



ROMANIA

SELECTED ISSUES

March 2015

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March 10, 2015

Approved By
**The European
Department**

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BENEFITS OF BOOSTING QUALITY PUBLIC INFRASTRUCTURE SPENDING IN ROMANIA¹

Core Questions and Findings

- Why is the quality of infrastructure in Romania relatively poor?** Several factors likely contribute to the poor quality of infrastructure. Despite some recent reforms, Romania still lacks a robust framework for developing, vetting, prioritizing, and executing public investment projects. A coherent and predictable strategic plan is lacking to guide the project selection process and preserve priorities over the medium term. The prospect of electoral gains may encourage politicians to announce and begin new infrastructure projects, but provide little incentive to see the projects through to completion. In addition, the transportation network is dominated by large, inefficient, and financially vulnerable state-owned enterprises.
- What is the status of the investment project portfolio?** The central government project pipeline is clogged with old projects. There are over 500 central-government investment projects with a value equivalent to 31 percent of GDP. Many projects have long implementation periods with 78 projects expected to take more than 10 years to complete, including one with a duration of 42 years. In addition, there is little transparency about the thousands of local government investment projects. Moreover, the integration of project prioritization process into the budget and medium-term spending plans is limited.
- Why is Romania's absorption of EU structural and cohesion funds (SCF) low and what could be done to improve absorption?** For the 2007–13 programming period, Romania has absorbed about 52 percent of the EUR 19.1 billion (15 percent of 2007 GDP) of SCF at its disposal. It is eligible for another EUR 22.5 billion (14 percent of GDP) in SCF during 2014–20. Romania's low absorption rate reflects weak project management capacity in the government and in beneficiaries and a preference for initiating projects funded through the state budget.
- What is the size of the growth dividend Romania could expect from increasing quality public investment that is primarily financed through increased EU-funds absorption?** Using three different techniques, staff estimate that a 0.7 percent of GDP annual increase in investment over the period 2016–20, funded by SCF grants and cuts in national capital spending, could increase output in the medium term up to 1½–3 percent over the baseline forecast. Based on a production function model, the potential GDP growth rate would be 0.5 percentage point higher in 2020.

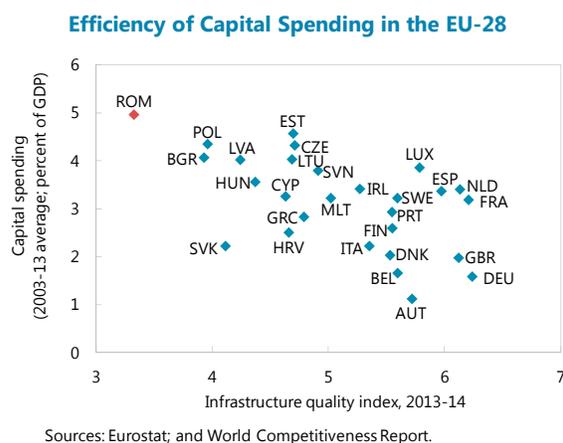
¹ Prepared by John Ralyea, Vahram Stepanyan, and TengTeng Xu (all European Department).

A. Introduction

1. Since the financial crisis, fiscal and current account deficits have been tackled, but the infrastructure deficit has widened. Romania's infrastructure is suboptimal due to a backlog of incomplete projects, as well as administrative deficiencies in the maintenance and operation of the infrastructure (Romania, 2014). Romania needs to make quality investments, particularly in infrastructure, for today and tomorrow. Based on the EU's production function methodology and demand side projections using conservative multiplier estimates, this paper shows that increased quality public investment in infrastructure can boost growth in Romania, consistent with recent research. Greater absorption of available EU grant funding could play an instrumental role in increasing the quality and quantity of infrastructure spending in a tight budget environment. In addition, acceleration of project management reforms and stricter implementation of medium-term budgets are needed to realize the full growth benefits of infrastructure investment.

B. Infrastructure—Low Quality

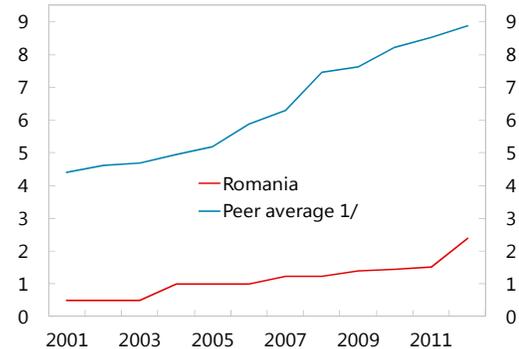
2. Romania's public-sector capital spending has significantly outpaced that of other EU members, but its infrastructure is perceived as being low quality. Several factors likely contribute to the poor return on public investments in infrastructure. Despite some recent reforms, Romania still lacks a robust framework for developing, vetting, prioritizing, and executing public-investment projects. The prospect of electoral gains may encourage politicians to announce and begin new infrastructure projects, but provide little incentive to see the projects through to completion. Large state-owned enterprises (SOEs) that are subject to political interference dominate key network industries. This is particularly true in the transportation sector, where inefficient SOEs are responsible for building and maintaining the rail and road infrastructure and delivering rail services (see Selected Issues paper "Romanian State-Owned Enterprises: Challenges and Reform Priorities").



3. In addition, infrastructure density, particularly the road network, is relatively low. The low density may be attributable to broader issues. A 2012 World Bank study notes that “there is a serious problem of leadership, management, and governance in the transport sector, including in roads.” A separate World Bank report, using a specialized dataset of road sector contracts under Bank-funded projects in 14 countries in East Europe and Central Asia, found that Romania had the second highest average number of red flags per contract. It is not surprising that this environment would yield a low road density.

Total Length of Motorways

(Thousand square km)

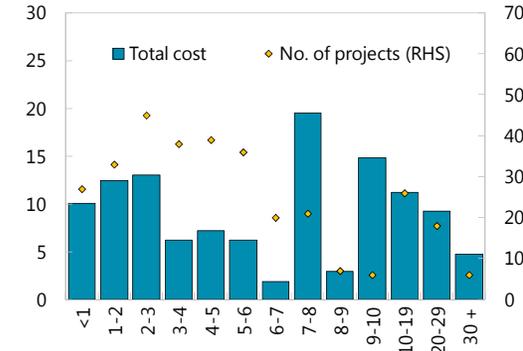


1/ Unweighted average of Bulgaria, Czech Republic, Hungary, Poland and Slovakia
Sources: Eurostat.

4. The legacy of poor project planning coupled with political expediency is a large, unwieldy central government project pipeline clogged with old projects. The central government’s project database at end-2013 included 543 projects with an investment value equivalent to 31 percent of GDP. Based on World Bank analysis, only 85 of the projects receive non-reimbursable funding from the European Union, while another 97 projects received no funding at all in 2013 (World Bank, 2014). Cost overruns amount to 2 percent of GDP. Many projects have long implementation periods with 78 projects expected to take more than 10 years to complete, including one with a duration of 42 years. Moreover, the budget does not provide funding for all projects with a duration of less than a year. Funding for some of these projects will inevitably have to be postponed to future years. More broadly, given the long duration of the portfolio, it is quite possible that many projects are no longer consistent with current objectives.

Total Cost of Public Investment Projects by Duration (Years), 2013

(Billion lei)



1/ Reflects 322 central-government projects with known dates.
Sources: World Bank, Romanian authorities and IMF staff calculations.

C. Absorption of EU Structural and Cohesion Funds (SCF)

5. European Union (EU) funds available to Romania represent a significant source of financing for economic growth.² During the 2007–13 programming period, Romania was eligible for EUR 19.1 billion (15.3 percent of 2007 GDP) of external financing from the EU's structural and cohesion funds (SCF).³ These funds were allocated across seven operational programs (OP) designed to foster Romania's competitiveness and cooperation and convergence with other EU members. The OPs for transportation and environment, primary infrastructure development, were the largest, accounting for 46 percent of the available resources. Romania is eligible for another EUR 22.5 billion (13.7 percent of estimated 2014 GDP) under the 2014–20 programming period. Six OPs are being considered for this period, with the large infrastructure OP allocated EUR 9.4 billion, part of which is contingent upon EC approval of a Master Transportation strategy.

Romania: Structural and Cohesion Funds (SCF) Absorption

(Billions of euros)

Operational Program	Budget 2007-13 1/	SCF payments 2/	Absorption Rate (Percent)	Estimated budget 2014-20 3/
Regional	4.0	2.5	63.6	6.7
Environment	4.4	2.2	49.9	...
Human resources	3.5	1.5	41.8	4.3
Competitiveness	2.5	1.4	56.7	1.3
Large infrastructure	9.4
Transportation	4.3	2.6	60.1	...
Technical assistance	0.2	0.1	51.9	0.2
Administrative capacity	0.2	0.2	83.1	0.6
Total	19.1	10.5	54.8	22.5

1/ Under the n+2 rule, 2015 is the last year to receive reimbursement for projects started under the 2007-13 programming period.

