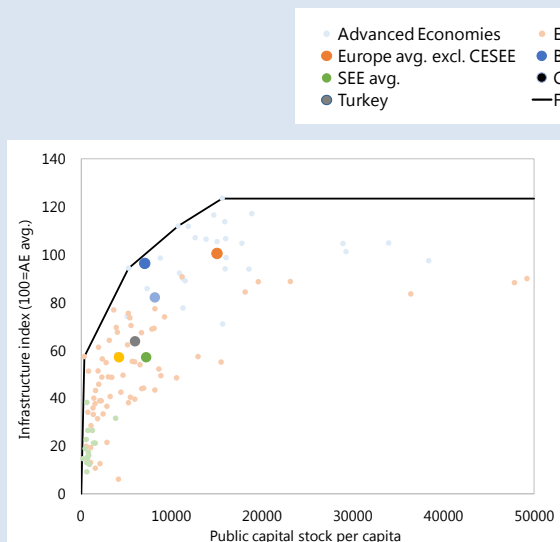
Box 2.2. Public Spending Efficiency^{1/}

“Spending efficiency”—that is, achieving policy objectives with minimal public expense—is critical for high-quality fiscal policy. This box assesses CESEE countries’ public spending efficiency based on the “efficient frontier approach”. The “efficient frontier” maps an output variable—e.g., average PISA test scores—against an input variable—education spending. The frontier is formed by a linear combination of the countries that achieve specific outcomes at the lowest cost.⁸ A country’s spending efficiency is summarized by an “efficiency score,” that is, the ratio of the frontier-level of expenditure to the country’s level. The score is equal to one if a country is at the frontier. A score of less than one indicates that the country has room to save by improving efficiency.

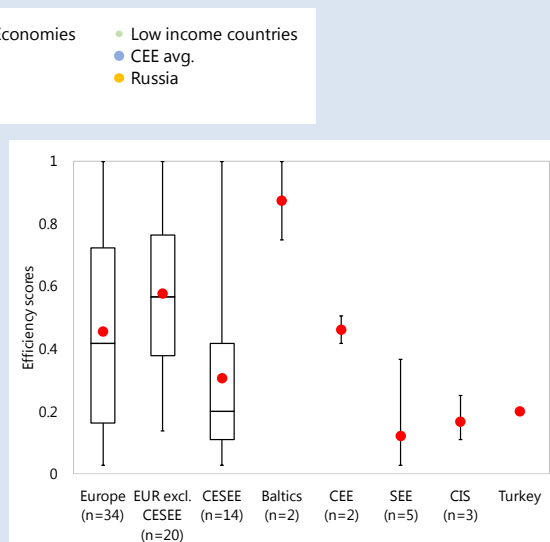
This box analyzes spending efficiency in three key areas: public infrastructure, health, and education. Outcomes for CESEE countries vary greatly across these three areas.

- **Infrastructure.** Most CESEE countries have not only poorer infrastructure than Advanced Europe, they also lag Advanced Europe as regards the efficiency of public investment provision. The exception are the Baltics, which are close to the efficient frontier. By contrast, SEE countries have most room to improve.
- **Health.** Health spending in CESEE countries is also less efficient than in Advanced Europe. Further, the health expenditure efficiency in CESEE countries is at the lower end of emerging market economies. Some SEE countries have higher efficiency with a very low level of expenditure. CIS countries have the most room to improve efficiency.
- **Education.** By contrast, education expenditure in CESEE countries is relatively efficient. Turkey (and to a lesser extent the SEE region) is close to the efficient frontier, with relatively low levels of education spending. Many Baltics and CEE countries have similar educational scores as Advanced Europe, but achieve this with a significantly lower education expenditures.

Public Capital Stock Efficient Frontier

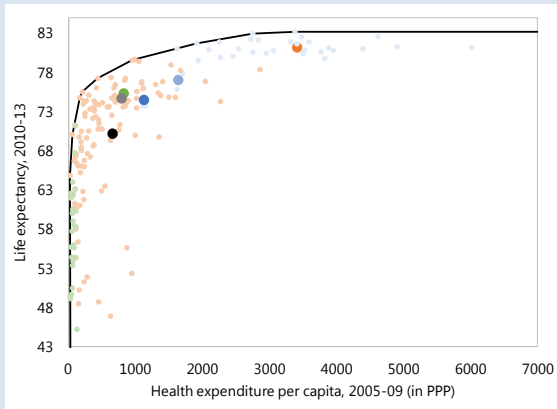


Public Capital Stock Efficiency Score Distribution

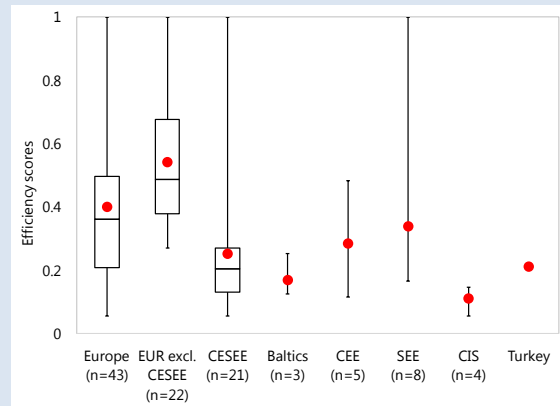


⁸ See Herrera and Pang (2005) for more on Data Envelopment Analysis methodology.

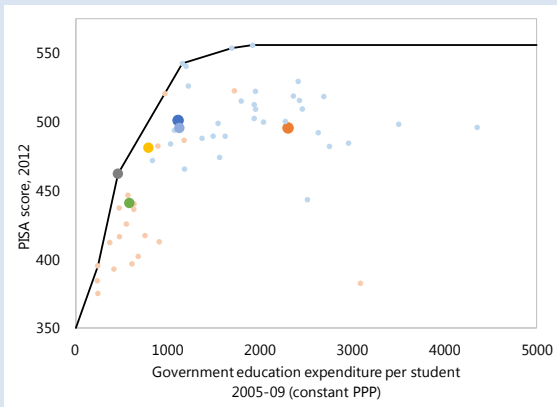
Health Expenditure Efficient Frontier



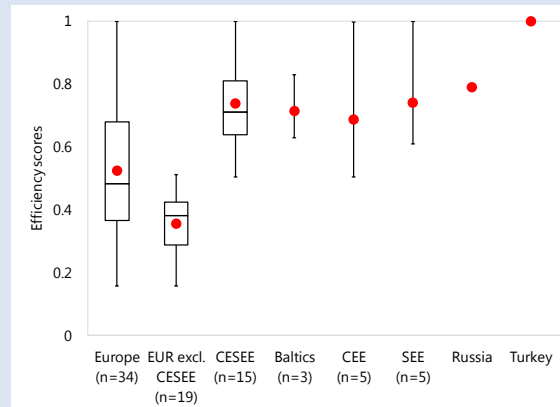
Health Expenditure Efficiency Score Distribution



Government Education Expenditure Efficient Frontier



Government Education Expenditure Efficiency Score Distribution



Source: Public capital stock and infrastructure indicator data are provided by FAD 9FAD notes Center for International Comparison (2013). World Economic Forum (2014), OECD (2014), WEO, World Development Indicators (2014) as sources. Health expenditure, life expectancy, and government education expenditure data are from World Development Indicators. PISA (Program for International Student Assessment) scores are from OECD (2012).

Note: The sample includes all countries whose data are available. The box plots on right panels show 25th, 50th, and 75th percentile, with the whiskers showing minimum and maximum values. For smaller groups, CESEE, SEE, Baltics, CIS, and Turkey, only the ranges are presented.

^{1/} This box was prepared by Jiae Yoo.

On the expenditure side,

- *public investment* can boost returns to private investment and education, raise productivity and promote technological progress (Romp and de Haan, 2007; Bom and Ligthart, 2009, Pecorino, 1993; King and Rebelo, 1990, Everaert and others, 2014; Dhont and Heylen, 2009), and should therefore be generally supportive to growth. Similarly, *health and education* spending can support human capital accumulation.

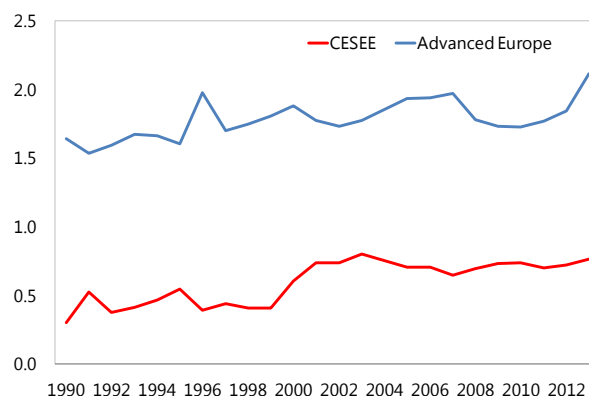
Box 2.3. Taxes on Property^{1/}

Property taxes are widely regarded as an efficient and equitable means of raising revenue, but with a revenue potential that is largely untapped in many countries. Property taxes generally yield relatively modest revenue, particularly in developing economies, but there are also large disparities across countries that signal a potential for enhanced utilization (Norregaard, 2013). In CESEE, revenue collection^{2/} from property taxes in 2012/13 averaged 0.7 percent of GDP, similar to that in developing countries, but less than half of that in advanced economies. There is no evidence either of any CESEE catch-up to advanced European countries in property tax collection. Since 1990, collection has increased by about ½ a percentage point of GDP in both country groups.

Recurrent taxes on land and buildings have a small adverse effect on economic growth, though are unpopular. These taxes do not affect the decisions of economic agents to supply labor, to produce or invest to the extent as some other taxes. Another advantage of property taxes is that the tax base is more stable making its revenue more predictable, partly due to less cyclical fluctuation in property values (Joumard and Kongsrud, 2003). Also, as real estate and land are highly visible and immobile these taxes are more difficult to evade, and the immovable nature of the tax base may be particularly appealing in the context of increasing tax competition. There is, however, a widespread popular and hence political resistance to their increased use stemming in part from their transparency and relatively limited scope for tax avoidance and evasion.

Recent reform proposals in CESEE entail significant revenue potential. Latvia introduced a residential property tax on buildings in 2010 to complement the existing land tax. Kosovo has recently introduced a more efficient and accurate cadastre. Serbia plans to replace the system of taxes based on property rights in tandem with a planned land privatization reform. In Croatia, a plan to introduce a new ad valorem property tax at a uniform tax rate of 1.5 percent, to replace existing 'utility fees' and the second home tax is being considered.

Revenue from Property Taxes, 1990-2013
(In percent of GDP)



Property Tax Revenue (2012/13)

	% of GDP	% of tax revenue
Baltics	0.61	2.93
Central and Eastern Europe	0.83	4.02
Southeastern Europe-EU	0.76	3.57
Southeastern Europe-non-EU	0.38	1.74
European CIS countries-ex Russia	0.71	2.75
Russia	1.12	3.91
Turkey	1.36	6.39
Advanced Europe	1.92	6.84
OECD Countries (excl. CESEE countries)	2.19	8.33
Developing Countries	0.61	3.50

^{1/} This box was prepared by Ernesto Crivelli.

^{2/} Due to data availability, the revenue figures relate to total revenue from property taxes, which may also include for some countries, recurrent taxes on net (of debt) wealth; taxes on estates, inheritances and gifts; financial and capital transaction taxes, or sales of immovable property.

- By contrast, *subsidies* can distort the allocation of resources and therefore harm growth. *Transfers* such as unemployment benefits, especially when poorly designed, can reduce employment incentives and worsen labor market outcomes (Meyer, 2002; Abbring and others, 2005; OECD, 2006).
- There are no clear theoretical priors for *spending on goods and services*—that is, public consumption. Public consumption is comprised of basic administrative services that economies need to operate efficiently, as well as education and healthcare spending. Excessive levels of public consumption can be inefficient and growth-damaging, however.

Empirics

To arrive at a quantifiable framework, **empirical analysis complements the findings identified by theory**. The results are based on panel regressions that relate real per-capita GDP growth to a country's cyclically adjusted revenue and expenditure structure, following the approach introduced by Kneller et al. (1999)—see Annex VII for details.⁹ Regressions are performed across broad expenditure and revenue categories as reported in the World Economic Outlook (WEO) database. This approach yields some broad insights, but it also has limitations:

- *Cyclical adjustment* of fiscal data is critical to prevent reverse causality from growth to revenue and expenditure categories. Data for all budget categories are adjusted using a methodology proposed by Bornhorst et al. (2011). The methodology allows for robustness checks by varying the elasticities of budget categories to the business cycle; as another check, regressions are estimated with GMM and instrumental variable techniques. This said, there can still be feedback if adjustment is imperfect or in the presence of within-year fiscal policy reactions to developments in growth.
- The regression's point estimates capture *average patterns* across expenditure and revenue categories. Especially on the spending side, this abstracts from *composition within* these categories: for example the share of public consumption spent on productive uses such as education or health, or the composition of the capital budget—although these issues are likely relevant for growth. More detailed expenditure categorizations, and/or a breakdown of expenditures by functional categories, would be desirable but are not available consistently across countries. On the revenue side, low yields from certain taxes can reflect low tax rates, large tax exemptions, or poor revenue administration—factors that have arguably different growth implications, but cannot be distinguished here.

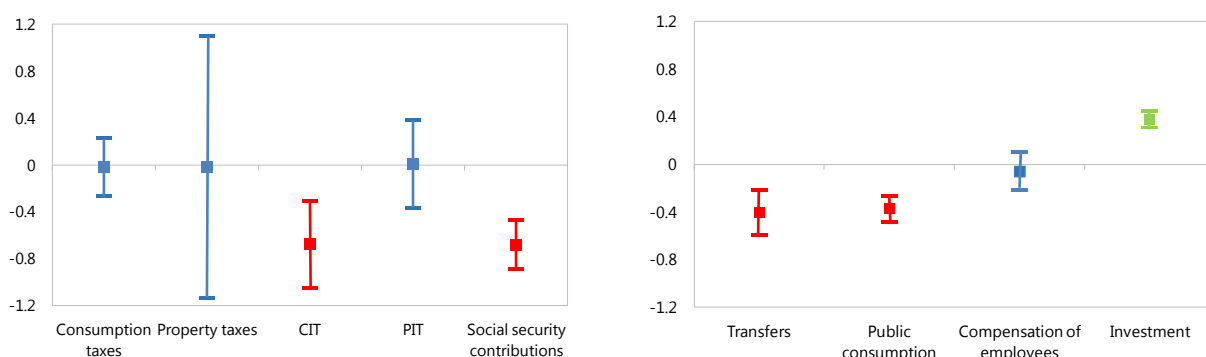
⁹ In line with the treatment in Kneller et al. (1999), regressions are run separately for each revenue (expenditure) category and control for total expenditures (total revenues). The implicit assumption is that an increase in one revenue (expenditure) category is, in the long run, offset by a reduction in the other revenue (expenditure) categories. The coefficients should thus not be interpreted as the direct, marginal impact of an increase in a revenue (expenditure) category on growth.