2/ Includes actual payments, payments in progress, and advance payments as of November 3, 2014. Excludes top up payments.

3/ No payments have been received for the 2014-20 programming period as of November 3, 2014.

Sources: Romanian authorities; and European Commission.

6. Romania's absorption of SCF is the lowest in the EU, despite a recent pick up. As of early November 2014, Romania's absorption rate, including pre-financing, was 50 percent, compared to an average of 71 percent in other new member states. The human resources OP has the lowest absorption rate of 41 percent among the operation programs. Romania has until the end of 2015 to absorb the remaining resources for each OP (a cumulative EUR 8.6 billion, 5.3 percent of GDP) from the 2007–13

EU Funds Absorption, 2014



Source: European Commission.

² EU funds typically refer to grants received from the European Union for development and income support purposes. Funds are allocated in seven-year programming periods. The last one covered the period 2007–13. The current programming period covers 2014–20. Total EU funds available to Romania during 2007–13 were EUR 34.6 billion, which included support from Structural and Cohesion Funds (SCF), European Agricultural Fund and Rural Development, European Fishery Fund, and European Guarantee Fund. This section and the analysis in this paper focus only on financing from the SCF.

³ SCF include the European Fund for Regional Development (EFRD), the European Social Fund (ESF), and the Cohesion Fund (CF).

programming period.⁴ Nonetheless, more important than the degree of absorption is the effectiveness with which SCF transfers have been used.

7. Absorption of SCF for the 2007–13 programming period has suffered largely due to domestic governance and capacity issues. Romania's difficulties in absorbing SCF are well documented (Lungu, 2012; Romania, 2011; KPMG, 2014). These deficiencies have resulted in the suspension or interruption of some operational programs and reimbursement of some amounts received. While some of the obstacles to absorption have been addressed, others remain. For example, beneficiary capacity and skill to identify, elaborate, and manage projects continues to be weak. Public administration of the operational programs also faces deficiencies in evaluating and monitoring projects. Finally, it is possible that public officials may prefer to initiate and implement investment projects that are financed only by Romania's central and local governments because these projects do not carry the level of monitoring and evaluation that accompanies in EU-funded projects.

D. Recent Reforms to Improve the Quality of Public-Sector Investments

8. Recent reforms under the IMF/EU supported-program have focused on improving project prioritization and EU funds absorption. The authorities adopted a legally-binding project prioritization methodology,⁵ with World Bank assistance, applicable to all significant projects (value greater than RON 100 million) that are funded by the state budget. The framework was applied during the 2014 budget cycle and a list of priority projects was published (Annex). However, the Public Investment Plan (PIP) lacks a multi-annual time dimension that should accommodate the full life cycle of projects, based on Fund technical assistance. As with the entire central-government project portfolio, the highest priority significant projects have long durations (average duration is 10.7 years).

9. In 2013, the Public Investment and Valuation Unit (PIEU) was created in the Ministry of Public Finance (MoPF), but more can be done to enhance its effectiveness. The unit's mandate is to help strengthen quality control in the preparation, prioritization, appraisal and management of new significant public investment projects financed by the central government (IMF, 2014a). However, in practice, many of the project life cycle steps remain the responsibility of line ministries. To date, PIEU activities have been limited to reviewing pre-feasibility studies for projects with a value greater than RON 100 million that are prepared by line ministries and compiling a list of priority projects for an inter-ministerial committee, which approves final project selection. In addition, the prioritization process needs to be better integrated into the budget preparation process (the priority list prepared for the 2015 budget cycle was not approved), including medium-term budget projections. Moreover, project design does not follow good practices in terms of definition of objectives and performance indicators, specification of results,

⁴ The projects have to be approved by 2013, but the last payments can be made in 2015 (the N+2 rule).

⁵ Emergency Ordinance 88/2013 and Government Decision 225/2014.

and risk analysis. With respect to EU-funded projects, the principle of first come, first-served guides the prioritization process. Responsibility for managing the operating programs under the 2014–20 programming period has been centralized under the Ministry of European Affairs (MEF), with the exception of the regional development OP. This could foster more efficient absorption. Nonetheless, coordination between the MEF and MoPF in key stages of the project and program cycles is limited. Better cooperation would help ensure that overall financial resources are consistent with national policy priorities.

10. Critically, most projects, including local projects, fall outside the ambit of the prioritization framework. There are more than 350 central governments and over 3000 local government projects that are not subject to the government-approved prioritization framework. Efforts to improve the prioritization of these projects and the level of funding transparency have been ad hoc. For example, the Ministry of Regional Development (MoRD) maintains a database of local government projects but prioritization of the projects is rudimentary (e.g., in 2014 those exceeding a certain percentage-of-completion threshold receive financing). The MoRD published a list of local government projects that received budget financing in 2013. This practice should continue. In addition, recurrent costs arising from investment projects do not appear to be fully recognized and provided for in budgets, according to the findings of recent Fund technical assistance.

E. Quality Infrastructure Investment Can Boost Growth

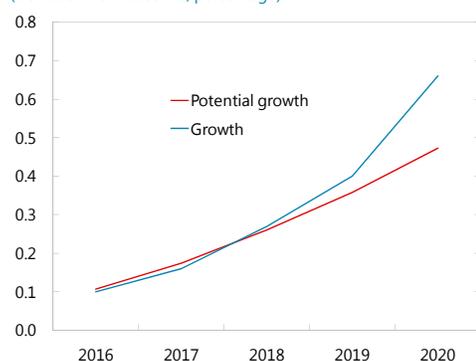
11. Quality public investment in infrastructure can boost domestic demand and potential GDP growth, particularly in low growth environments such as Romania's. Since the global financial crisis, Romania's economy has underperformed and the output gap is unlikely to close within the next few years (IMF, 2014a). The labor participation rate also remains one of the lowest in the European Union (see Selected Issues paper on "Cutting Labor Taxes in a Constrained Budget Environment"). At the same time, government borrowing costs and the policy rate are at or near all time lows. In short, Romania's current situation—economic slack, accommodative monetary policy, cheap money, and an infrastructure deficit—presents a strong case for increasing quality public infrastructure investment, provided the effort to improve the public investment process is accelerated.

12. Supply and demand side estimates yield similar growth benefits from increased quality public investment. EU-funded investment is subject to a higher level of monitoring and evaluation than other investments. Therefore, higher EU-funds absorption brings not only additional investment financing but also higher quality investment. Using three different techniques, staff estimate that raising the EU funds absorption rate from 75 percent in the baseline to 100 percent over the period 2016–20, equivalent to an average of RON 6.2 billion annually ($\frac{3}{4}$ percent of GDP), could increase output by $1\frac{1}{2}$ –3 percent over the medium term, based on the most plausible assumptions. The production function approach also shows that the potential GDP growth rate could be 0.5 percentage points higher by 2020.

Production Function Approach

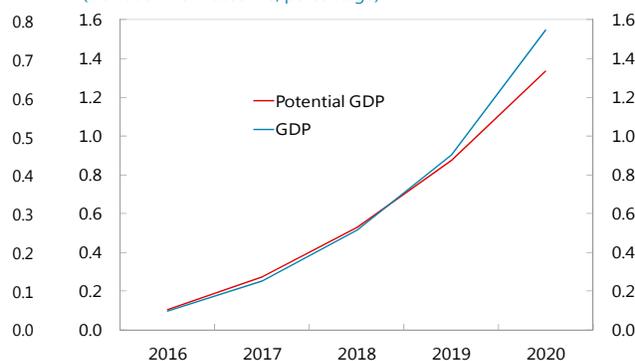
13. Staff simulations employing the EU’s production function methodology show significant growth benefits from higher quality infrastructure spending. Using the Cobb-Douglas production function together with projections for capital stock, labor supply and total factor productivity (TFP), staff calculated potential growth and output gap under baseline and upside scenarios. Compared with the baseline projection, the upside scenario assumes additional investment of $\frac{3}{4}$ percent of GDP per annum, which boosts investment growth by about 1.4 percentage points on average from 2015 to 2020. Simulations suggest that the growth benefits from higher and more efficient investment could be up to 0.5–0.7 percentage point on real growth and potential growth by 2020. The cumulative impact on the level of GDP and potential GDP could be up to 1.3 to 1.5 percentage point by 2020.

Growth Benefits From Higher Investment
(Deviation from baseline, percentage)



Sources: IMF staff estimates.

Level Impact From Higher Investment
(Deviation from baseline, percentage)



Sources: IMF staff estimates.