- Further, to keep the empirical model tractable it is *linearized*. Hence it abstracts from issues like returns to scale (for example, the possibility that public investment may become gradually less growth effective *with larger* amounts of investment).

With these limitations in mind, **the results point in the following directions:**

- *Revenues*. Corporate income taxes and social security contributions correlate negatively with growth in CESEE, as suggested by theory. By contrast, neither consumption nor property taxes correlate significantly with growth. Interestingly, personal income tax is also *not* associated with a significant negative growth effect, which is in line with previous findings (Lee and Gordon, 2005; Federe and Dahlby, 2012). A *growth-oriented revenue reform* in CESEE economies would therefore shift the revenue base away from corporate income tax and social security contributions, and toward consumption taxes, property taxes, and personal income tax.¹⁰
- *Expenditures*. On the spending side, transfers and public consumption in CESEE are significantly negatively correlated with growth (Annex Table VII. 1). The point estimate for public employment is also (slightly) negative but insignificant. By contrast, public investment is positively associated with growth.¹¹ A *growth-oriented spending reform* in CESEE would therefore shift spending away from public consumption and transfers, and toward investment.

Figure 2.4. Estimated Impact of Fiscal Policy on Long-Term Growth
(Percentage points of real per capita GDP growth, 95% confidence interval)



Sources: IMF World Economic Outlook database; and IMF staff calculations.

¹⁰ A shift from corporate to personal income taxes can improve efficiency (Johansson et al., 2008) while also improving income distribution (IMF, 2014).

¹¹ The coefficient is substantially lower than fiscal multipliers typically found for public investment, for example IMF (2014). This is by design: the focus here is, in contrast to multiplier studies, on investment increases *offset* by cuts in other public spending categories.

These results for CESEE and Advanced Europe are closely aligned with findings in earlier literature (e.g., Afonso and Alegre, 2011; Acosta-Ormaechea and Yoo, 2012; Acosta-Ormaechea and Morozumi, 2013). That said, results for other regions differ, especially on the revenue side.¹²

How Does Emerging Europe Score?

With this, **the elements are in place to compile an index capturing the growth friendliness of CESEE's budgets.** The index multiplies the growth coefficients from above (Annex Table VII.1 and 2) with the deviations of the actual from the predicted budget structure (Annex Table VI. 1), then sums all revenue/expenditure categories.

Importantly, the index is relative: i.e., a positive value indicates that a country's budget structure is more long-term growth friendly than that of its peers (that is, countries with identical structural characteristics), and vice versa. Further, and in line with the standard treatment in the literature, revenue and expenditure structures are analyzed separately. As these structures are not necessarily independent of one another—for example, higher social security contributions typically go hand in hand with higher transfers—the results for expenditures and revenues are *not* added up, in order to avoid double counting. The analysis is done for 2008—i.e., at the onset of the global financial crisis—and for 2014, which is the latest information available.

The results show that **CESEE economies entered the global financial crisis with relatively growth unfriendly budget structures** (Figure 2.5).

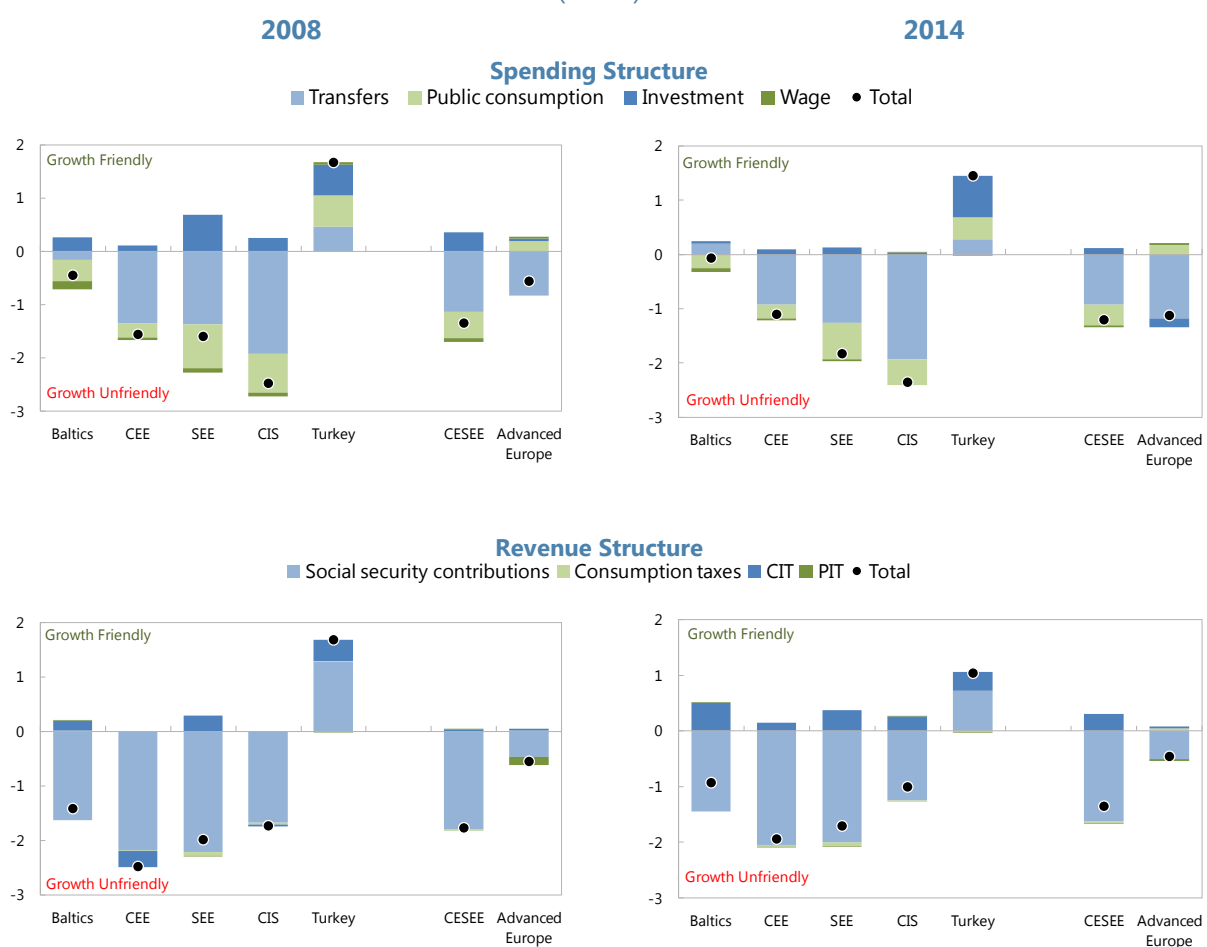
- On the *expenditure side*, CESEE's high transfers—a large portion of which redistribute from the young to the old—and, to a lesser extent, public consumption rendered the spending structure growth unfriendly. By contrast, public investment contributed positively to growth, being higher as a share of GDP than CESEE's structural characteristics would suggest. Overall, in 2008 CESEE's spending structure was less growth friendly than that of Advanced Europe.
- The aggregate hides *important differences between sub-regions*, however. CIS countries, Central Europe, and Southeastern Europe had especially growth unfriendly spending structures. By contrast, the Baltics' spending structure was broadly in line with peers, and Turkey's spending structure was broadly favorable for growth, as transfers and public consumption were lower and public investment was higher than among peers.
- CESEE scored equally poorly on the *revenue side*. High social security contributions were the main factor, for all sub-regions except Turkey.

¹² All other countries are grouped into one category as "rest of the world" (ROW). The spending regressions tend to display similar results as for Europe, but not the revenue regressions, which fail to report significant coefficients for ROW. This may reflect many things, including heterogeneity within ROW, structural and institutional differences insufficiently captured by the empirical specification, and/or residual or policy feedback.

That said, **in several aspects CESEE’s budget structures improved between 2008 and 2014.**

- On the *spending side*, for the CESEE region as a whole, cuts in transfers and in public investment broadly offset one another in terms of the growth orientation of spending. But the aggregate patterns masks large differences between subgroups: Central Europe, the Baltics and the CIS countries significantly improved the growth orientation of expenditures between 2008 and 2014, while structures in Southeastern Europe and Turkey deteriorated.
- On the *revenue side*, corporate income tax receipts fell and are now less in CESEE than among peers, reflecting not only corporate tax rate reductions but also changes in tax base structures that are likely not related to policies (see below). This loss was mostly compensated by growth-neutral forms of taxations, in particular VAT.

Figure 2.5. Growth Friendliness of Budget Structures, 2008 and 2014
(Index)



Sources: IMF World Economic Outlook database; and IMF staff calculations

How was the improvement in budget structures possible during a period when many countries went through sizable fiscal consolidation? What policies and structural developments

underpinned changes in the spending and revenue structures? Is there a link between the quality and size of fiscal consolidation? The second part of this chapter looks at the evidence in more detail, complementing the quantitative findings with a qualitative analysis of fiscal developments in CESEE economies.

B. Budgetary Adjustment in the Wake of the Global Financial Crisis

The global financial crisis and its aftermath had a profound impact on CESEE countries' budget structures. Yields from corporate income tax fell as a result of both tax cuts and structural shifts in the tax base. Governments compensated mostly by raising consumption taxes. On the expenditure side, consolidation affected primarily the public sector wage bill, transfers, and capital spending. This said, countries with access to EU structural funds often avoided large cuts in public investment. Overall, changes on the revenue side went generally into a growth friendly direction, while on the expenditure side outcomes differ widely between countries and sub-regions.

Fiscal Adjustment in CESEE, 2008–14

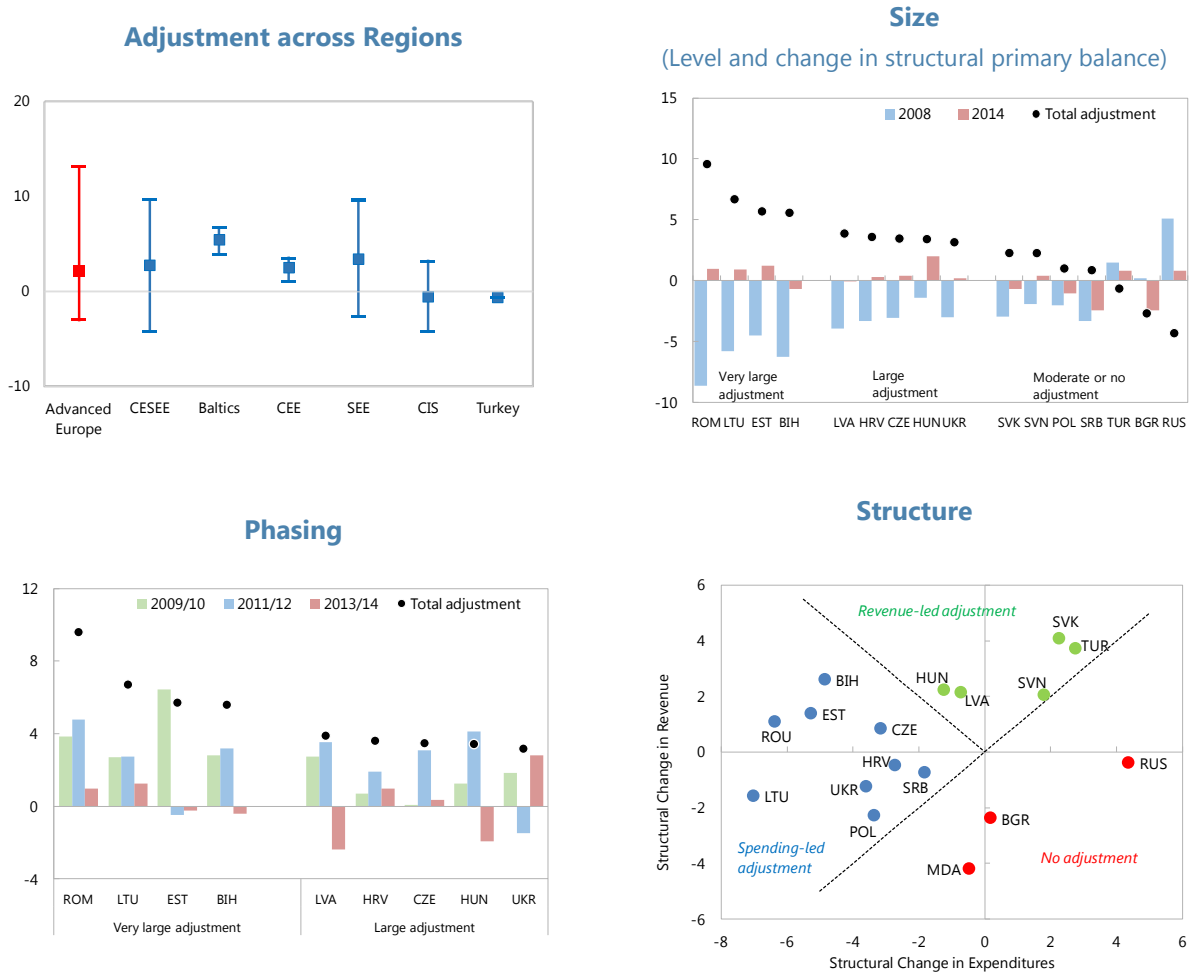
In the wake of the global financial crisis of 2008-09, many CESEE countries went through sizable fiscal adjustment (Figure 2.6). As global financial conditions tightened—even cutting some countries off external financing for a period—funding large deficits became more difficult. Further, the end to credit-fueled, domestic demand driven growth triggered a re-assessment of growth prospects, implying that many countries needed a tighter long-term fiscal stance than previously thought.

Structural fiscal adjustment varied across sub-regions. The Baltic countries adjusted the most, followed by Southeastern Europe—with a wide variety of outcomes—and Central Europe. In Romania, Lithuania, Estonia and Bosnia and Herzegovina, structural fiscal adjustment exceeded 5 percentage points of GDP. In Latvia and Hungary, adjustment exceeded 5 percentage points of potential GDP for 2008-12, but some of this was reversed in 2013/14. Also in Croatia, the Czech Republic, and Ukraine structural fiscal adjustment was more than 3 percent. In all countries with very large adjustments, the effort was heavily frontloaded, often—but not always—in the context of IMF-supported programs (Romania, Bosnia and Herzegovina, Latvia, Hungary, Ukraine). Annex VIII contains a detailed description of country experiences with large adjustments.