The Growth Impact of Public Investment—a Model-Based Approach

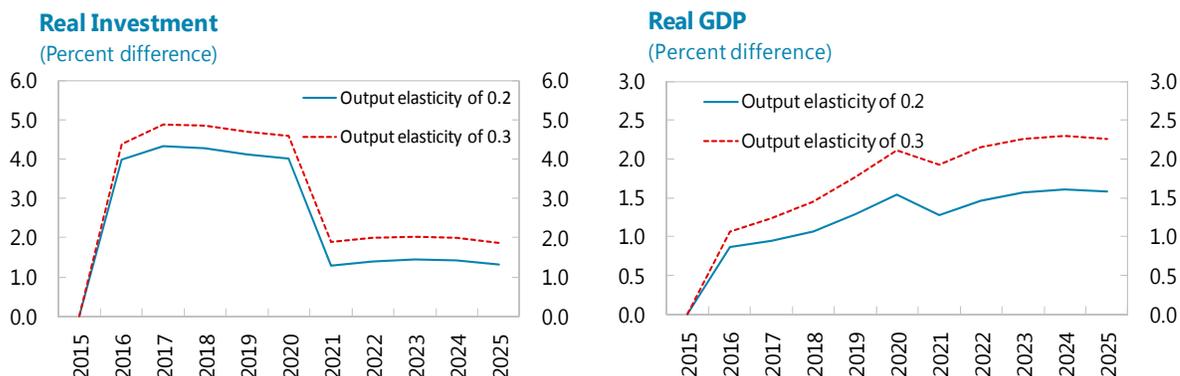
14. We also use a model-based approach to assess the potential impact of the increased investment financed by EU funds. Specifically, we use the IMF’s Global Integrated Monetary and Fiscal model (GIMF) calibrated for the Romanian economy to simulate the impact of such an increase in investment on economic growth.⁶ The additional investment is modeled as a temporary increase for five years in government capital spending equal to 0.8 percent of GDP per annum and financed by EU grants.

15. The output elasticity of public capital is an important factor in our simulation. Various studies have attempted to gauge this elasticity by estimating a production function that includes the public capital stock as an input. Lighthart and Suarez (2011) conduct a meta-analysis and report the simple average of output elasticity of public capital of their meta sample at 0.2,

⁶ The GIMF is a multi-region, forward-looking, DSGE model developed by the IMF for policy analysis and international economic research. For details on GIMF, see Kumhof et al. (2010), and Anderson et al. (2013).

compared to their meta-regression analysis estimate of 0.1. In Romania, the public infrastructure has a relatively low quality and, according to some estimates, is substantially below the productivity frontier range where incremental public investment contributes less and less to productivity. Hence, one can argue that in the case of the Romanian economy the output elasticity of public capital would be higher than 0.1. We use in our benchmark simulation an output elasticity of public capital of 0.2 and also simulate a scenario with a higher elasticity.

16. As a result of higher investment, real GDP would increase by around one percent initially with the impact peaking in 2025. After the shock in government spending, real GDP increases by approximately 1 percent on impact because of the increase in domestic demand, particularly investment. In the next periods, the real GDP is higher by around 1.5 percent. A simulation with higher output elasticity of public capital of 0.3 shows a bigger impact in case the government chooses the “right” investment projects. These estimates are broadly in line with estimates of the medium-term effect of SCF absorption on Bulgaria’s output of 1½–3 percent, using the GIMF model (Paliova and Lybek, 2014).



Source: IMF staff estimates.

Multiplier approach

17. Demand side projections of the effect of increased quality public infrastructure investment on output hinge on the robustness of projections of fiscal multipliers. However, there is little consensus on the size of fiscal multipliers in the economic literature, particularly for emerging and developing countries. Multipliers can vary over time and depend on a range of factors, including the state of the economy, the fiscal instrument used, and other discretionary policies, particularly monetary policy (Batini et al., 2014). Recent research, after reviewing large public investment booms in emerging and developing countries, suggests a public investment multiplier of about 1–1.3. Alternative approaches to estimating the public investment multiplier reviewed in the same study, indicate that a 1 percentage point of GDP increase in public investment has a multiplier of 0.5–0.9 over the medium term (IMF, 2014b).

18. The method of financing public infrastructure spending also influences the size of the multiplier and the potential impact on fiscal sustainability. Using a microfounded dynamic

general equilibrium model, Varga and Veld (2010) calculated the impact multiplier of SCF funding for infrastructure investment in EU members to be around 0.5, after accounting for unproductive spending, import leakage, and possible crowding out of private spending to the extent that the increased investment leads to higher wages and real interest rates. Another study found the multiplier for projects funded by SCF in Romania to be in the range of 0.5–0.9 across different operational programs (Lungu, 2013).⁷ Based on an effective national cofinancing ratio of 25 in 2013,⁸ the fiscal multiplier effect of budgetary spending on EU co-financing would be significantly higher.

19. Moreover, the persistence of the multiplier plays a significant role in the impact of public investment on growth. Studies find that the output effect of an exogenous fiscal shock, in general, vanishes within 5 years even if fiscal measures are permanent. However, the effect of a permanent change in public investment may be permanent, with multipliers steadily rising toward their long-run values. Varga and Veld's (2010) model produced a multiplier for all SCF financed investment that rises gradually to one after seven years and 2.6 after nearly two decades. Persistence is also likely to be stronger when economic activity is weak and/or monetary policy is accommodative (Batini et al., 2014).

Multiplier Scenarios

Scenario	Multiplier	Persistence	Increase in GDP growth rate (2020)	Cummulative increase in GDP (2025)
1	0.5	0.5	0.5	2.7
2	0.7	0.5	0.8	4.3
3	0.9	0.5	1.2	6.2
4	0.5	0	0.3	1.9
5	0.7	0	0.5	2.7
6	0.9	0	0.6	3.5

Source: IMF staff calculations.

20. Given the multiplier uncertainty, a range of multipliers were used to project the effect of increased quality infrastructure spending on growth. The increased quality of investment is modeled through an annual "shock" to expenditure on EU-funded projects by RON 1.7 billion per year relative to the baseline over the period 2016–20. The increase is assumed to be funded by SCF grants and cuts in national capital spending;⁹ thereby maintaining budget neutrality. The output effect of the fiscal shock (increased spending on EU-funded shocks) is

⁷ This is consistent with Stoian's (2012) estimate of a short-term multiplier of 0.5 for Romanian government investment.

⁸ National co-financing ranges from 15 percent for ERDF and ESF projects to 20 percent for CF projects. National authorities also have to finance the VAT and 90 percent of the cost of land acquisition for infrastructure projects. Romania also receives top-up financing from the European Union of up to 10 percent for SCF projects. Taking into consideration all these factors, as well as corrections, the average effective national co-financing rate of SCF projects was 25 percent in 2013.

⁹ EU-reimbursements for projects sponsored by private beneficiaries (e.g., NGOs) are passed onto the private beneficiary while the associated national co-financing is recorded on the budget. As a result, only about 60–70 percent of total EU-funded project expenditures incurred on the budget are covered by EU-reimbursements.

projected to vanish after five years. This is modeled through a persistence factor. The increase in the GDP growth rate in 2020 relative to the baseline ranges from 0.3 to 1.2 percentage points. The cumulative change in GDP in 2025 relative to the baseline ranges from 1.9–6.2 percent. The analysis is conservative in that it does not account for topping up EU-reimbursements, which are roughly equivalent to 10 percent of the additional expenditure, nor the dynamic affect on productivity of more and higher quality investment and infrastructure.

F. Considerations and Recommendations

21. Resources for quality public investment must contend with other spending priorities and an overall budget constraint. Shifting state- and local-government capital spending toward projects financed by the European Union SCF is an obvious way to increase quality investment while maintaining fiscal discipline. The 2015 budget moves in this direction but more funds could be diverted. At the same time, the maintenance costs need to be adequately reflected in medium-term budget projections. More broadly, Romania’s strategic framework should be improved and made more predictable, which would help facilitate alignment of EU and national strategies and serve to preserve project priorities over the medium term.

22. The quality of project selection, management, and implementation plays a crucial role in determining the return on investment. While some progress has been made in prioritizing spending on significant investment projects, responsibility for implementation of all phases of a public investment’s project life cycle remains with sponsoring line ministries. The MoPF should consider undertaking an assessment of the effectiveness of the project selection methods and take corrective measures as necessary. In addition, the MoPF should mainstream the good management practices of EU-funded programs (project design and monitoring and evaluation) across all projects. Over the medium term, the scope of projects overseen by the technical team should grow to encompass most central and local-government projects. Specific measures that could be taken during 2015 to improve project management include:

- Amend Government Emergency Ordinance (GEO) 88/2013 to align the project prioritization process with the budget cycle timeline.
- Amend the Public Finance Law to include the substantive elements of GEO 88/2013 and to ensure the prioritization system covers all projects over time.
- Upgrade the database of central-government projects to allow for a cost/benefit approach to project selection and better monitoring and encourage more consistent reporting by line ministries of project values and costs.
- Update, approve, and publish a project prioritization list prior to commencement of the 2016 budget process, and, within 15 days after approval of the 2016 budget by parliament, update the published list with actual amounts allocated to each project in the 2016 budget and estimated expenditures over the medium term.

23. Romania's political and legal environments also influence the allocation of scarce budget resources for public investment. The perception exists, borne out to some extent by the average length of time it takes to complete projects and the number of projects that remain incomplete, that project selection in many cases is driven by political considerations rather than economic and financial ones. At the same time, the significant shortfall in capital spending in 2014, amid evidence of increased vigilance in tackling governance issues by Romania's anti-corruption agency, suggests a possible reluctance of officials to sign-off on projects. To partly address the former concern, the PIEU could be empowered to reject projects based on the existing prioritization methodology.

24. Finally, SOEs in Romania play a critical role in infrastructure development, maintenance, and service provision. Further reforms of these enterprises will be important to realize the full benefit of increased quality public investment in Romania.

Annex

Highest Priority Significant Projects by Primary Funding Source 1/ (Billions of lei)				
Name	Value	Remaining amount	Starting year	Estimated completion year
Non-reimbursable funds (EU grants)	49.7	30.0		
<i>o/w top 3 projects of 36 total</i>				
Motorway Lugoj-Deva	5.7	4.8	2011	2017
Railway rehabilitation Brasov-Simeria	5.0	3.5	2007	2018
Motorway Sebes-Turda	4.6	4.6	2014	n/a
Reimbursable funds (loans)	7.9	5.7		
<i>o/w top project of 10 total</i>				
Metro line to Otopeni Airport	5.3	5.3	2009	2019
State-budget and pre-accession funds	55.5	34.6		
<i>o/w top 6 projects of 54 total</i>				
Motorway Bucuresti-Brasov	8.3	6.0	2006	2017
Railway rehabilitation Bucuresti-Constanta	2.1	0.1	2006	2014
Bucharest by pass roadway	3.2	3.2	2008	2020
Ministry of Economy building	0.1	0.1	2004	2016
Metro modernization	1.5	1.2	2004	2017
Motorway Brasov-Cluj-Bors	12.8	6.1	2004	2017
1/ Projects with a total value greater than RON 100 million. Prioritization done in preparation of 2014 budget. Source: Romanian authorities.				

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ROMANIAN STATE-OWNED ENTERPRISES: CHALLENGES AND REFORM PRIORITIES¹

Core Questions and Findings

- **How are inefficient state-owned enterprises (SOEs) holding back performance of the economy?**

SOEs play a notable role in the economy, particularly in the transport and energy sectors—key network industries to accelerate growth—but service delivery has been poor. Profitability of many SOEs has been weak and they have been unable to generate resources for urgently needed investment. SOEs account for almost all arrears in the state-sector and have also been a drain on the public purse, albeit financial performance has recently improved in some SOEs.

- **How can SOEs become better in public service delivery and more profitable?**

Key policies should center on creating incentives for performance, strengthening corporate governance, and improving public oversight. Steadfast restructuring of loss-making SOEs needs to be implemented.

- **What has held back SOE reforms? Can the obstacles be overcome?**

Political economy considerations and lack of political will seem to have been the main reasons for weak reform implementation. While institutional arrangements can mitigate political involvement, well functioning institutions require strong ownership to overcome impediments to reforms.

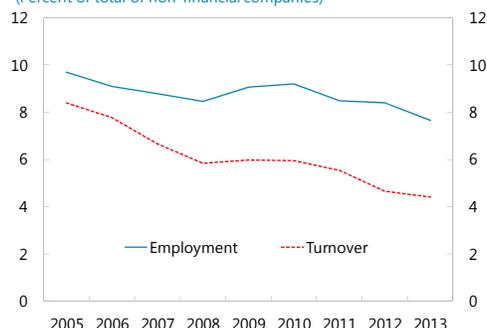
- **What are further reform priorities?**

Continue with greater private sector involvement in SOEs (IPOs and strategic majority investors) and energy market deregulation. Improve the SOE corporate governance framework and exercise political will to implement provisions of the new framework. Restructure non-viable SOEs or liquidate them to ensure efficiency and improved resource allocation.

A. An Overview of SOEs in Romania's Economy

1. State-owned enterprises (SOEs) play a notable role in the Romanian economy. There are more than 1,000 SOEs in Romania, with about 250 majority-owned by the central government and the remainder – by local governments.² SOEs range in size from very small enterprises with a few employees to the largest employers in the economy like the post office with more than 25,000

SOE Employment and Turnover
(Percent of total of non-financial companies)



Sources: Ministry of Public Finance, Romanian Fiscal Council; and IMF staff estimates.

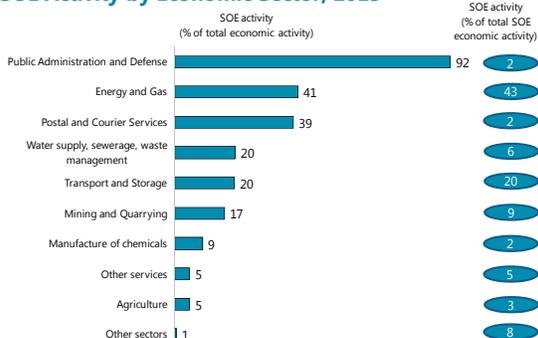
¹ Prepared by Vahram Stepanyan and Georgia Babici.

² Only central government SOEs are included in program conditionality under the 2013 Stand-By Arrangement (SBA).

employees. In aggregate, SOEs constitute around eight percent of non-financial companies' total employment and account for around 4 percent of their annual turnover. The Romanian SOE universe is far from being homogenous as the top 20 enterprises account for about two-thirds of the turnover and half of the employment in the SOE sector. Five SOEs generate the bulk of profits, while another handful account for the large part of losses and for about half of SOE arrears.

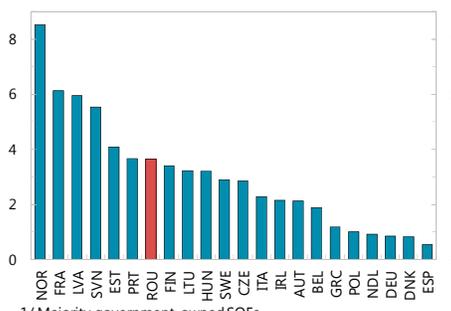
2. SOEs dominate in key economic sectors. SOEs constitute more than 40 percent of the energy and gas sector, around 40 percent of postal and courier services, and more than 20 percent of the transport sector turnover in Romania. While existence of natural monopolies or externalities may justify state ownership and intervention, the large presence of state-owned enterprises in sectors where market forces can and do operate in many other countries, such as energy and transport sectors, indicates that Romania's SOE sector remains relatively large (IMF, 2012). The SOEs role also seems large when compared to many EU member countries.

SOE Activity by Economic Sector, 2013



Sources: Ministry of Public Finance; Romanian Fiscal Council; and IMF staff estimates.

Share of SOE Employment in Total Employment, 2013 1/ (Percent)

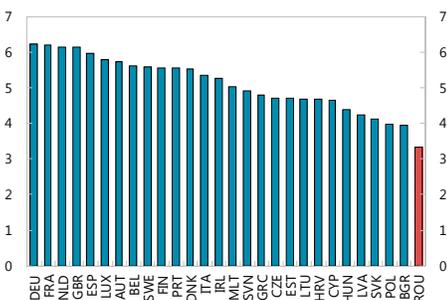


1/ Majority government-owned SOEs.

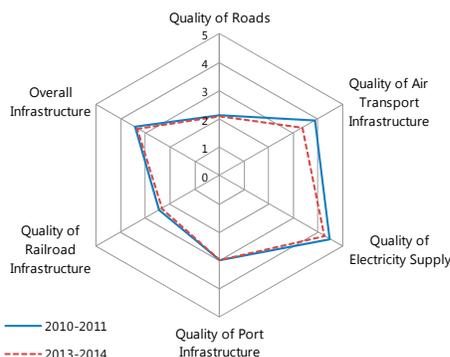
Sources: OECD, Ministry of Public Finance; and IMF staff estimates.

3. Romanian SOEs are not efficient providers of high quality infrastructure. Romania has ranked consistently low in terms of satisfaction with the state of its infrastructure. In particular, the World Economic Forum's assessment of the quality of infrastructure, based on surveys of business executives, ranks Romania lowest in the EU. The quality remains very low, especially in the road and railroad infrastructure. The SOEs operating in these sectors are amongst the largest arrears holders and loss-makers.