Structural adjustment was, for the most part, expenditure-led.

- The structural primary balance improved in 14 out of the 17 CESEE economies covered by this analysis, and in 9 of these, the structural reduction in spending was larger than the structural increase in revenues. For all very large adjusters identified above—Romania, Lithuania, Estonia, Bosnia and Herzegovina—consolidation was clearly expenditure-led, with structural spending cuts of 5 percent of GDP or more.

Figure 2.6. Fiscal Adjustment, 2008–14
(Change in structural primary balance, percent of potential GDP)



Sources: IMF World Economic Outlook database; and IMF staff calculations.

- The largest structural *revenue* increases—about 4 percent of GDP—occurred in Turkey and the Slovak Republic. In both cases, however, higher revenues financed in large part higher spending (of about 2½ of GDP) instead of contributing to consolidation. Among the larger (overall) adjusters, consolidation was revenue-led only in Hungary and Latvia. The total for 2008–14 masks shifts over time, however, as in both countries fiscal adjustment started mostly on the expenditure side in 2008–10, before shifting to revenues in later years.

How Did Budget Structures Change?

Revenues

The global financial crisis and its aftermath had a profound impact on CESEE's public revenue structures (Figure 2.7). On the revenue side, the yield from direct taxes—on personal and, especially, corporate income—fell, for all sub-regions except Turkey. In the CIS and CEE countries, the loss in CIT receipts often reflected cuts in tax rates—see Box 2.4 for a survey. However, in the Baltic and SEE countries, the (structurally adjusted) yield from CIT fell *without* a corresponding cut in tax rates. This points to structural shifts in these countries' tax bases—notably the sustained decline in the construction sector that occurred in most CESEE countries in the wake of the global financial crisis, and structural declines in the profitability of financial corporations.¹³

Notwithstanding the fall in income tax yields, overall revenue increased (adjusted for the cycle), owing to two main factors:

- Higher *consumption taxes*. *VAT reform*—a relatively growth friendly form of tax increases. Increases in standard VAT rates and, in some cases, also in reduced rates were a part of most countries' fiscal consolidation packages. Romania, Hungary and the Baltic countries had especially large increases in VAT standard rates.
- Higher *non-tax revenues*, including grants. Most EU member states increased the *absorption of EU structural and cohesion funds*, yielding on average revenue increases of 0.7 percent of GDP (and of more than 1½ percent of potential GDP in Bulgaria and Slovenia). Some countries in Central Europe and the Baltics also increased fees and other non-tax charges. A prominent example is Hungary, where sector-specific levies on banks, retail firms, and utility companies increased revenues by more than 2 percentage points of GDP.

Expenditures

Turning to expenditures, CESEE economies cut (in the aggregate) spending by 2 percent of potential GDP. At more than 4 percent of potential GDP, spending cuts were largest in the Baltic economies, followed by South-Eastern and Central Europe. In the CIS economies, spending levels remained (on average) unchanged. Turkey expanded spending, in line with the increase in revenues.

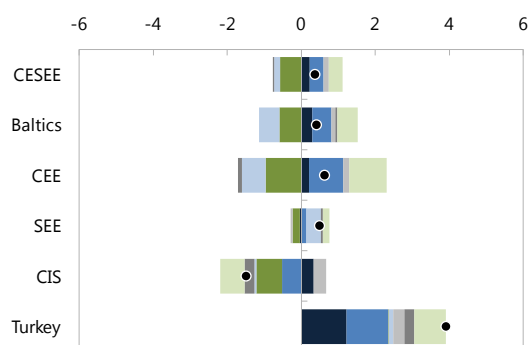
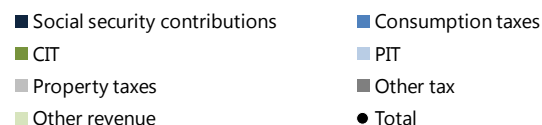
¹³ This result is highly robust and *not* driven by insufficient cyclical adjustment: even doubling the elasticity of CIT to GDP compared to the base specification (1.5) does not materially change the result.

There are large cross-country differences in the structure of expenditure consolidation.

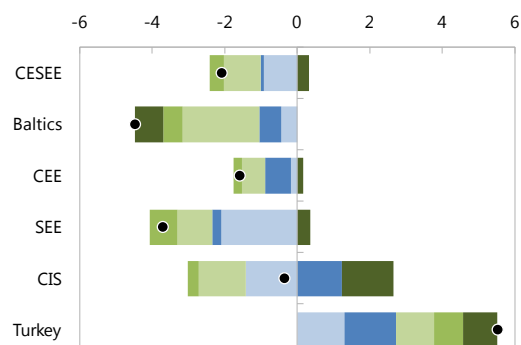
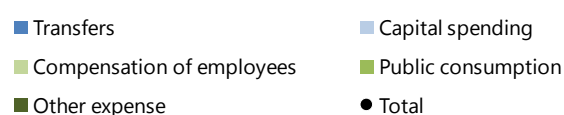
- Capital spending.** Most CESEE countries that tightened the fiscal stance in 2008-14 also cut public investment. However, investment cuts in *non-EU member states* exceeded those in *EU member states* on average by a full percentage point of potential GDP (1.4 percent vs. 0.4 percent). As EU structural funds finance mostly capital projects, this suggests that their availability to EU members helped mitigate pressures on public investment, with Hungary, Lithuania and Slovenia managing to even *increase* capital spending, despite fiscal consolidation.¹⁴ At the other end of the spectrum, Ukraine, Croatia, Romania and Serbia cut investment by 2½ percentage points of potential GDP or more, often motivating these cuts with insufficient prioritization and therefore inefficiency of public investment.
- Current spending.** The spending category with the largest consolidation was the *public sector wage bill*. Cuts averaged 1 percent of potential GDP across CESEE, exceeding 2 percent of potential GDP in Latvia, Romania, Lithuania, and Hungary. These reductions were achieved through a mix of public sector wage cuts (up to 25 percent in Romania), including through the elimination of extra payments such as 13th month salaries (Hungary), and reductions in public employment.

Figure 2.7. Changes in Budget Structures, 2008–14
(Percent of potential GDP)

Revenue Changes



Expenditure Changes



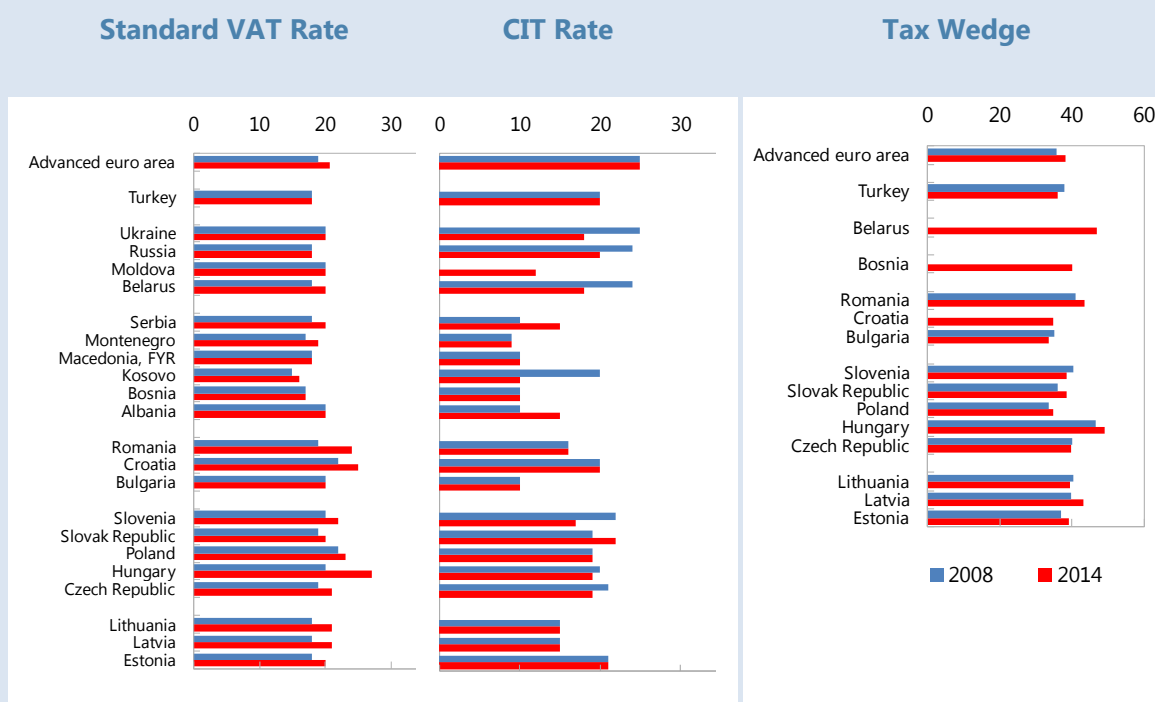
Sources: IMF World Economic Outlook database; and IMF staff calculations.

¹⁴ The end-date of 2014 used in this analysis may overstate somewhat the increase in EU structural and cohesion funds and the corresponding beneficial impact on public investment, as absorption of EU funds is projected to decline after 2015 reflecting a new "program period" (see Box 1.1).

Box 2.4. Tax Rates^{1/}

Revenue reforms have been a key component in many countries' fiscal consolidation efforts. A study of changes in tax rates allows for analyzing policy changes while abstracting from underlying structural or cyclical (and incompletely corrected) changes in the economy.

- Most CESEE countries have raised **VAT rates** since 2008. In the Baltic and CEE countries, the VAT rate increased on average by close to 3 percentage points, although in SEE and CIS countries the increase has been about 1½ percentage points. This compares to an average VAT rate increase of 2 percentage points in Advanced Europe. In terms of levels, VAT rates in Baltic and CEE countries tend to be slightly higher than in Advanced Europe (21.9 percent on average vs. 21.1 percent, while in SEE and CIS countries they are lower at 19.8 percent).
- Despite fiscal consolidation efforts, **tax rates on corporate profits (CIT)** have fallen in several countries, notably in CIS and CEE countries. CIT rates in CESEE are low compared to advanced Europe (15.9 percent vs. 25 percent in 2014).
- **Labor taxes** remain high. At 39.2 percent, the average labor tax wedge in CESEE (from personal income tax and social security contributions) exceeds that in advanced Europe (38.2 percent).¹⁵ Since 2008, the tax wedge has on average increased by less than ½ of a percentage point. This is significantly less than the increase of more than 2 percentage points in advanced Europe.



^{1/} This box was prepared by Haonan Qu.

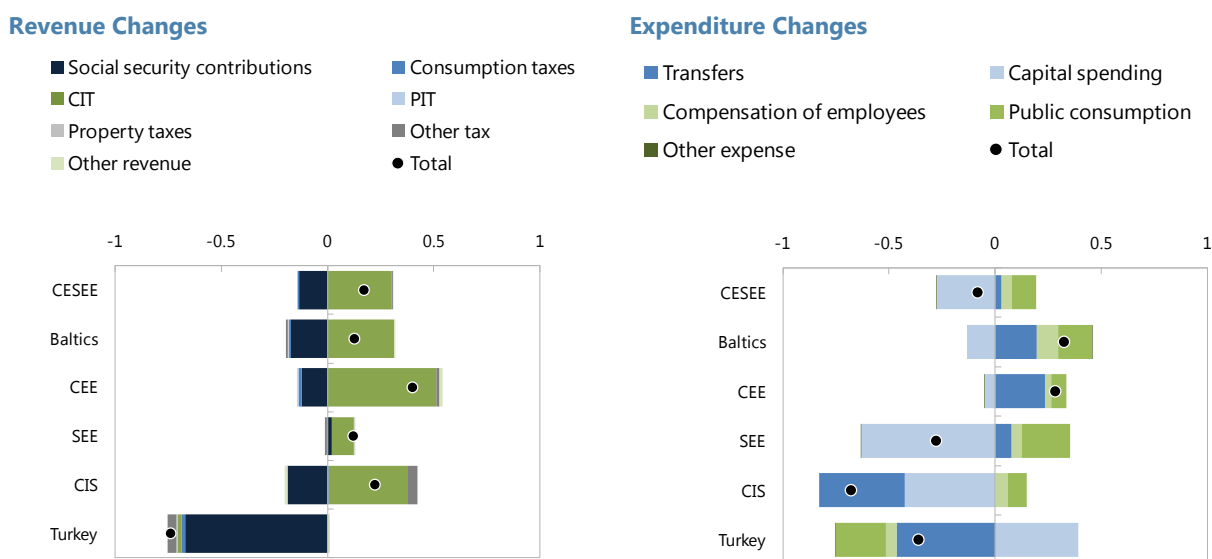
¹⁵ Tax wedge data does not include most Balkan and CIS countries. Many of these countries, however, have increased tax rates on labor income since 2008, such as Albania, Kosovo, and Moldova.

- Further, several countries consolidated *transfers*, with cuts exceeding 2 percentage points of potential GDP in Hungary, Bosnia and Herzegovina, and Lithuania. There is no coherent cross-country pattern on the transfer categories most affected; examples include public pensions—including by curtailing pensions for privileged groups—maternity benefits, and, in the case of Bosnia, transfers to war veterans. *Public consumption* was typically only a minor consolidation item, but exceeded one percentage point of potential GDP in Lithuania, Slovenia, Romania and the Czech Republic.¹⁶

How Growth Friendly Were Budget Changes?

Evaluating these changes with the help of the empirical model described above suggests that **CESEE’s shift from income taxes to indirect taxes and non-tax revenues improved the revenue structure**, as the tax burden shifted from taxes considered harmful to growth to broadly growth neutral forms of taxation (Figure 2.8). This pattern shows up in all sub-regions except Turkey (where large increases in social security contributions worsened the revenue structure). On a country-by-country basis, the model-based analysis suggests that 10 of 17 CESEE economies improved their revenue structures over 2008–14.

Figure 2.8. Growth Friendliness of Changes in Budget Structures, 2008–14
(Index)



Sources: IMF World Economic Outlook database; and IMF staff calculations.

¹⁶ As mentioned earlier, a consistent cross-country *functional* spending breakdown is not available. Eurostat figures for EU members through 2013 suggest that cuts on education and, especially, health spending have been limited (these numbers arguably include both public consumption and investment).

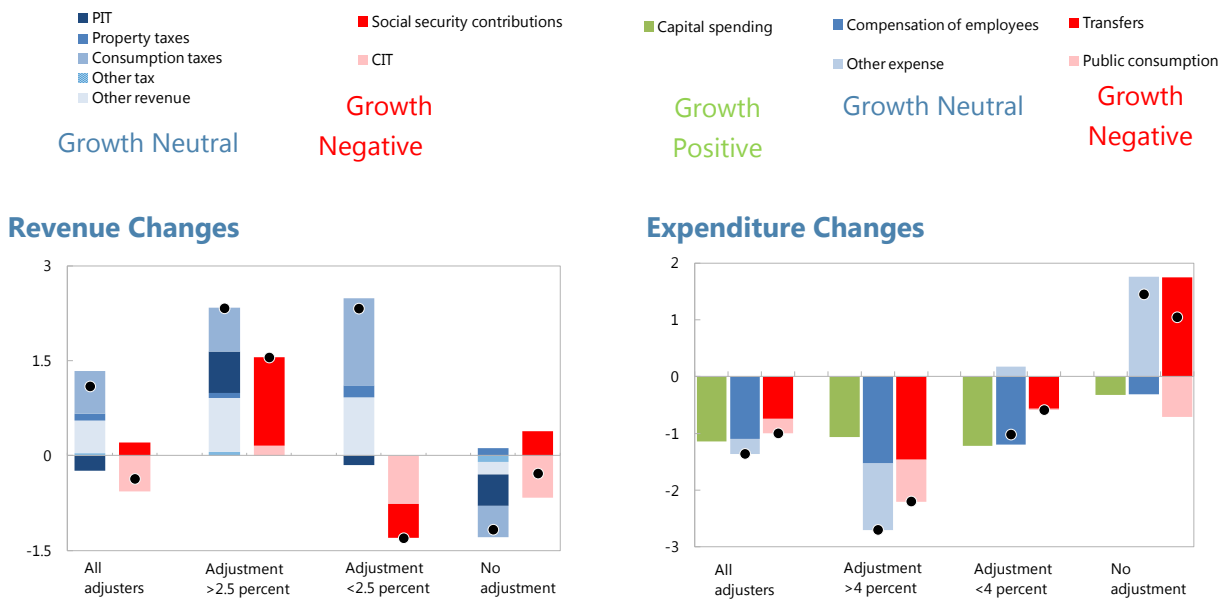
As for expenditures, the divergent patterns of consolidation translate into different estimated long-term growth effects. As Central European and Baltic countries reduced primarily current expenditures while preserving capital spending, their spending structures typically improved. By contrast, in Southeastern Europe and the CIS countries, public investment fell significantly, causing the expenditure structure to become less growth supportive. Overall, 6 of 17 countries improved their spending structures.

Quality and Size of Fiscal Consolidation

Does the size of fiscal adjustment affect its quality? And is expenditure-led or revenue-led consolidation more growth friendly? CESEE’s experience provides some insights. Figure 2.9 displays expenditure-side and revenue-side consolidation separately, and groups countries by whether expenditure/revenue-side adjustments were large or more modest. Further, Figure 2.9 shows which spending/revenue categories adjusted, and groups these into growth-positive (green), growth-neutral (blue) or growth-negative (red), in line with the analysis above.

- Growth friendly adjustment on the *revenue side* requires shifts in revenues away from categories like corporate income tax and social security contributions to consumption tax personal income tax, or property tax. In CESEE, such shifts occurred only when revenue-side adjustment was at most 2½ percentage points of potential GDP. Countries that increased revenues by even more resorted to raising social security contributions, which are associated with a detrimental impact on the budgetary structure.

Figure 2.9. Size vs. Composition of Adjustment, 2008–14
(Percent of potential GDP)



Sources: IMF World Economic Outlook database; and IMF staff calculations.

- On the *expenditure side*, cuts in public investment render adjustment growth unfriendly. In CESEE, large consolidation did *not* come with disproportionate cuts in investment. Instead, large adjusters realized savings primarily by curtailing public consumption and transfers—steps that ultimately enhanced the growth friendliness of their budgets, all else being equal.

While caution is warranted generalizing CESEE's experiences, **the results suggest that the scope for growth friendly revenue-based consolidation is limited.** Large adjustment should therefore contain a significant portion of spending-side measures, in particular in countries where overall spending levels are high.

Key Takeaways from the Analysis

Despite severe fiscal consolidation pressures in the wake of the global financial crisis, many CESEE countries managed to avoid deteriorations in their budgetary structures.

- *On the revenue side*, most countries were faced with large structural losses on corporate income tax, but managed to over-compensate for this by increasing revenues from less growth-harmful forms of taxation, in particular value added taxes.
- *On the spending side*, the Baltic and Central European countries typically managed to resist large cuts in public investment, reflecting in part the availability of EU structural funds. Large fiscal savings came instead from reforming entitlement programs and cutting public consumption. Consolidation in SEE and CIS countries, by contrast, resorted more to cuts in capital spending.
- In *Turkey*, both government spending and revenue grew in cyclically adjusted terms, yielding some deterioration in the budget structure. However, in contrast to much of the rest of CESEE, Turkey's starting position was strong, and its budget, in terms of its broad orientation, remains relatively growth friendly compared to peers.

Looking ahead, sizeable fiscal policy challenges remain in CESEE—and this chapter's analysis contains several recommendations how to address these.

- ***Fiscal consolidation has not yet run its course, especially in SEE.***

For countries with sizable remaining fiscal adjustment needs, the focus should be on reducing unproductive transfer and subsidies, and on further reforming entitlement programs, including public pension systems that absorb a large share of resources in CESEE. Restructuring the public sector may also be called for where the public sector wage bill is high, either because of excessive employment or disproportionately high public sector wages. Countries with access to EU structural and cohesion funds should seek to leverage these so as to avoid cuts in public investment.

On the revenue side, policy makers should focus on achieving a sizable part of adjustment through indirect taxes—notably VAT, especially when existing VAT rates are modest

compared with those of peers—and give consideration to the introduction or strengthening of carbon and property taxes. On income taxes, broadening tax bases by eliminating tax expenditures while reducing marginal rates is a priority.

- For ***countries that do not have urgent fiscal consolidation needs***, fiscal reform is still called for to enhance the quality and growth-friendliness of their budgets.
 - Where *corporate income taxes* are high, governments should seek to bring rates more in line with peers. If distributional aspects are a concern, a relatively growth friendly option is to eliminate instead exemptions from personal income tax.
 - While CESEE's high *transfers* arguably reflect a conscious policy choice in favor of equity, financing a larger portion from general taxation, particularly indirect taxes, instead of social security contributions would enhance the growth friendliness of the welfare state. A careful design is needed for social security contributions and their interaction with the withdrawal of social transfers upon taking up work, to avoid employment and poverty traps.
 - Growth friendly fiscal reform should seek to *enhance the amount and efficiency of health and capital spending*, while limiting unproductive transfers and subsidies.
- Finally, it is worth recalling that ***there are many issues critical for the quality of fiscal policy that go beyond this chapter***, but are covered in detail in other IMF publications (including IMF, 2014c, 2015a,c). These include: (i) enhancing spending efficiency, especially on health and public infrastructure; (ii) improving the design of fiscal policies, notably the careful calibration of transfers to limit any negative impact on labor supply; (iii) improving the composition of spending *within* expenditure categories, such as protecting spending on health and education within public consumption; and (iv) strengthening budget institutions to deliver more growth-friendly fiscal consolidation.

III. POLICY PRIORITIES

Supporting domestic demand, addressing crisis legacies, rebuilding buffers against external shocks, and improving the business environment to boost investment and long-term growth are still the key policy challenges for CESEE countries.

The country-specific priorities depend on how far along these economies are in the post-crisis adjustment and their exposure to external risks:

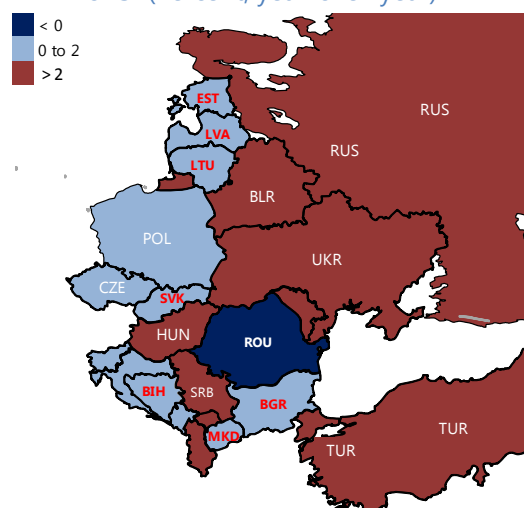
- *Where the recovery is well advanced*, the policy priorities need to increasingly shift toward the medium term, including rebuilding fiscal buffers and continuing with reforms to improve the business environment and address structural weaknesses. This is not to deny that there is still a lot of uncertainty about the strength of global recovery that, domestically, inflation is still too low in many CESEE economies, and that the key crisis legacies—high NPLs and debt overhangs—still need further work (notably in SEE).
- *For economies that are in recession* (Russia and other CIS countries), the key challenge is to steer the adjustment to terms-of-trade and other shocks with a view to supporting weak internal demand and reducing high inflation.
- *Countries vulnerable to external shocks*—such as those with large external financing needs, weak fiscal positions or high dependence on commodity exports—need to be prepared to deal with market pressures by using exchange rate flexibility as a shock absorber (Russia, Turkey) alongside macroprudential policies to contain the build-up of financial sector risks, and also gradually rebuilding FX-reserves buffers (Turkey).

Inflation Challenges

In low-inflation economies, monetary policy should remain accommodative. Additional policy action may be necessary if inflation expectations continue to decline, or interest-rate differentials widen, resulting in unwarranted upward pressure on exchange rates that could prove disinflationary. Countries that do not have monetary autonomy – euro peggers or euro area members – have less scope for policy action (Figure 3.1). Where activity is still sluggish and fiscal space allows, countries could use discretionary, expansionary fiscal policies.

For high-inflation economies, policies should aim to address excess demand pressures and external vulnerabilities to increase confidence in the currency.

Figure 3.1. CESEE: Headline Inflation, 2015 (Percent, year-over-year)



Source: IMF estimates;
Note: Euro area countries and euro peggers are in RED.

Fiscal Challenges

Despite improvements in their budgetary structures, CESEE countries face significant fiscal challenges. Most CESEE countries still face sizable adjustment needs to stabilize debt levels and/or return to full compliance with the EU's fiscal rules. The need for further consolidation tends to be larger in SEE. The analysis in this report offers some insights.

Countries with sizable fiscal adjustment needs (mostly in SEE; Figure 3.2) could achieve more growth-friendly fiscal consolidation via cutbacks in subsidies and tax incentives, reforms to entitlement programs, and the introduction or strengthening of modern property tax regimes. In a number of economies, tax compliance and administration need to be improved. At the same time, productive public investment should be shielded from cuts. EU member states should increase the absorption of EU funds and increase their focus on projects that could better enhance potential growth.

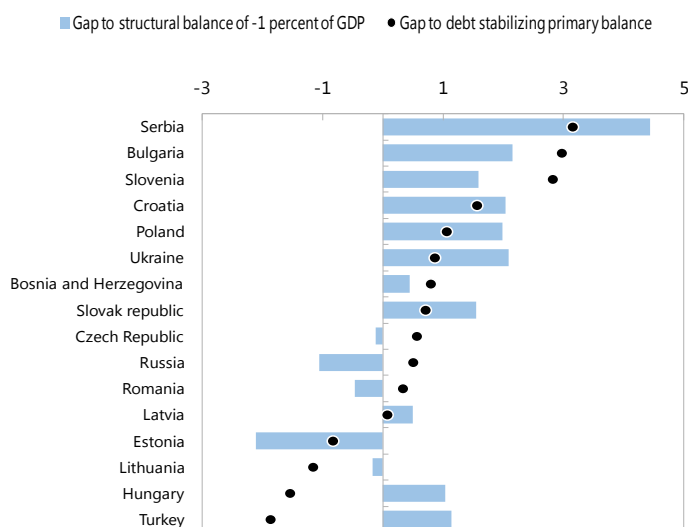
Countries that do not have urgent consolidation needs could

concentrate their efforts on improving their budgetary structures. This would involve reducing corporate income taxes in line with peers or replacing corporate income taxation with increased personal income taxation, especially for higher earners; financing a larger portion of social spending from general taxation, particularly the VAT, instead of social security contributions; and taking steps to enhance the amount and efficiency of health and capital spending, while limiting unproductive transfers and subsidies.

Balance-Sheet Repair

Addressing high NPLs and debt overhangs requires a comprehensive approach. A recent IMF study on the causes and consequences of persistently high NPLs in Europe (Aiyar and others 2015) finds that the weak economic recovery is only part of the story and that the underlying reasons are often deep rooted. A new survey of European country authorities and banks shows that deficiencies in the legal framework and underdeveloped distressed debt markets are, on average, seen as the most severe obstacles to distressed debt resolution in countries with high NPL levels across Europe.

Figure 3.2. CESEE: Estimated Remaining Adjustment Needs (Percent of GDP)



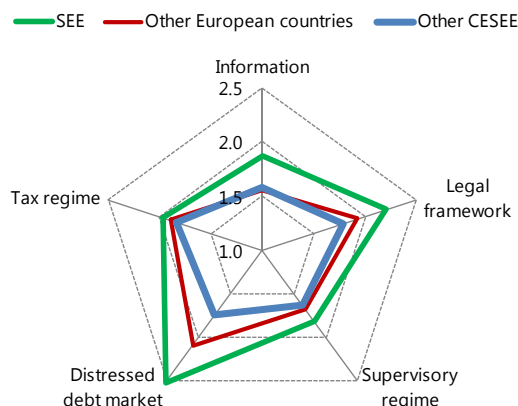
Note: The debt stabilizing primary balance uses current debt level as a benchmark; -1 percent of GDP is the European Commission's Medium Term Objective for many CESEE countries. Neither metric gives a full account of fiscal consolidation needs.

For SEE countries, obstacles to NPL resolution related to information access, legal systems, and distressed debt market functioning are regarded as more severe than in other European countries with high NPLs (Figure 3.3). Furthermore, different obstacles tend to be interlinked, with difficulties in one area compounding challenges in others. Thus, resolving high NPLs requires a comprehensive strategy that includes tightened supervisory policies, insolvency reforms, and measures to develop distressed debt markets (see Aiyar and others 2015 for detailed recommendations).