Quality of Infrastructure 1/ (Index)



1/ A higher score corresponds to better infrastructure. Source: The Global Competitiveness Report, 2013–2014.



4. Inefficient SOEs weigh on the overall performance of the economy. Profitability of many SOEs has been weak and they have been unable to generate resources for urgently needed infrastructure improvements. The poor infrastructure is due partly to the dominance of inefficient SOEs in the transportation and energy sectors. Poor governance of these SOEs is reflected in their relatively low labor productivity. In particular, according to the European Commission (EC) estimates for 2011, Romania ranks in the bottom four countries with the lowest labor productivity in the transport sector. Interestingly, in the same year Romania's gross investment in the transport sector was one of the highest as a percent of GDP (European Commission, 2014).

B. State-Owned Enterprise Performance

5. Romanian SOEs have generally low profitability and many operate at loss creating large arrears. With the exception of a few energy companies, the majority of Romanian SOEs have been operating for years at low profitability or making losses. Losses have been concentrated in the transport and energy sectors, in particular, in the three rail companies, the national air carrier and the coal-based energy producers. A stark example of a highly inefficient SOE is the rail freight operator CFR Marfa (Box 1). During 2008–12, cumulative SOE losses amounted to around 2 percent of 2012 GDP. In addition, SOEs account for the bulk of arrears in the Romanian state sector and are a drain on public finances in the form of foregone tax revenues, dividends and, to a lesser extent, subsidies. The transport sector has been the largest recipient of subsidies and transfers from the state budget, albeit the bulk of those are payments for the public sector obligations.

SOE Arrears and Budget Subsidies and Transfers
(Percent of GDP)

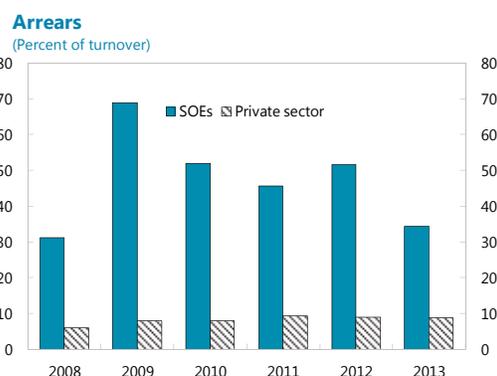
	Arrears under SBA 1/	Total Arrears 2/	Subsidies and Transfers 3/
2010	3.9	5.3	1.0
2011	3.1	4.7	0.7
2012	2.1	4.3	0.8
2013	1.1	2.8	0.7
2014	0.5

1/ Only central government-owned solvent SOEs.

2/ Includes all SOEs except those under liquidation.

3/ 2008–09 data covers only central government SOEs.

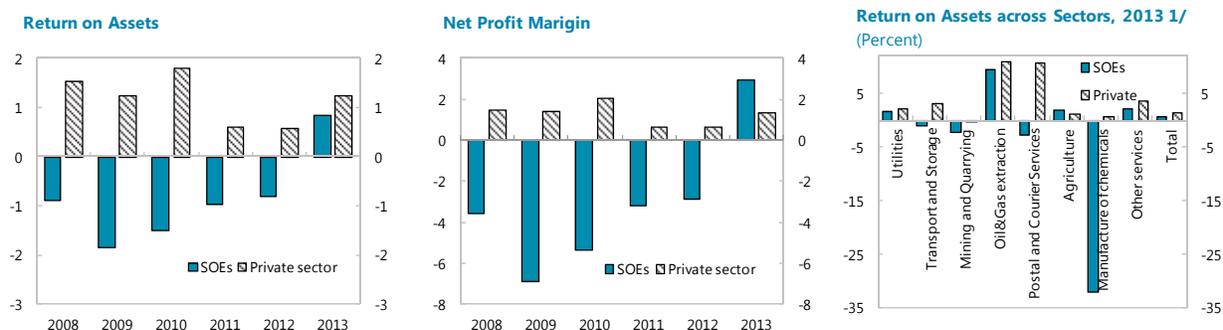
Sources: Romanian authorities; and IMF staff estimates.



Source: Ministry of Public Finance, Romanian Fiscal Council; and Fund staff estimates.

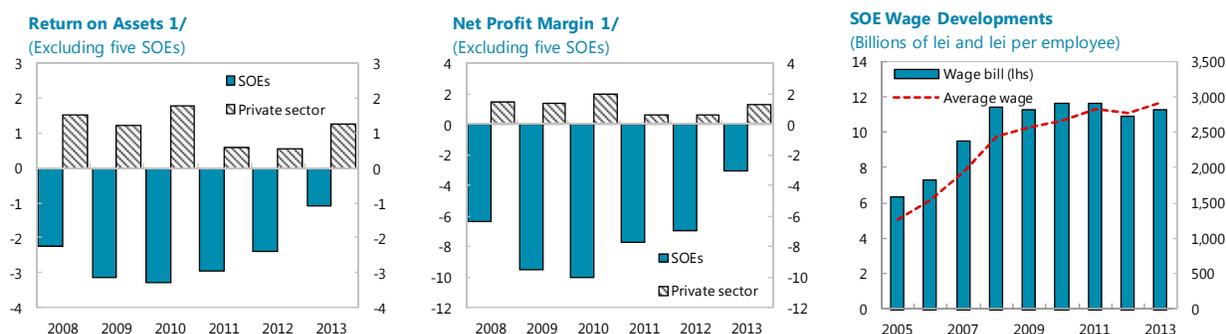
6. In 2013, the aggregate SOE sector became profitable following several years of losses.³ In aggregate, it even surpassed the private sector in terms of net profit margins. Sectoral distribution shows that SOEs operating in the oil and gas sector were particularly profitable.

³ The analysis is based on the Romanian tax authority (ANAF) and Fiscal Council databases that contain information from unaudited financial statements. It excludes central government-owned SOEs under liquidation.



1/ Data covers central government-owned SOEs and local government-owned SOEs with turnover over 100 million lei.
Source: Romanian authorities; and IMF staff estimates.

7. However, a closer look reveals that when five SOEs are excluded from the analysis the picture changes drastically. These are the state-owned gas, nuclear and hydroelectricity producers which benefited from deregulation in 2013, the gas transportation network which enjoys monopolistic conditions, and the Road Company which acts more like a project implementation unit. The remaining SOE sector was still loss making, albeit with a declining trend. The total SOE wage bill did not change much since the global financial crisis while the average wage increased, pointing to the fact that a notable labor shedding took place.

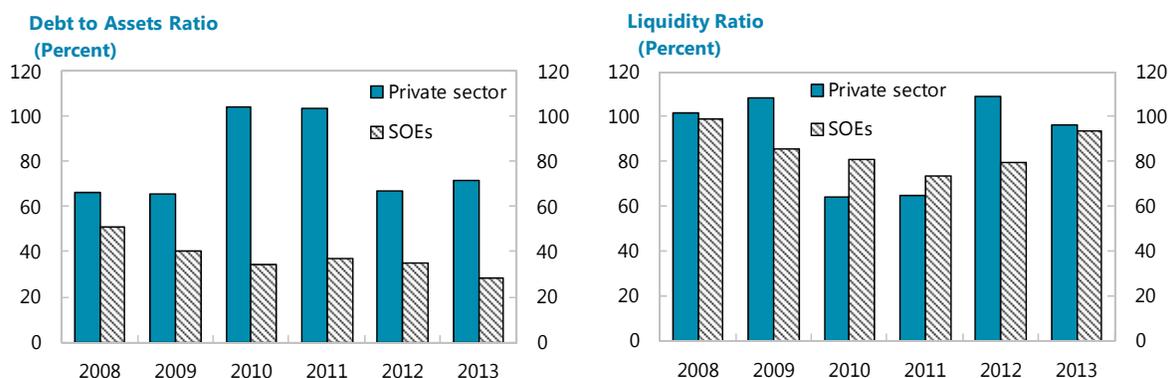


1/ Excludes Romgaz, Hidroelectrica, Nuclearelectrica, Transgaz, and Road Company.
Source: Ministry of Public Finance, Romanian Fiscal Council; and IMF staff estimates.

8. The improved performance of the SOE sector can be attributed to reforms in regulatory and pricing frameworks as well as some progress in the governance of the SOEs. The latter started to materialize following the approval of Government Emergency Ordinance 109 on SOE governance in 2011. While the progress under this reform effort has basically stalled and at times partially reversed, the changes in governance practices still seem to have born some positive impact on financial performance of several large SOEs during the 2012–13 period. The overall SOE performance has improved also due to putting loss-making SOEs Compania Nationala a Huilei (a large coal producer) and SC Termoelectrica SA (an energy company) into liquidation.

9. SOEs relatively low debt level and adequate liquidity situation suggest that systemic risk related to debt repayment is moderate. This of course varies from one SOE to another and the low level of debt can partly be explained by reluctance of creditors to provide longer-term

funding to many SOEs. While the debt and liquidity situation does not change much when the highly profitable SOEs are excluded, there is a caveat—some of SOEs' assets, in particular, accounts receivables, are of low quality which usually is not reflected in the unaudited financial statements.



Sources: Ministry of Public Finance, Romanian Fiscal Council; and IMF staff estimates.

10. SOE arrears have declined substantially during the last three years (Box 2). However, some SOEs still have large and increasing arrears. This may have detrimental effects on the business environment, in particular by exacerbating the burden of already financially constrained firms which can ultimately push them out of business (European Commission, 2014). Arrears also help perpetuate a culture of non-payment and may contribute to the rise of nonperforming loans of the banking system. In case of Romania, the direct impact of SOEs arrears accumulation is largely born by the public sector as more than 70 percent of arrears are owed to the consolidated budget and other SOEs (creating a risk of being considered as state aid (European Commission, 2015), less than 1 percent to banks and the remaining—to other creditors. Hence, reducing arrears can generate valuable public resources for much-needed investment and contribute to restoring financial health of businesses, especially small- and medium-sized enterprises.

C. Reasons for Poor Performance

11. Many SOEs have not faced hard budget constraints. Management compensation is generally not linked to the performance and non-wage payments in the form of various benefits continue to be implemented in many SOEs despite their precarious financial situation. Also, line ministries have usually been reluctant to initiate liquidation or insolvency procedures even in cases where it is evident that the SOE operations are not financially sustainable. In cases, where SOEs have been put under insolvency, the process has often been dragged on without addressing the fundamental problems of inefficiency. A notorious example is the case of chemical company Oltchim which can be contrasted with that of energy producer Hidroelectrica (Box 3).

12. SOEs in general lack professional management both at the executive level and at the level of boards. Appointments have often reflected political affiliations and connectedness to line ministries (Dochia, 2014). The situation might have been somewhat different in SOEs where

Government Emergency Ordinance 109/2011 on corporate governance was implemented. However, even in those cases, the process of selection of candidates for the management positions was not always fully exempt from line ministries' interference and many appointments were subsequently reversed. Notorious examples include several SOEs operating in the transport sector where implementation of GEO 109 started in late 2012. In CFR Infrastructura, the management was dismissed three times since then, every time coinciding with the new transport minister appointment. In SOE Tarom, the composition of the board changed four times during two years.

13. There is no clearly defined SOE ownership policy and the tutelary authority interference is extensive. This creates a potential for conflicts of interest in the SOEs governance framework as the line authorities (usually line ministries) that exercise ownership role in SOEs are also responsible for establishing sectoral strategies, implementing government's policies and conducting privatizations. Consequently, they often have conflicting interests over various issues and may sacrifice good corporate governance objectives over other priorities including political expediency. In such cases, line ministries' interference, especially when done through the issuance of ministerial orders, can be quite disruptive for SOEs effective management (Dochia, 2014).

14. Monitoring of SOEs performance has not been effective. Even though an SOE monitoring unit has been established, developing a framework for assessing SOE performance remains a work in progress. SOEs performance has not yet been properly assessed. The monitoring unit collects detailed SOE financial data but the reports it produces need to be enriched with more analytical depth and recommendations. It is not empowered to call for remedial actions or initiate actions that would hold SOEs and relevant line ministries accountable for poor financial performance. Reporting by SOEs is another issue. Only a few SOEs publish financial reports based on International Financial Reporting Standards (IFRS). The audits of many SOEs financial statements may not be conducted in line with the international standards. Even if they are, the audit reports often contain numerous material qualifications which remain unaddressed from year to year.

D. Impact of Implemented Reforms

15. Progress with reform efforts that target improved SOEs performance and more efficient use of resources in the economy has been mixed. The government's approach to achieve these goals has included: (i) SOEs Initial Public Offerings (IPO) and privatization; (ii) improved monitoring of SOEs financial performance and arrears reduction; (iii) professionalization of SOEs boards and management (GEO 109); (iv) restructuring or liquidation of unviable SOEs; and (v) energy market deregulation. There have been both achievements and setbacks virtually on all fronts.

16. IPOs implementation so far has focused on the energy sector. Under the current SBA arrangement, there have been three successful IPOs including a majority IPO of the electricity distribution company Electrica and a landmark IPO of Romgaz, the main gas producer in Romania. However, IPOs of two other large energy companies, Hidroelectrica and Oltenia, have been delayed. Hidroelectrica has been under insolvency from which it is expected to exit during 2015. Meanwhile, it has undergone substantial restructuring that promises to make it another successful IPO

candidate once the insolvency process is over. Oltenia's performance, on the other hand, has deteriorated reflecting in part inefficient management, bad accounts receivables and highly depreciated assets, and calls for a long overdue restructuring.

17. Majority privatization attempts of SOEs have usually not been pursued successfully.

This seems to be partly due to political economy reasons and partly to inefficient organization of the process. A recent example is the case of rail freight company Marfa. Marfa's privatization attempt failed in late 2013 as it was not concluded before the expiration of the deadline set in the government decision approving the transaction. Since then, the government committed to an aggressive restructuring of Marfa; however, tangible restructuring measures did not start until mid-2014 when a substantial reduction (over one fourth) in the number of its staff happened.

18. SOE monitoring has improved and arrears have been reduced substantially. The government has moved from quarterly data collection to monthly collection and reporting of financial indicators on all central government-owned SOEs. It also started collection of data on the age profile of the SOEs liabilities including that of arrears. While the quality of reporting needs further improvement as the reporting entities often revise substantially the preliminary data, these are major steps towards better monitoring and ensuring timely action. SOEs arrears have been reduced under the program, albeit the measures and the pace of reduction have fallen short of the original plans (Box 2).

19. The adoption of the Government Emergency Ordinance (GEO) 109 in 2011 was a major step in the right direction to provide good principles for SOE governance. The legislation contains necessary provisions for depoliticization and professionalization of SOE governance through procedures for the selection, appointment, and functioning of SOE boards and managers. It provides for increased transparency and information disclosure to help enhance SOEs' accountability to the Romanian public. Minority shareholders' protection in SOEs is also integrated in the ordinance.

20. However, implementation of GEO 109 has been weak. The selection and appointment of professional management under the GEO 109 was implemented only in 33 SOEs. For various reasons, the majority of the newly appointed boards in those SOEs were dismissed and, as a result, only a handful of SOEs out of about 250 central government-owned SOEs at present have boards appointed according to GEO 109 (Dochia, 2014). Dismissed board members were replaced with interim members who were not selected through procedures prescribed under GEO 109. Several factors have led to difficulties in implementation, including misplaced expectations, the lack of an institution charged with overall monitoring of implementation, the absence of an effective state owner to hold SOEs accountable for results as well as weaknesses and gaps in the GEO 109.

21. The government has recently set up a High Level Commission (HLC) tasked with ensuring proper implementation of GEO 109. This Commission is intended to monitor, implement and assess the effects of the application of the provisions of the GEO 109. The SOE monitoring unit at the Ministry of Public Finance (MoPF) has been tasked to act as a supporting unit for the HLC.

However, so far there has been no tangible action on the part of the HLC and its effectiveness remains to be seen as it seems to lack ownership and enforcement tools.

22. There have been very few cases of tangible restructuring of SOEs and at the same time the government has been highly selective in initiating insolvency or liquidation. Large energy sector SOEs like Hunedoara and Oltenia as well as several rail sector SOEs and their subsidiaries are not likely to become financially sustainable if they continue their current mode of operations. Furthermore, delaying the necessary adjustment often exacerbates the situation leading to even larger losses for the state as the main shareholder and often the largest creditor. The example of Hidroelectrica suggests that it is possible to restructure an SOE through insolvency if there is a credible plan and effective administration.

23. The government has made important progress on energy market deregulation, but the reform agenda is unfinished. Electricity sales to non-residential consumers are now fully sourced from competitive markets and those to residential consumers have been so far deregulated according to the roadmap (still leaving 60 percent sourced from non-competitive market). Regarding the gas price deregulation, after a delay in the second half of 2014, the prices have been fully deregulated for non-residential consumers as of beginning of 2015. However, for residential consumers, the government decided to postpone the gas price deregulation and extend the deadline until 2021. A new roadmap still remains to be approved.