Long-term growth challenges

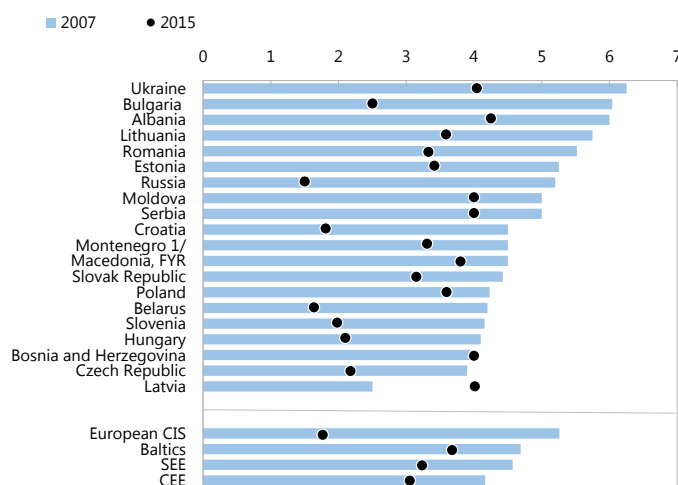
Lifting potential growth is a key medium-term goal for CESEE countries. For much of the region, long-term growth forecasts are now substantially lower than before the crisis (Figure 3.4), largely due to lower total factor productivity. Capital flows to the region are and will likely remain significantly below pre-crisis levels. At the same time demographic dynamics are markedly negative in many countries across the region. In this context, sustained productivity gains can only materialize through structural reforms focused on expanding the role of the private sector, increasing labor and product market flexibility, accelerating the restructuring of loss-making state-owned enterprises, and improving the efficiency of public administrations and the judiciary.

Figure 3.3. IMF Survey-Based Scores on Obstacles to the Resolution of Nonperforming Loans



Source: IMF surveys of country authorities and banks.
 Notes: The figure shows average obstacle scores based on the survey responses of European countries with high numbers (over 10 percent of gross loans at postcrisis peak) in each of five areas (information, supervisory framework, tax regime, legal framework, and distressed debt market). The scores range from 1 to 3, where 3 = high degree of concern, 2 = medium degree of concern; and 1 = no concern. CESEE = Central, Eastern, and Southeastern Europe.; SEE=Southeastern Europe.

Figure 3.4. CESEE: Long-Term Growth Forecasts in 2007 and 2015 (Percent)



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

Annex I. CESEE: Growth of Real GDP, Domestic Demand, Exports, and Private Consumption, 2013–16

(Percent)

	Real GDP Growth				Real Domestic Demand Growth				Real Export Growth (goods and services)				Real Private Consumption Growth			
	2013	2014	2015	2016	2013	2014	2015	2016	2013	2014	2015	2016	2013	2014	2015	2016
Baltics¹	3.2	2.8	1.9	2.9	2.7	3.8	3.8	4.2	6.0	2.7	1.0	2.4	4.7	4.1	4.5	4.0
Estonia	1.6	2.9	2.0	2.9	2.0	4.1	0.2	3.2	4.7	1.7	0.5	3.2	3.8	3.3	4.4	3.6
Latvia	4.2	2.4	2.2	3.3	3.1	1.9	1.8	5.1	1.4	2.2	1.4	1.8	6.2	2.3	2.9	4.4
Lithuania	3.3	2.9	1.8	2.6	2.8	4.7	6.7	4.2	9.4	3.4	1.0	2.4	4.2	5.6	5.5	4.0
Central and Eastern Europe¹	1.2	3.1	3.4	3.1	0.2	4.1	3.2	3.5	4.0	6.6	5.9	5.8	0.6	2.4	3.1	3.1
Czech Republic	-0.5	2.0	3.9	2.6	-0.6	2.3	4.4	3.0	0.0	8.9	6.3	6.2	0.7	1.5	3.2	3.2
Hungary	1.5	3.6	3.0	2.5	1.2	4.3	1.0	2.1	5.9	8.7	8.0	6.8	0.2	1.5	2.6	2.6
Poland	1.7	3.4	3.5	3.5	0.4	5.0	3.4	4.1	4.8	5.7	5.4	5.7	1.2	3.0	3.5	3.4
Slovak Republic	1.4	2.4	3.2	3.6	0.0	3.0	3.4	3.8	5.2	4.6	5.2	5.5	-0.7	2.2	2.4	2.7
Slovenia	-1.1	3.0	2.3	1.8	-2.2	1.6	1.9	1.9	3.1	5.8	5.1	3.7	-4.1	0.7	2.1	1.7
Southeastern Europe-EU¹	2.3	2.1	2.6	3.0	-1.0	2.0	2.6	3.6	12.8	6.8	7.4	5.5	0.0	3.2	3.8	4.9
Bulgaria	1.1	1.7	1.7	1.9	-1.3	2.7	-0.1	1.7	9.2	2.2	11.2	3.3	-2.3	2.0	1.0	2.5
Croatia	-1.1	-0.4	0.8	1.0	-1.1	-1.7	-0.1	0.4	3.1	7.3	6.4	6.0	-1.8	-0.7	0.4	1.0
Romania	3.4	2.8	3.4	3.9	-0.8	2.7	4.1	4.9	16.2	8.1	6.4	6.1	1.2	4.5	5.5	6.5
Southeastern Europe-non-EU¹	2.5	0.4	1.8	2.6	-1.0	1.0	1.6	2.7	12.6	6.1	7.0	5.3	0.7	0.5	0.6	2.1
Albania	1.4	1.9	2.7	3.4	0.6	2.4	3.0	4.2	7.9	7.1	4.6	3.8	1.8	0.9	1.2	2.7
Bosnia and Herzegovina	2.5	1.1	2.1	3.0	0.6	3.2	2.0	3.4	8.2	4.6	5.2	7.0	2.4	2.4	2.6	3.3
Kosovo	3.4	2.7	3.2	3.8	...	...	...	...	2.5	15.3	4.2	4.6	...	...	...	...
Macedonia, FYR	2.7	3.8	3.2	3.2	-2.6	4.5	3.8	3.5	-2.7	17.0	7.7	6.7	2.1	2.3	2.0	2.1
Montenegro	3.3	1.5	3.2	4.9	0.3	2.4	6.4	9.8	0.1	-1.2	1.3	4.4	-1.6	5.3	0.1	11.0
Serbia	2.6	-1.8	0.5	1.5	-1.9	-1.5	-0.1	0.9	21.3	3.9	9.0	4.8	-0.6	-1.3	-0.8	0.5
European CIS countries¹	1.2	0.0	-4.3	-0.4	1.5	-1.9	-13.2	-0.7	2.6	-1.1	1.7	-0.9	5.2	0.4	-10.7	0.4
Belarus	1.0	1.6	-3.6	-2.2	8.6	-0.7	-4.9	-2.5	-16.0	7.0	-8.6	-0.8	10.8	4.4	-5.7	-2.6
Moldova	9.4	4.6	-1.0	1.5	4.9	2.8	-6.6	-0.4	10.7	1.1	0.1	5.0	6.5	3.0	-2.0	1.7
Russia	1.3	0.6	-3.8	-0.6	1.2	-0.9	-13.8	-1.0	4.6	-0.1	4.0	-1.5	4.8	1.2	-10.8	0.3
Ukraine	0.0	-6.8	-9.0	2.0	1.2	-11.6	-11.9	2.7	-8.1	-14.5	-16.3	4.4	6.9	-9.5	-12.8	2.6
Turkey	4.2	2.9	3.0	2.9	6.7	1.1	3.5	2.8	-0.2	6.8	0.3	4.3	5.1	1.4	3.5	2.6
CESEE^{1,2}	1.9	1.4	-0.6	1.3	2.0	0.4	-4.9	1.3	3.4	2.8	2.9	2.3	3.8	1.3	-3.6	1.8
Emerging Europe^{1,3}	2.0	1.3	-0.9	1.2	2.1	0.2	-5.7	1.1	3.5	2.4	2.7	2.0	4.0	1.2	-4.3	1.7
New EU member states^{1,4}	1.6	2.8	3.2	3.1	0.1	3.6	3.1	3.6	6.3	6.4	5.9	5.5	0.7	2.7	3.4	3.6
Memorandum																
Euro Area ¹	-0.3	0.9	1.5	1.6	-0.7	0.9	1.4	1.6	2.1	3.9	4.7	4.5	-0.6	0.9	1.8	1.5
European Union ¹	0.3	1.5	1.9	1.9	-0.2	1.7	1.8	2.0	2.4	3.5	5.2	4.6	0.0	1.4	2.2	2.0

Source: IMF, World Economic Outlook database.

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, Macedonia FYR, 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,
2013–16**
(Percent)

	CPI Inflation (Period average)				CPI Inflation (End of period)				Current Account Balance to GDP				Total External Debt to GDP			
	2013	2014	2015	2016	2013	2014	2015	2016	2013	2014	2015	2016	2013	2014	2015	2016
Baltics ¹	1.3	0.4	0.0	1.7	0.6	0.0	0.7	1.7	-0.2	-0.8	-1.4	-1.9	93.3	91.6	88.0	85.9
Estonia	3.2	0.5	0.2	1.6	2.0	0.0	0.4	2.1	-1.1	0.1	0.6	0.3	95.6	94.6	94.7	92.7
Latvia	0.0	0.7	0.4	1.8	-0.4	0.3	1.8	1.7	-2.3	-3.1	-1.7	-2.7	131.4	138.6	132.7	135.1
Lithuania	1.2	0.2	-0.4	1.6	0.5	-0.2	0.2	1.5	1.6	0.1	-2.2	-2.4	69.2	61.8	57.8	53.0
Central and Eastern Europe ¹	1.2	0.0	-0.4	1.3	0.8	-0.7	0.4	1.8	0.1	0.2	1.0	0.5	81.0	74.5	78.9	73.7
Czech Republic	1.4	0.4	0.4	1.5	1.4	0.1	0.5	1.9	-0.5	0.6	1.7	1.2	63.5	66.7	62.5	60.4
Hungary	1.7	-0.2	0.3	2.3	0.4	-0.9	2.0	2.4	4.0	4.0	5.0	4.3	122.8	106.8	102.5	85.4
Poland	0.9	0.0	-0.8	1.0	0.7	-1.0	0.1	1.6	-1.3	-1.3	-0.5	-1.0	73.0	64.6	73.5	69.2
Slovak Republic	1.5	-0.1	-0.1	1.4	0.4	-0.1	0.5	1.6	1.5	0.1	0.1	0.1	84.7	83.7	90.1	90.0
Slovenia	1.8	0.2	-0.4	0.7	0.7	0.2	-0.2	1.9	5.6	7.0	6.7	6.2	119.7	115.2	123.3	124.2
Southeastern Europe-EU ¹	3.0	0.3	-0.5	0.2	0.9	0.1	-0.2	1.1	0.1	-0.2	0.0	-0.7	80.8	70.4	69.3	66.6
Bulgaria	0.4	-1.6	-0.8	0.6	-0.9	-2.0	0.3	0.9	2.3	0.0	1.0	0.2	93.9	87.4	89.1	88.4
Croatia	2.2	-0.2	-0.4	1.1	0.3	-0.5	0.4	1.3	0.8	0.7	1.7	1.5	109.4	98.9	101.3	97.3
Romania	4.0	1.1	-0.4	-0.2	1.6	0.8	-0.5	1.1	-0.8	-0.4	-0.7	-1.5	70.1	58.4	55.7	52.5
Southeastern Europe-non-EU ¹	4.5	1.0	1.3	2.4	1.3	0.8	1.9	3.0	-6.5	-7.3	-6.7	-7.2	65.1	62.7	69.6	70.7
Albania	1.9	1.6	2.2	2.5	1.9	0.7	2.3	2.7	-10.7	-13.0	-13.2	-13.5	35.5	34.2	43.0	46.0
Bosnia and Herzegovina	-0.1	-0.9	0.5	1.1	-1.4	-0.5	1.0	1.6	-5.8	-7.7	-7.7	-7.6	52.2	51.9	55.8	55.9
Kosovo	1.8	0.4	-0.5	0.5	0.5	-0.4	0.0	1.5	-6.4	-8.0	-8.0	-10.5	...	...	...	...
Macedonia, FYR	2.8	-0.1	0.1	1.3	1.4	-0.4	0.8	1.7	-1.8	-1.3	-3.2	-4.4	66.4	64.7	68.2	72.6
Montenegro	2.2	-0.7	1.7	1.4	0.3	-0.3	1.8	1.5	-14.6	-15.4	-17.0	-20.8	153.1	164.4	173.5	177.1
Serbia	7.7	2.1	1.6	3.4	2.2	1.8	2.5	4.1	-6.1	-6.0	-4.0	-3.8	82.4	76.9	86.3	86.3
European CIS countries ¹	6.6	8.6	18.6	9.3	6.3	12.7	16.5	9.0	0.1	2.0	3.9	4.3	40.0	43.1	58.5	59.4
Belarus	18.3	18.1	15.1	14.2	16.5	16.2	16.9	12.3	-10.4	-6.7	-4.9	-4.3	55.4	54.6	66.5	63.8
Moldova	4.6	5.1	8.4	7.4	5.2	4.7	9.0	7.3	-5.0	-3.7	-6.2	-6.4	83.1	82.9	103.6	100.5
Russia	6.8	7.8	15.8	8.6	6.5	11.4	13.5	8.5	1.6	3.2	5.0	5.4	35.1	36.4	48.6	50.1
Ukraine	-0.3	12.1	50.0	14.2	0.5	24.9	45.8	12.0	-9.2	-4.7	-1.7	-1.6	78.3	100.4	147.7	144.8
Turkey	7.5	8.9	7.4	7.0	7.4	8.2	8.0	6.5	-7.9	-5.8	-4.5	-4.7	47.3	50.4	57.2	60.6
CESEE ^{1,2}	5.2	5.9	10.2	6.1	4.7	7.6	9.7	6.1	-1.5	-0.2	1.1	1.1	54.5	54.4	64.1	63.9
Emerging Europe ^{1,3}	5.5	6.4	11.1	6.5	5.1	8.3	10.6	6.5	-1.7	-0.3	1.2	1.2	52.2	52.0	62.7	62.6
New EU member states ^{1,4}	1.6	0.1	-0.4	1.0	0.8	-0.5	0.3	1.6	0.1	0.1	0.6	0.1	81.8	74.6	77.1	72.7

Source: IMF, World Economic Outlook database.

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, Macedonia FYR, 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, 2013–16¹ (Percent of GDP)

	General Government Balance				Public Debt			
	2013	2014	2015	2016	2013	2014	2015	2016
Baltics²	-1.5	-0.7	-1.2	-1.1	31.3	33.2	32.2	31.9
Estonia	-0.5	0.6	-0.7	-0.5	9.9	10.4	10.8	10.8
Latvia ³	-0.6	-1.7	-1.4	-1.1	35.2	37.8	37.8	37.0
Lithuania	-2.6	-0.7	-1.2	-1.4	38.8	40.9	38.8	38.5
Central and Eastern Europe²	-3.5	-3.0	-2.6	-2.3	57.3	54.0	53.9	53.7
Czech Republic	-1.2	-2.0	-1.8	-1.1	45.1	42.6	40.6	40.0
Hungary	-2.5	-2.6	-2.7	-2.3	77.3	77.0	75.3	74.2
Poland	-4.0	-3.2	-2.8	-2.5	55.7	50.1	51.1	51.0
Slovak Republic	-2.6	-2.9	-2.5	-2.6	54.6	53.6	53.3	53.6
Slovenia ³	-14.4	-6.3	-4.1	-5.7	70.5	80.8	81.8	82.7
Southeastern Europe-EU²	-2.7	-2.8	-2.3	-2.7	40.4	44.1	45.3	46.3
Bulgaria ³	-1.8	-3.7	-2.0	-1.6	17.6	26.9	28.6	29.6
Croatia ³	-5.4	-5.7	-5.1	-4.4	80.8	85.1	89.3	91.8
Romania	-2.5	-1.9	-1.8	-2.6	38.8	40.6	40.9	41.5
Southeastern Europe-non-EU²	-4.5	-5.1	-3.8	-3.7	55.0	61.9	64.6	65.3
Albania ³	-5.2	-5.4	-5.1	-4.2	70.1	72.5	73.3	70.2
Bosnia and Herzegovina	-1.9	-3.6	-1.5	-1.2	41.6	44.8	45.5	45.0
Kosovo ^{3,4}	-3.0	-2.5	-2.4	-3.1	17.5	18.7	21.8	26.0
Macedonia, FYR	-3.9	-4.2	-4.0	-3.8	34.2	38.2	37.1	39.6
Montenegro ³	-5.2	-1.3	-10.0	-10.1	55.8	60.5	69.9	73.8
Serbia ³	-5.6	-6.7	-4.0	-3.9	61.4	72.2	76.7	78.4
European CIS countries²	-1.6	-1.4	-5.4	-3.8	17.5	23.6	28.0	28.5
Belarus ^{3,5}	-0.8	0.4	-2.4	-2.3	38.1	40.5	40.4	44.6
Moldova ³	-1.8	-1.7	-3.9	-3.7	23.8	31.5	44.8	44.9
Russia ³	-1.3	-1.2	-5.7	-3.9	14.0	17.8	20.4	21.0
Ukraine ³	-4.8	-4.5	-4.2	-3.7	40.7	71.2	94.4	92.1
Turkey ³	-1.7	-1.4	-1.3	-1.1	36.1	33.6	32.1	32.6
CESEE ^{2,6}	-2.2	-1.9	-3.7	-2.9	32.0	34.3	36.4	36.7
Emerging Europe ^{2,7}	-2.1	-1.9	-3.9	-3.0	30.7	33.3	35.6	36.0
New EU member states ^{2,8}	-3.2	-2.8	-2.4	-2.3	51.5	50.2	50.4	50.5

Source: IMF, World Economic Outlook database.

¹ As in the WEO, general government balances reflect 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 2014 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 banks 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, Macedonia FYR, Moldova, Montenegro, Poland, Romania, Russia, Serbia, Slovak Republic, Slovenia, Turkey, and Ukraine.

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. Methodology to Obtain Cyclically-Adjusted Revenues/Expenditures¹⁷

A cyclical adjustment was applied to revenues/expenditures following the disaggregated approach proposed in Bornhorst and others (2011). The purpose of cyclical adjustment is to decompose the overall balance into cyclical and cyclically adjusted components:

$$OB = CB + CAB \quad (1)$$

where OB is the overall balance, CB is the cyclical balance (the part of the fiscal overall balance that automatically reacts to the business cycle), and CAB is the cyclically adjusted balance (the part of the overall balance that is left after cyclical movements are taken out), expressed in nominal terms. The disaggregated approach computes the cyclically adjusted balance as a function of individual cyclically adjusted revenue and expenditure categories:

$$CAB = (\sum_{i=1}^N R_i^{CA}) - G^{CA} + R^{NCA} - G^{NCA} \quad (2)$$

where R_i^{CA} represents the cyclically adjusted component of the i -th revenue category, G^{CA} represents cyclically adjusted primary expenditures, while R^{NCA} and G^{NCA} contain all revenue/ expenditure categories that do not require cyclical adjustment (Girouard and Andre, 2005).

On the revenue side, the elasticity of each revenue category can be decomposed into two factors. The output elasticity of tax revenue ($\varepsilon_{R_i,Y}$) is the product of the elasticity of tax revenues (R_i), with respect to the relevant tax base (B_i), ε_{R_i,B_i} , and the elasticity of the tax base relative to the output gap, $\varepsilon_{B_i,Y}$:

$$\varepsilon_{R_i,Y} = \varepsilon_{R_i,B_i} \cdot \varepsilon_{B_i,Y} \quad (3)$$

Applying this decomposition to the computation of cyclically adjusted revenue yields:

$$R_i^{CA} = R_i \left(\left(\frac{Y^*}{Y} \right)^{\varepsilon_{B_i,Y}} \right)^{\varepsilon_{R_i,B_i}} \quad (4)$$

Assuming, or deriving, the value of the tax elasticity with respect to its base is the first step. In addition to statutory tax rates, derivation also requires knowledge of the income distribution. The second step is an econometric estimation of the sensitivity of the relevant tax bases with respect to the output gap. This requires specifying macroeconomic proxies for the tax bases. For income taxes and social security contributions a common proxy is the wage bill, for corporate income taxes, the tax base is a measure of corporate profits, whereas private consumption serves as a base for indirect taxes. With these two elasticities at hand, the elasticities of tax revenue with respect to the output gap can be computed. The resulting elasticities of revenue categories with respect to the output gap are usually larger than one for income taxes (reflecting progressivity), around one for indirect taxes

¹⁷ Prepared by Ernesto Crivelli.

(reflecting generally flat indirect (VAT) tax rates), and somewhat smaller than one for social security contributions. For practical reasons, the elasticities of the several revenue components with respect to the output gap were drawn from Girouard and Andre (2005), taking the mid-point of their estimated elasticities. As such, we assume an elasticity of 1.3 for personal income taxes, of 1.5 for taxes on corporate profits, of 0.7 for social security contributions, and of 1 for indirect taxes, including taxes on goods and services and property tax.

Similarly on the expenditure side, the elasticities can also be decomposed into two factors.

Current transfers—in particular unemployment benefits—are most likely to display a cyclical behavior owing to the benefit system. In contrast, nominal spending on other items such as wages and goods and services or capital spending is likely to be largely independent of the business cycle, not requiring any adjustment. As with revenues, the elasticities of expenditure with respect to the base can be assumed or derived. For simplicity, we only adjust the expenditure on social benefits, assuming an elasticity of -0.5. For all other expenditure categories, the elasticity relative to the output gap is assumed to be zero. All results in the chapter are robust to changes in elasticities.

Annex V. Country Coverage¹⁸

The empirical analysis in this chapter covers 76 countries during 1990-2014 including CESEE, as well as other advanced and emerging economies whose 2014 GDP (constant 2005 USD, PPP) is greater than 3.7 billion USD (20th percentile of all advanced and emerging economies), and for which cyclically-adjusted fiscal variables can be computed.

The sample includes the following countries:

- **CESEE:** Bulgaria, Bosnia and Herzegovina, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Moldova, Poland, Romania, Russia, Serbia, Slovak Republic, Slovenia, Turkey, Ukraine.
- **Advanced Europe:** Austria, Belgium, Switzerland, Cyprus, Germany, Denmark, Spain, Finland, France, Greece, Ireland, Italy, Luxemburg, Netherlands, Norway, Portugal, Sweden, and United Kingdom.
- **Other advanced:** Australia, Canada, Israel, Japan, New Zealand, and United States of America.
- **Asia:** China, Indonesia, India, Malaysia, Philippines, Singapore, and Thailand.
- **Latin America and the Caribbean:** Argentina, Bahamas, The, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Peru, Uruguay, and Venezuela.
- **Africa:** Kenya, Mauritius, and South Africa.
- **Middle East and Central Asia:** Armenia, Algeria, Egypt, Georgia, Kazakhstan, Korea, Lebanon, Pakistan, and Tunisia.

¹⁸ Prepared by Ernesto Crivelli.

Annex VI. Budget Structures and Country Characteristics¹⁹

To compare the budget structure of CESEE countries with that of comparator countries, expenditure and revenue categories are regressed on structural country characteristics. Using the sample of countries defined in Annex V, we estimate equations of the form:

$$Fiscal_{it} = \alpha_i + \beta_3 X_{it} + \varepsilon_{it} \quad (1)$$

where the index $i=1,\dots,N$ and $t=2008, 2014$ are respectively country- and time-indicators. In Eq. (1), *Fiscal* is a set of cyclically-adjusted expenditure and revenue variables, expressed relative to potential GDP, and *X* is a set economic characteristics. In order to assess changes to the budget structure since the global financial crisis, Eq. (1) is estimated for two separate years: 2008 and 2014.

Revenues and expenditure, taken from the World Economic Outlook (WEO) Database, refer to consolidated general government, and are cyclically adjusted in percent of potential GDP. In addition, the IMF's Fiscal Affairs Department Revenue database and Article IV consultation reports were used to fill gaps in the data series. For spending categories, four categories are considered in addition to total spending: public consumption of goods and services, compensation of employees, transfers, and capital spending. For revenues, four categories are considered on top of total revenues: taxes on corporate profits (CIT), taxes on goods and services, social security contributions, and the personal income tax (PIT). Structural country characteristics are from the World Development Indicator Database: GDP per capita (in 2005 USD, PPP), log of GDP, dependency ratio (the ratio of dependents—people younger than 15 or older than 64—to the working-age population—those ages 15-64), trade openness (sum of exports and imports of goods and services to GDP), population density (number of people per sq. km. of land area), and natural resource rents (in percent of GDP).

Annex Table VI.1 below presents the results for spending and revenue categories. Per capita GDP is generally found positively and statistically significantly correlated with expenditure and revenue components, which is supportive of the Wagner's law. A higher GDP per capita potentially increases the demand for public services in reflection of a higher degree of economic and institutional sophistication, also requiring higher government revenues. The negative coefficient on public investment could, in turn, reflect structural economic transformation (e.g. Turrini (2004)). Economy size (log GDP) appears to be negatively correlated with public investment, but has strong positive correlation with revenues from social contributions and expenses related to transfers. In addition a high dependency ratio tends to be associated with lower expenditure and lower revenues from consumption taxes. Coefficient estimates on trade openness are mostly statistically insignificant, except for revenues from social contributions, which may reflect higher demand for social insurance against external risks in more open economies (e.g. Rodrik (1998)). Population density matters according to the empirical results: higher population density could imply higher urbanization of the economy which helps improve efficiency of public sector operation. Resource rich economies have

¹⁹ Prepared by Haonan Qu and Faezeh Raei.

Annex Table VI.1: Government Budget Structure and Structural Characteristics

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Total Expenditure	Compensation of Employees	Public Consumption	Public Investment	Transfers	Total Revenue	Consumption Taxes	PIT	CIT	Social Contributions
GDP per capita	0.278*** (0.000)	0.095*** (0.000)	0.033** (0.049)	-0.034** (0.019)	0.108*** (0.008)	0.363*** (0.000)	-0.012 (0.652)	0.172*** (0.000)	0.035* (0.093)	0.008 (0.801)
Log GDP	0.122 (0.854)	-0.320 (0.147)	0.012 (0.956)	-0.421** (0.010)	0.790* (0.083)	0.041 (0.950)	-0.407 (0.207)	-0.030 (0.900)	-0.019 (0.891)	0.983*** (0.006)
Dependency ratio	-0.246*** (0.007)	-0.052 (0.114)	-0.057** (0.020)	-0.005 (0.869)	-0.037 (0.661)	-0.231*** (0.007)	-0.083** (0.027)	0.0501 (0.235)	0.0117 (0.569)	-0.052 (0.366)
Openness	-0.003 (0.900)	-0.012 (0.134)	-0.008 (0.147)	0.006 (0.110)	0.0232 (0.101)	0.001 (0.984)	0.001 (0.962)	-0.013 (0.195)	-0.003 (0.642)	0.028** (0.013)
Population density	-0.004*** (0.000)	-0.001*** (0.000)	-0.001 (0.992)	0.001 (0.958)	-0.003*** (0.000)	-0.003*** (0.001)	-0.002*** (0.000)	-0.004*** (0.001)	0.001 (0.776)	-0.002*** (0.000)
Natural resource rents	-0.058 (0.628)	-0.0420 (0.208)	-0.056** (0.023)	0.171** (0.019)	-0.220*** (0.001)	0.050 (0.594)	-0.138*** (0.001)	-0.059*** (0.008)	0.125** (0.037)	-0.197*** (0.000)
Constant	43.02*** (0.001)	14.95*** (0.000)	8.380*** (0.008)	7.547*** (0.004)	1.966 (0.799)	38.190*** (0.001)	19.87*** (0.001)	2.641 (0.533)	1.897 (0.430)	-3.036 (0.619)
Observations	142	129	128	141	119	142	121	98	98	117
R-squared	0.328	0.306	0.111	0.383	0.376	0.423	0.221	0.547	0.374	0.313