E. Further Reform Priorities

24. Move ahead steadfastly with the IPO and privatization agenda. The HLC should ensure that the unit responsible for privatizations fully employs already existing expertise of the successful IPOs and is provided with needed additional resources. While the way private ownership is brought into SOEs is important, it should not be the main focus of the efforts as the end objective is to improve SOEs operations and resource allocation in the economy. Circumstances can and do change and SOEs that were slated for IPOs may now have better chances to attract private ownership through a majority privatization and vice versa. Energy SOE Oltenia and rail freight SOE Marfa are cases in point.

25. Assess SOEs performance against clearly set targets and performance indicators and report transparently. These targets and indicators should include general indicators such as profitability as well as sector-specific indicators and must be reviewed and set on a timely basis to allow for due preparation and approval of SOEs budgets. Increased SOE governance transparency is also important to enable proper public oversight and provide for additional accountability for improved performance. In this regard, the OECD provides helpful guidance on accountability and transparency for state ownership (OECD, 2010). The government, through the SOE monitoring unit, needs to make sure that SOEs annual reports are published on a timely basis.

26. Swiftly submit the revised draft legislation on SOE corporate governance for parliamentary approval. The revised draft should adequately reflect the suggestions provided by partner international institutions. These suggestions, amongst other things, focus on appointment

and dismissal of SOEs board members, their mandate contracts and administration/management plans, SOEs annual budgets, as well as on the MoPF's oversight role.

27. Exercise political will to implement provisions of the new legislation as improved legislation alone will not ensure progress. While the government has reiterated its commitment to improved SOE corporate governance in line with good international practice, it is time for concrete action to achieve firm progress on this important reform agenda and to make headway against public disappointment with the reform becoming entrenched. To this end, the HLC could play an important role by ensuring regular monitoring and assessment of SOE corporate governance through requesting from tutelary authorities of SOEs progress reports on corporate governance legislation implementation as well as on SOEs financial performance against targets. The HLC could also review and propose a reduction in the scope of ministerial orders that interfere with SOEs management functions and promote stability of the management boards which is important for business planning and implementation.

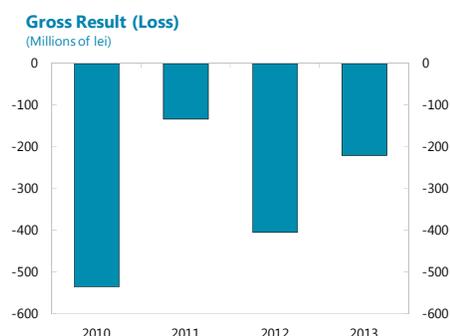
28. Restructure loss-making SOEs, put them into insolvency or liquidate them to ensure improved resource allocation. A number of loss-making SOEs, in particular in the energy and transportation sectors, need immediate restructuring. Restructuring is likely to involve substantially downsizing of operations and hence should be well planned with public resources budgeted as needed to mitigate social costs. In cases, where it is clear that the company is not financially viable, insolvencies should not be used as a vehicle to keep SOEs operational for prolonged periods of time.

29. Establish an ownership policy to complement the framework for SOE governance with clear separation of government's functions of ownership, governance, and monitoring. Centralizing the ownership function may deliver separation of ownership interests and policy objectives thus constraining the line ministries' influence on SOEs governance. However, experience, such as that of Greece's Asset Development Fund (IMF, 2014), suggests that without political will the institutional setup alone cannot ensure such a separation. The HLC could potentially play the role of an ownership coordinating entity.

30. Continue with the energy market deregulation. The government needs to continue with the implementation of the electricity market deregulation roadmap for households to achieve full competitive market sourcing by end-2017. A new roadmap for gas price deregulation for household consumers needs to be adopted, while at the same time strengthening the support for the most vulnerable consumers.

Box 1. Rail Freight SOE CFR Marfa's Performance

CFR Marfa, with its rigid business and management culture, has not been able to adjust to changing market conditions. Its market share shrank by almost 50 percent during the last decade due to competition from private rail freight operators as well as road freight. CFR Marfa has been making losses since 2008, and despite significant cuts in staffing and costs, it has been facing the prospect of bankruptcy. According to the World Bank (2013), the company's labor productivity had essentially halved, as had locomotive and rail car productivity. In 2013, CFR Marfa managed to somewhat improve its performance, but it still retained far more staff and assets than its operations justified. This low productivity is also evidenced in the table below which compares CFR Marfa to its regional peers, also state-owned companies, and to a domestic operator.



Source: Ministry of Public Finance.

Under these circumstances, privatizing CFR Marfa is the only viable option. This would give the company commercial freedom and opportunity to aggressively restructure in order to achieve radical improvements in productivity and asset utilization. CFR Marfa's privatization has been on the government's agenda since 2012 and the government approved a decision to privatize CFR Marfa in February 2013.

However, the process has not been successful so far with one attempt failing to materialize in October 2013.

In 2014, after protracted preparations of a restructuring plan and delays with its implementation, the company managed to reduce its staffing by almost 30 percent.

This was a major step and in order to make CFR Marfa more attractive for potential private investors the restructuring needs to continue along with the preparations for another attempt to privatize it during the course of 2015. In particular, the restructuring should focus on: (i) improving the management of the company by appointing professional management and implementing sound corporate governance principles; (ii) rationalization of services with possible re-pricing to limit loss-making operations; (iii) further reduction in staffing; and (iv) disposal and scrapping of non-utilized assets.

Selected Indicators for Rail Freight, 2012

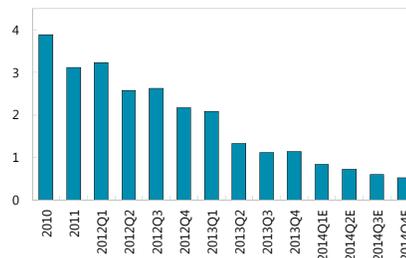
	Global traffic, thousand tonnes	Average number of employees	Tonnes per employee
CFR Marfa	31,282	8,411	3,719
PKP Cargo (Polish)	126,745	28,100	4,510
CD Cargo (Czech)	73,188	8,900	8,223
GFR SA (private Romanian)	12,000	2,368	5,068

Source: International Union of Railways Database; Companies' websites; and IMF staff calculations.

Box 2. Details on SOE Arrears¹

SOE arrears have declined substantially during the last three years. The EU-IMF supported program targets a reduction in arrears with a view to bringing them to a de minimis level (<0.2 percent of GDP); however, progress in this direction has become increasingly challenging. The authorities missed the end-December 2013 indicative target on arrears by a substantial margin. As a prior action for the combined first and second reviews the authorities implemented specific measures including budgetary transfers, placement of several SOEs into voluntary liquidation and insolvency procedures, and implementation of restructuring measures to reduce SOE arrears significantly. As a result, end-June 2014 arrears declined to RON 4.8 billion or 0.7 percent of GDP, however, the target was missed again. At end-2014, arrears fell further to RON 3.5 billion.

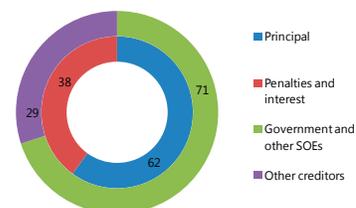
SOE Arrears 1/
(Percent of GDP)



1/ Central government-owned solvent SOEs.
Source: Ministry of Public Finance; and IMF staff estimates.

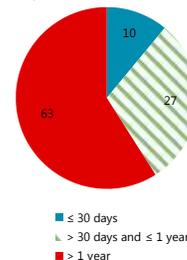
The large share of accrued penalties and interest is a challenge for further reduction. Out of total arrears, around 40 percent are accrued penalties and interest. Since they keep accruing on outstanding stock of arrears, the total stock of arrears may increase even if there is no increase or there is only a modest decrease in principal. Thus, without a major reduction in principal, it would be hard to achieve a tangible reduction in the total stock of arrears. In case of SOEs deemed viable, this could happen through refinancing or budget transfers (including through capital increases) and arrears write-off. The former is difficult to arrange because of the high risk for potential creditors, while the latter is constrained by the fiscal framework and the EU rules on state aid as around 70 percent of arrears are due to the general government and other SOEs. Given these constraints, the authorities should focus efforts on steadfast implementation of SOE restructuring and privatization plans and on liquidating unviable SOEs to achieve a sustainable improvement in SOEs finances and to put arrears on a firmly downward path.

Composition of SOE Arrears, end-2014
(Percent)



Most arrears have been overdue for more than one year. SOE arrears under the program include all payments past due date since until recently no data on age profile was available. New monthly data show that around 10 percent of the arrears are less than 30 days past due and around 30 percent are more than 30 days but less than one year overdue.

Arrears Profile by Age, end-2014
(Percent)



Source: Ministry of Public Finance; and IMF staff estimates.