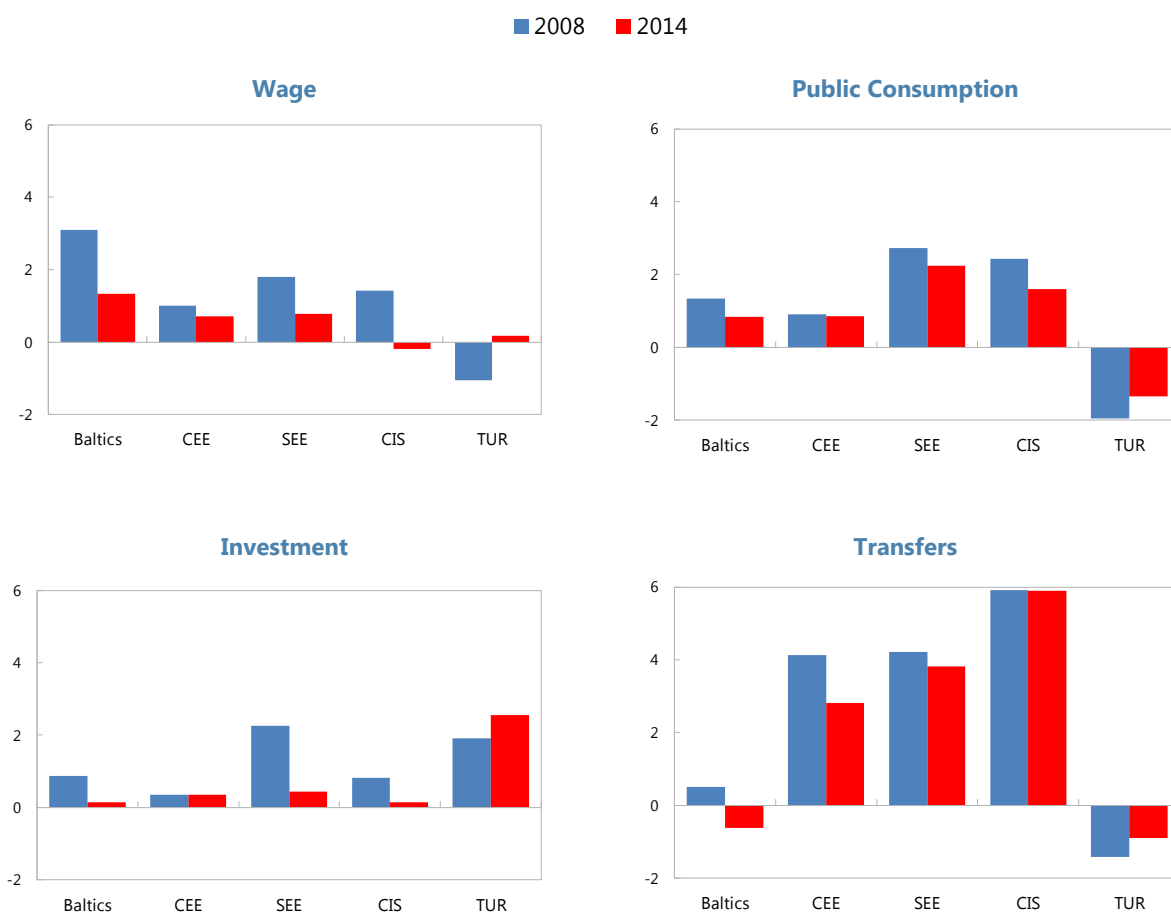
Robust p-values in parentheses

*** p<0.01, ** p<0.05, * p<0.1

different budget structures that are broadly reflected in the estimated coefficients: on the revenue side, resource-rich economies tend to collect less from non-resource tax revenues (Crivelli and Gupta, 2014), except for the CIT tax on companies operating in natural resource sectors. On the expenditure side, there is usually high infrastructure investment needs from natural resource sectors.

The residuals from the estimated equations on revenue and expenditure components are used to assess budget structures in CESEE relative to their structural characteristics. On the expenditure side, current spending (wages and consumption of goods and services) is relatively high in CESEE as compared to the level consistent with the country’s structural characteristics, except for Turkey. When assessing the changes over time, however, both categories of spending—in particular the public sector wage bill—shows a significant drop in SEE, CIS, and Baltic countries from 2008 to 2014. As for public investment, its level in 2008 appears particularly high in SEE and Turkey, with SEE, CIS, and Baltic countries experiencing a significant drop over time. Transfers, however, have remained high among CEE, SEE, and CIS countries. On the revenue side, many CESEE countries except for CIS countries managed to increase their reliance on taxes

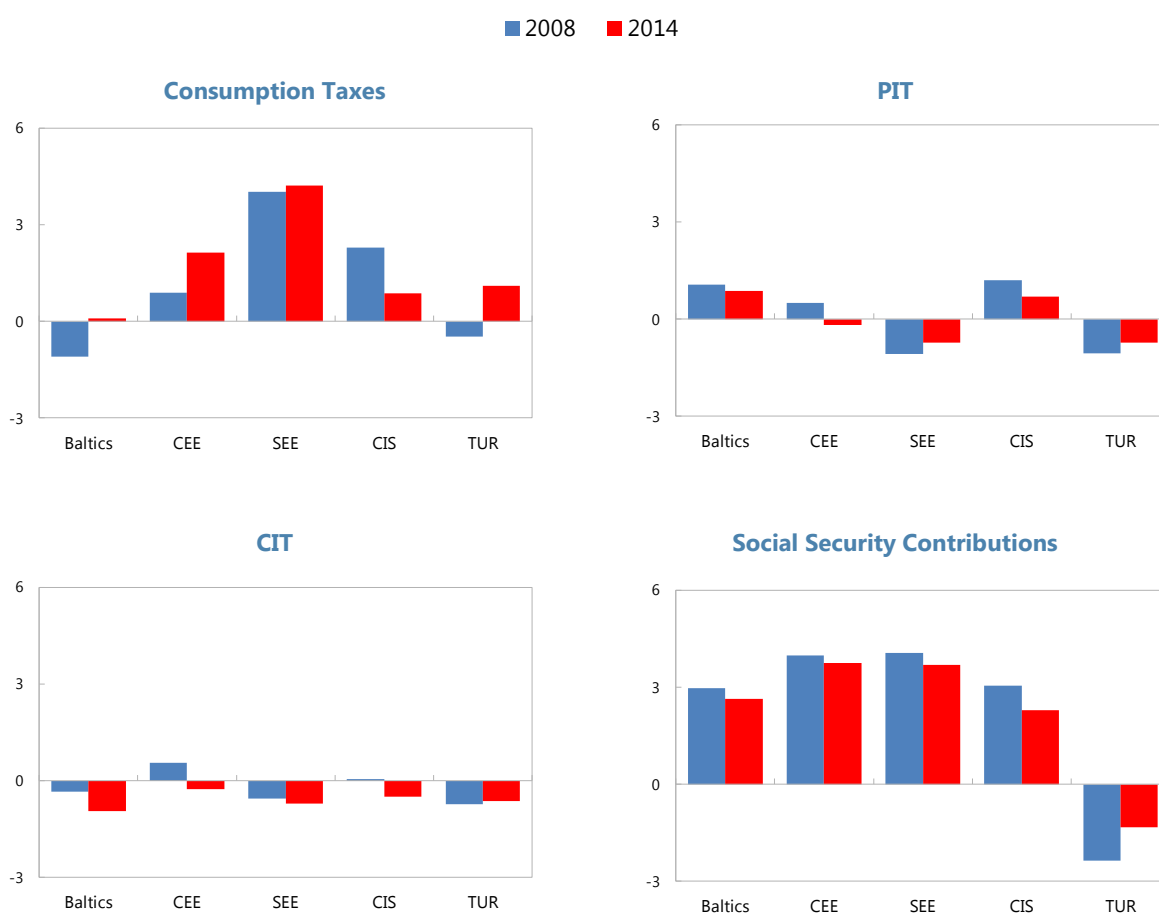
Annex Figure 1. Residuals from Expenditure Benchmarking Regressions
(Percent of potential GDP)



Sources: IMF World Economic Outlook database; and IMF staff calculations.

on goods and services since 2008, although some countries, such as CEE and SEE, already had relatively high levels. Additionally, CESEE economies have on average brought down CIT revenues, except for Turkey. Nevertheless, changes in labor income taxes—including social contributions—are moderate, and levels remain high compare to country's structural characteristics.

Annex Figure 2. Residuals from Revenue Benchmarking Regressions
(Percent of potential GDP)



Sources: IMF World Economic Outlook database; and IMF staff calculations.

Annex VII. Fiscal Policy Instruments and Economic Growth: A Panel Data Analysis²⁰

The relationship between revenue and expenditure variables and economic growth is estimated using unbalanced panel data for 76 developing and advanced countries during 1990-2014. The empirical methodology follows that in Afonso and Alegre (2011), in estimating a dynamic growth equation as follows:

²⁰ Prepared by Ernesto Crivelli.

$$y_{it} = \alpha_i + \beta_1 y_{it-1} + \beta_2 Fiscal_{it} + \beta_3 X_{it} + \mu_t + \varepsilon_{it} \quad (1)$$

where the index $i=1,\dots,N$ and $t=1,\dots,L$ are respectively country- and time-indicators (so that α_i and μ_t are country- and time-specific effects). In Eq. (1), y indicates the growth rate of per capita output of country i during year t ($y_{it} = \Delta \ln GDP_{it}$), $Fiscal$ is a set of fiscal variables expressed as a percentage of GDP, and X is a set of non-fiscal control variables. Eq. (1) is estimated using ordinary least squares with country and time fixed effects (OLS-FE). The long-term effect of different fiscal variables on growth is captured by $\theta \equiv \frac{\beta_2}{(1-\beta_1)}$. We also investigate whether the effect of revenues and expenditures on growth differs across regions by interacting the variable of interest with regional dummies for CESEE and Advanced Europe.

As described in Kneller et al. (1999), when estimating the impact of each spending category on output growth, an omitted variable represents the underlying assumption about how to finance the additional expenditure. In all cases, the omitted variables are the reminder of the public expenditures. Similarly for revenues, the omitted variables are the remaining public revenues. Data are cyclically adjusted, inter alia to prevent reverse causality from growth to revenue/expenditure categories. Feedback effects cannot be excluded as cyclical adjustment is difficult to get right, especially for corporate taxes. Results could also capture things like governments adjusting budgets in response to high/low growth. This said, results do not change materially when varying the set of elasticities used in cyclical adjustment, and neither when using Blundell and Bond (1998) system generalized method of moments estimator (GMM) instead of OLS-FE.

The fiscal variables, taken from the World Economic Outlook (WEO) database, refer to consolidated general government and are expressed as ratios to GDP. In addition, the IMF's Fiscal Affairs Department Revenue database and Article IV consultation reports were used to fill gaps in the data series. For spending categories, five categories are considered: public consumption (purchase/use of goods and services), compensation of employees, transfers, capital spending, and other expense. For revenues, seven categories are considered: taxes on corporate profits (CIT), taxes on labor income (PIT), taxes on goods and services, taxes on property, social contributions, other tax revenues, and other (non-tax) revenue.

In addition, we have included six control variables: labor force (as a growth rate), private investment (in percent of GDP), terms of trade (as a growth rate constructed from an index series in which the year 2000 takes the value 100), population (growth rate), oil rents (in percent of GDP), and the overall budget balance (in percent of GDP). The inclusion of the production factors related to capital increase (proxied by private investment) and labor force growth follows from the related literature. Population growth may explain output growth. Several studies have suggested the relevance of terms of trade (Odedokun, 2001; Bose et al., 2003; Gupta et al., 2005). Oil rents are included to capture potential negative influence of natural-resource revenues on domestic revenues and expenditures (Crivelli and Gupta, 2014). The unit specific term in our panel model α_i takes into account the effect of time-invariant idiosyncratic characteristics of each country, whose impact has been suggested in previous studies, such as the initial levels of GDP or human capital, etc.

Annex Table VII.1 and VII.2 below present the long-term results for different government spending and revenue categories. The coefficients shown there are the estimated θ s computed as explained above. Annex Table VII.1, Column 1 presents the results for public consumption spending. The computed long-run effects for CESEE as well as for advanced Europe show a negative and significant relationship with economic growth. Also a statistically significant and negative coefficient has been estimated for transfers (column 3), while capital spending appears to have a positive and significant relationship to long-term economic

growth (column 4). As such, for instance, an increase in public investment by 1 percentage point of GDP, financed by an equivalent decrease in current public expenditure (omitted variables), would increase long-term real per capita GDP growth by about 0.4 percentage points among CESEE countries. For the revenue categories, the estimated coefficients in Annex Table VII.2 point to a negative and significant impact of taxes on corporate profits (column 2) and social contributions (column 4) on growth, while a much smaller and not statistically significant impact of broad-base consumption taxes (column 1) or property tax (column 3).

Results are qualitatively similar for Advanced Europe. Note though that for the “rest of the world”—i.e. countries outside Europe, captured by the base coefficient for each spending/revenue category—some results deviate. Differences to Europe are notable especially on the revenue side, where for the “rest of the world” no category has a significant coefficient. This may reflect heterogeneity—the group contains a diverse set of advanced and emerging economies—or structural characteristics of these revenue systems that are insufficiently captured by the model specification.

In order to assess the overall growth friendliness of CESEE government budget structures, additional assumptions are needed to identify the marginal impact of revenue and expenditure components on long-term growth. Given the omitted variable assumption used in estimating Eq. (1) above (controlling for total revenue and total expenditure, as well as for the overall budget balance), the parameter estimates of the expenditure and revenue components cannot be directly interpreted as the marginal impact on growth. For example, the impact of a one percentage point increase of a given expenditure component implies in the regressions, a drop of equivalent size in other expenditure components. As a result, the estimated coefficients can only be interpreted as the net impact (net of the impact of reducing other expenditure components) on long-term growth.

We make the following assumptions in order to identify the marginal impact of expenditure and revenue components on long-term growth²¹:

- When computing the net growth impact, the compensating change of other expenditure (revenue) components is equally distributed among other expenditure (revenue) components.
- The sum of the marginal impact of expenditure (revenue) components on long term economic growth is zero.

With these additional assumptions, and the estimated coefficients from the regressions on expenditure and revenue components above, a system of equations can be solved separately for revenue (expenditure) components that allows identification of the estimated marginal effects. This transformation results, as expected, in marginal effects on long-term growth that are consistently lower (in absolute value) than the estimated coefficients above.

²¹ For this analysis, we focus on four expenditure components (wage, goods and services, investment, and transfers), and four revenue components (taxes on goods and services, CIT, PIT, and social contributions). Total expenditure (revenue) is equal to the sum of the four expenditure (revenue) components plus other expenditure (revenue).

Annex Table VII.1. Government Spending and Economic Growth

	(1)	(2)	(3)	(4)	(5)
Public consumption	0.482 (0.422)				
Public consumption X CESEE	-0.858* (0.461)				
Public consumption X AE	-0.922** (0.376)				
Compensation of employees		-0.174 (0.281)			
Compensation of employees X CESEE		0.115 (0.324)			
Compensation of employees X AE		0.243 (0.553)			
Transfers			-0.615*** (0.174)		
Transfers X CESEE			0.207 (0.184)		
Transfers X AE			0.268 (0.279)		
Public investment				0.270** (0.162)	
Public investment X CESEE				0.106 (0.147)	
Public investment X AE				0.049 (0.116)	
Other expense					0.082 (0.198)
Other expense X CESEE					-0.082 (0.204)
Other expense X AE					-0.011 (0.132)
Total revenue	-0.017 (0.075)	-0.017 (0.078)	0.032 (0.067)	-0.078 (0.053)	-0.034 (0.075)
Private Investment	0.061* (0.038)	0.080** (0.035)	0.033 (0.035)	0.066** (0.029)	0.068* (0.042)
Overall budget balance	0.216*** (0.064)	0.192*** (0.070)	0.155** (0.068)	0.194*** (0.049)	0.214*** (0.056)
Oil rents	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)
Terms of trade	0.001*** (0.000)	0.001*** (0.000)	0.001 (0.001)	0.001 (0.001)	0.002*** (0.000)
Labor force growth	-0.001 (0.001)	0.001 (0.001)	-0.001 (0.003)	0.001 (0.002)	-0.001 (0.003)
Population growth	-0.001** (0.000)	-0.008** (0.004)	-0.007** (0.003)	0.001*** (0.000)	-0.007** (0.003)
θ CESEE	-0.375** (0.112)	-0.059 (0.160)	-0.408*** (0.188)	0.376*** (0.030)	-0.001 (0.064)
θ AE	-0.440** (0.259)	0.069 (0.167)	-0.347** (0.168)	0.319** (0.169)	0.072 (0.198)
R2	0.451	0.409	0.102	0.130	0.403
No. of countries	62	64	58	69	53
No. of observations	1089	1108	1015	1233	904

Notes: OLS, with country fixed effects. Full set of controls and year dummies in all regressions. Robust standard errors, in parenthesis; ***(**,*) indicate significance at 1(5,10) percent.

Annex Table VII.2. Government Revenue and Economic Growth

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Taxes on goods and services	-0.038 (0.220)						
Taxes on goods and services X CESEE	0.018 (0.319)						
Taxes on goods and services X AE	0.084 (0.264)						
Taxes on corporate profits		0.147 (0.170)					
Taxes on corporate profits X CESEE		-0.824** (0.373)					
Taxes on corporate profits X AE		-0.219** (0.156)					
Taxes on property			-0.486 (0.495)				
Taxes on property X CESEE			0.468 (1.198)				
Taxes on property X AE			0.579 (0.754)				
Social security contributions				-0.037 (0.323)			
Social security contributions X CESEE				-0.646** (0.329)			
Social security contributions X AE				-0.159* (0.102)			
Taxes on Personal Income					-0.078 (0.260)		
Taxes on Personal Income X CESEE					0.086 (0.470)		
Taxes on Personal Income X AE					0.271 (0.361)		
Other taxes						-0.660 (0.570)	
Other taxes X CESEE						0.501 (1.145)	
Other taxes X AE						0.358 (0.702)	
Other revenue							0.123 (0.223)
Other revenue X CESEE							-0.110 (0.514)
Other revenue X AE							-0.091 (0.196)
Total expenditure	-0.035 (0.059)	-0.052 (0.059)	-0.013 (0.067)	0.024 (0.075)	-0.052 (0.099)	0.013 (0.079)	-0.021 (0.059)
Private Investment	0.045 (0.036)	0.089** (0.037)	0.111*** (0.038)	0.074** (0.034)	0.055 (0.045)	0.078** (0.039)	0.073** (0.023)
Overall budget balance	0.147** (0.063)	0.135** (0.068)	0.151** (0.074)	0.197*** (0.076)	0.105 (0.101)	0.187*** (0.075)	0.177** (0.074)
Oil rents	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)
Terms of trade	0.001 (0.001)	0.001** (0.001)	0.001*** (0.000)	0.000 (0.001)	0.000 (0.001)	0.001*** (0.000)	0.001*** (0.000)
Labor force growth	0.001 (0.001)	0.001 (0.002)	0.001 (0.001)	0.003 (0.003)	0.001 (0.002)	0.001 (0.001)	0.002* (0.001)
Population growth	-0.004* (0.002)	-0.005* (0.003)	0.001 (0.003)	-0.007* (0.004)	-0.006** (0.003)	-0.004 (0.003)	-0.006** (0.002)
θ CESEE	-0.020 (0.249)	-0.677** (0.371)	-0.018 (1.117)	-0.683*** (0.209)	0.007 (0.375)	-0.158 (0.356)	0.013 (0.045)
θ AE	0.046 (0.259)	-0.072** (0.043)	0.093 (0.655)	-0.196* (0.097)	0.193 (0.253)	-0.302 (0.408)	0.032 (0.071)
R2	0.230	0.459	0.388	0.134	0.193	0.266	0.318
No. of countries	56	59	65	56	44	53	62
No. of observations	964	996	1030	994	724	876	1082

Notes: OLS, with country fixed effects. Full set of controls and year dummies in all regressions. Robust standard errors, in parenthesis; ***(**,*) indicate significance at 1(5,10) percent.

Annex VIII. Large Fiscal Consolidations: Country Experiences²²

Several CESEE countries underwent sizeable consolidation in the wake of the global financial crisis. This Annex summarizes the main policies taken in countries with the largest fiscal efforts. Overall, many measures went into a growth-friendly direction, broadly corroborating the findings of the quantitative analysis. That said, they also comprised spending measures that came with hardship for certain segments of the population. Some revenue measures—such as sector-specific taxes—may be turn out to be harmful to growth.

Romania

Fiscal consolidation started in 2009 in the context of an IMF supported program. Adjustment focused on expenditure consolidation, seeking to contain entitlement and wage costs through cuts in wages and social transfers, parametric reforms to the pension system, including the removal of special pension regimes, and the introduction of a unified wage setting system.

Structural fiscal reforms complemented consolidation, including on the pension system, tax administration, and the public wage framework. A Fiscal Responsibility Law was enacted to streamline budgeting. A multi-year public financial management structure was introduced while limiting intra-year budget revisions. Fiscal rules were introduced to regulate spending, public debt, and the primary deficit. A framework for managing guarantees and other contingent liabilities was approved. The local public finance law was amended to bolster fiscal discipline. Reform implementation was uneven though, particularly in the areas of revenue administration and health care reform.

Main measures:

- **Wage bill cut** (2 percent of potential GDP, cyclically adjusted): A key objective was to reduce the public sector wage bill back to the 2007 level through a 25 percent cut in public wages. Public employment was reduced by about 16 percent. The resulting public wage bill in 2014 was consistent with the 7 percent of GDP cap set in Romania's Fiscal Strategy.
- **Capital spending cut** (2½ percent of potential GDP, cyclically adjusted): efficiency of Romania's high capital spending had been compromised by the lack of a robust framework and capacity for developing, prioritizing, and executing public-investment projects. Cuts to capital spending focused on non-priority, inefficient projects. In recent years the focus has shifted to improve absorption of EU funds, by strengthening targeting rules and public procurement.
- **Transfer cuts** (0.1 percent of potential GDP, cyclically adjusted): A parametric reform to the pension system was an essential pillar for long-term fiscal sustainability, including also the removal of special pension regimes. Short-term budgetary impact was only marginal, however, with the focus on preserving the scope and size of the safety net system (social protection).
- **Revenue increases:** Only 1/3 of the adjustment was achieved through revenue measures, mostly explained by an increase to the VAT rate from 19 to 24 percent that triggered an increase in yields of

²² Prepared by Ernesto Crivelli and Yan Sun.

about 1 percent of GDP. The modest revenue increase relative to the large VAT rate hike is explained by a weak revenue administration.

Estonia

Reflecting the early onset of the crisis in Estonia, fiscal consolidation started early in 2008. Supplementary budgets in February and June of 2009 contained consolidation measures of 7½ percent. Many measures were on the revenue side, such as VAT increases and higher excise taxes. Other measures included social benefit reductions, cuts in operational spending, as well as land sales and discretionary spending cuts. Overall, the efforts led to a 2009 fiscal deficit of 1.7 percent of GDP (in ESA terms), which helped paving the way for euro adoption in 2011.

Main measures:

- **Wage bill and consumption spending cuts** (2 percent of potential GDP, cyclically adjusted): Large increases, particularly in current spending, resulted in an ill-timed loosening of fiscal stance in boom years. Fiscal consolidation was aimed at reversing these earlier spending. Cuts in spending in Estonia were possible due to lower rigidities as compared to other Baltic countries.
- **Transfer cuts** (1 percent of potential GDP, cyclically adjusted): Cuts in social transfers reflect lower replacement rates for unemployment benefits.
- **Revenue collection increases** (1½ percent of potential GDP, cyclically adjusted): mostly base-broadening measures. Tax collection held up very well, as a result of improvements in tax administration at the onset of the crisis. Estonia has a revenue-productive and cost-effective tax system, characterized by an internationally acclaimed low compliance burden (with some 90 percent of taxpayers filing electronically). As a result, they achieved a sizeable increase in revenue collection despite only marginal increases to VAT rates (2 percent) and excise taxes.

Bosnia and Herzegovina

Financing constraints triggered fiscal consolidation in 2010-2011. A temporary financing rule restrained spending on capital goods to offset overruns in wage and other current spending. Since 2012, adjustment efforts have increasingly focused on rationalizing public expenditures and on improving the composition of spending. There have also been structural fiscal reforms, including strengthening tax administration and tax compliance, reforms of the system of rights-based benefits; a comprehensive overhaul of the health sector and pension systems; strengthening the medium term budget framework; and streamlining public administration.

Main measures:

- **Transfer cuts** (2½ percent of potential GDP, cyclically adjusted): The largest contribution came from reduction in war-related benefits. As a result of a new privileged pension law in the Federation, benefits of existing war veterans were reduced substantially.

- **Capital spending cuts** (1½ percent of potential GDP, cyclically adjusted): In addition, a temporary financing rule restrained non-priority spending on capital goods, in part explained by delays in official foreign financing.
- **Tax revenue increases** (4 percent of potential GDP, cyclically adjusted): Mostly due to better tax administration and base-broadening measures. Large gains in revenue collection have been explained by a significant effort to strengthen tax administration. Tax compliance measures including among others, a broader exchange of information between collection agencies in the Federation, and compulsory registration of farmers to broaden the tax base for social security contributions have resulted in increased collection of all main taxes without major changes to tax rates.

Czech Republic

The Czech Republic reacted to the global financial crisis at first with a fiscal stimulus: in 2007–09, the structural fiscal balance widened by more than 3 percent of GDP, while public debt increased to 38 percent of GDP by 2010. As the crisis intensified, stimulus was withdrawn and followed by large structural consolidation of more than 4 percent of GDP in 2010–13.

Main measures:

- **Revenue:** Mostly due to tax rate changes. Fiscal stimulus at the onset through cutting the CIT rate, resulting in 1 percent of GDP lower CIT revenue collection. Afterwards, gradual increase in the VAT standard rate from 19 to 21 percent and increases in reduced VAT rates, resulting in higher revenue collection by 1½ percent of GDP.
- **Capital spending cuts** (1½ percent of potential GDP, cyclically adjusted):
- Nominal freezes in **public consumption and wage bill** (1½ percent of potential GDP, cyclically adjusted):

Hungary

In 2008–10, fiscal adjustment was carried out in the context of an IMF-supported program. Consolidation focused on expenditures, seeking to reduce the size of the large public sector. Many expenditure measures were of a structural nature, such as the elimination of 13th-month pensions and wages. From late 2010, the government took increasingly recourse to revenue measures, such as VAT and excise increases, while seeking to reduce public consumption and capital transfers. Sector-specific taxes were levied on banks as well as retail, telecom, and energy firms. During the early phase of consolidation, several structural fiscal measures were implemented, such as the passage of a fiscal responsibility law and parametric pension reforms. However, many of these were reversed later.

Main measures:

- **Wage bill and transfers cuts** (5 percent of potential GDP, cyclically adjusted). Most expenditure measures were of a long-term nature, seeking to reduce the size of the large public sector, resulting in the elimination of the 13th month for pensions and wages.
- **Capital spending increased.** In contrast to other countries, Hungary actually *increased* capital spending

to the tune of 1½ percent of GDP, owing in part to leveraging EU Structural and Cohesion Funds..

- **Revenue:** Mostly tax rate changes and new fees and sector specific taxes. Fiscal stimulus in 2010/11 through reforming the personal income tax to a flat-tax system at 16 percent (lower rate). This came at a significant revenue loss of about 2½ percent of GDP. To compensate for the loss, the government starting in 2010 introduced sector-specific taxes on banks as well as retail, telecom, and energy firms. In addition, an increase in the VAT rate—to become the highest in Europe at 27 percent—was introduced, followed by increases in excise taxes. These last measures resulted in increased revenue collection by about 3 percent of GDP.

Lithuania

Fiscal adjustment began in 2009 and relied mainly on expenditure measures. Spending cuts were roughly proportional to the size of spending categories in total expenditures. However, capital spending supported by EU funds was left untouched so as not to forgo external grants and the attendant growth benefits. On the revenue side, measures focused on indirect taxes and one-off measures. Public spending as a share of GDP is now among the smallest in the EU. Lithuania also has relatively low implicit and statutory tax rates.

- **Current spending cuts** (5½ percent of potential GDP, cyclically adjusted). Evenly distributed among the public sector wage bill, consumption of goods and services, and transfers.
- **Capital spending increased** (0.7 percent of potential GDP, cyclically adjusted). Capital spending supported by **EU funds** was left untouched lest to forgo external grants.
- **Revenue collection:** A base broadening of social security contribution (by including self employed professions that previously did not pay social contributions) with a positive revenue impact of about 1½ percent of potential GDP. A reduction of the personal income tax rate, which explains deterioration in revenue collection by about 2 percent of potential GDP.

Latvia

Fiscal tightening was at first mostly carried out through expenditure cuts in the context of an IMF supported program. Measures included a 4 percent of GDP cut in remuneration—by means of a sizeable wage cuts for central government employees—and cuts in public investment. The focus shifted subsequently to revenue-side measures Pension cuts were reversed by the Constitutional Court. Structural reforms such as a Fiscal Discipline Law (FDL) and a Medium-Term Budget Framework were implemented in 2013.

- **Wage bill cut** (3½ percent of potential GDP, cyclically adjusted): through wage cuts for central government employees.
- **Capital spending** (1½ percent of potential GDP, cyclically adjusted)
- **Revenue increases:** Mostly tax rate changes that included a 3 percentage point increase in personal income tax rate (PIT) to 26 percent, a decrease in the tax-free PIT allowance e, which resulted in a revenue gain by about 1½ percent of potential GDP. A VAT increase from 18 to 21 percent resulted in a revenue gain of about 1 percent of potential GDP.

ABBREVIATIONS

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

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