The situation with local government-owned SOE arrears is worrisome.

While not part of the program conditionality, the monitoring of these arrears reveals that they have increased since end-2013 (to around 1 percent of GDP). The latest data shows that around two thirds of the local government-owned SOE debt is overdue payments. Again, as in the case of central government-owned SOEs, most of the arrears are due to the general government and other SOEs and addressing these requires similar measures as listed above for the central government-owned SOEs.

¹ Central government-owned SOEs. Excludes arrears of those SOEs that are under insolvency or liquidation.

Box 3. Oltchim and Hidroelectrica: A Tale of Two Insolvencies

Oltchim is a majority state-owned petro-chemical manufacturer with more than 2,000 employees. It has been under insolvency since January 2013. During 2001–13, there were eight attempts to privatize the company, all failing as either the process was put on hold by the authorities or contracts with winning bidders were cancelled. Lately, there has been a lack of investor interest. The company has been loss making for the past seven years and has debt close to equivalent of €800 million most of which is overdue. The company has also continued to accumulate arrears to the state budget. Such

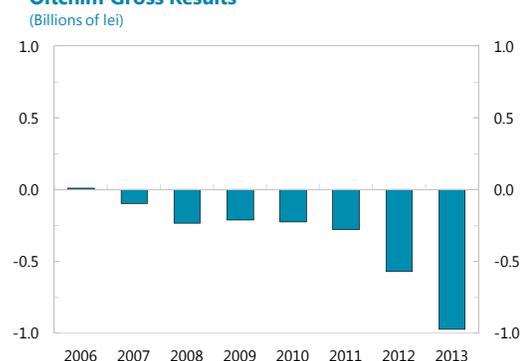
a dire financial situation is the result of highly inefficient operations and poor management of the company. During 2009–12, when revenues dropped by more than 30 percent, the wage bill increased by around 40 percent despite the fact that the total number of employees decreased by more than 10 percent. At the same time, the company seems to have entered into a number of ineffective contracts, some of them reportedly with connected parties. The situation has worsened further during the insolvency. Under these circumstances, unless the insolvency administrator radically changes its approach to managing Oltchim's operations, its liquidation seems to be the only solution to stop further losses and allow for the possibility of some asset recovery for its creditors.

Hidroelectrica is one of Romania's largest energy producers, supplying up to a third of Romania's domestically produced electricity. However, poor corporate governance, characterized by heavy political interference in management and operating decisions, made it one of the least efficient and least profitable hydro power producers.

The government placed Hidroelectrica into insolvency procedures for the first time in June 2012 in view of its deteriorating financial position. Under insolvency procedures, Hidroelectrica is being restructured, while it continues to operate. The judicial administrator has made

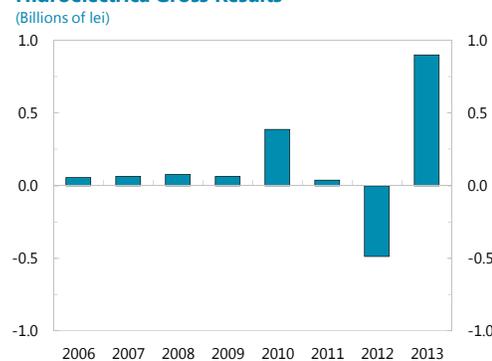
notable progress in improving Hidroelectrica's financial performance. The administrator cancelled or renegotiated all non-commercial bilateral energy contracts, which absorbed well over half of its output and cost the company an estimated €1.1 billion in lost revenue. The cancellations also eliminated the need for Hidroelectrica to buy more expensive electricity from other state-owned producers and sell it at a loss to meet contracted volumes. Moreover, the administrator managed to achieve substantial cost savings throughout the company's operations. Continued progress will be key for the success of the company's planned IPO.

Oltchim Gross Results



Source: Ministry of Public Finance

Hidroelectrica Gross Results



Source: Ministry of Public Finance

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EXPORT PERFORMANCE AND EXTERNAL COMPETITIVENESS¹

Core Questions and Findings

- **How did Romania's exports perform in recent years?**

Romania's export growth performed well during the post global crisis period, as reflected in steady gains in market share and increases in export-to-GDP ratios. The market share in the imports of main trading partners rose by 37 percent during 2008–13, and the share for transport equipment more than doubled. Most industries have a fairly high domestic value-added content in their exports. Nevertheless, the quality of exports is lower compared to regional peers.

- **What were the key driving forces behind Romania's strong export performance?**

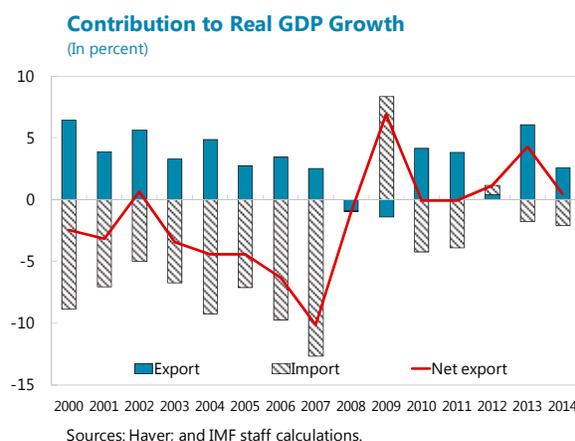
Export decomposition analysis suggests that domestic push factors (competitiveness effect) were the main driving forces of the positive export growth during 2006–13. While external demand factors also contributed positively to export growth until the global crisis, they became unfavorable for Romania since then.

- **What are policy priorities for securing a vibrant and sustainable export sector?**

Regression analysis indicates that maintaining price competitiveness and alleviating structural impediments are the key ingredients for future sustainable export growth. In this context, it remains crucial to continue allowing for exchange rate flexibility, while at the same time upgrading infrastructure and improving vocational training to attract FDI and boost export growth. Moreover, raising further export quality, promoting export diversification and repositioning toward higher-skill export products would help to protect against shocks and create opportunities to benefit from export-led growth in the medium term. Promoting FDI and facilitating participation in global value chains are essential parts for such a strategy.

A. Introduction

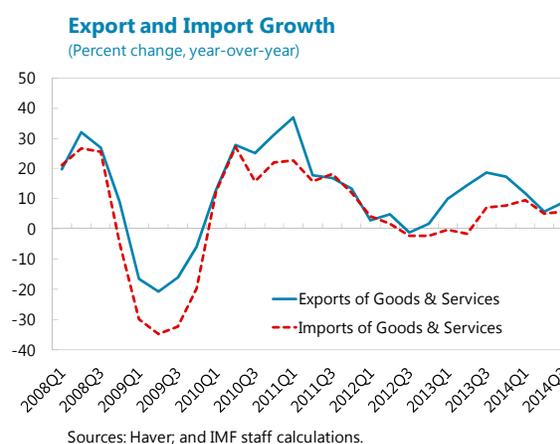
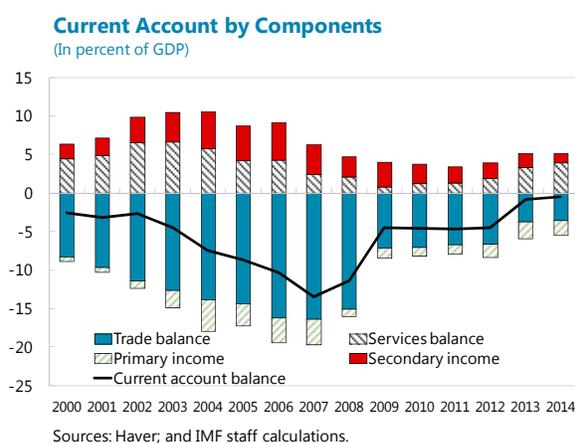
1. Romania's external account position has undergone a major transition since the global financial crisis. Prior to 2008, net export contribution to the overall economic growth was mostly negative and gradually trending down. While the contribution from real export of goods and services was broadly stable, import growth steadily increased on the back of



¹ Prepared by Lucy Qian Liu.

a stellar economic performance. The crisis forced a swift adjustment in the external sector, with the net export contribution rising by about 16½ percentage points during 2008–09. Over the past few years, strong performance in exports outweighed a gradual recovery in imports, translating into a positive contribution of net exports to overall GDP growth.

2. The improvement in the trade and service balances has led to a sharp correction of the current account balance. The current account deficit fell to 4.2 percent of GDP in 2009 from its peak of 13.4 percent in 2007. The trade balance—particularly a sharp decline in goods imports—has been the main driver of the adjustment, reflecting a substantial compression in domestic demand. Notwithstanding a weak external environment, exports of goods and services witnessed a remarkable growth since 2010, replacing import compression as the major contributor to the improvement in the current account.



3. Against this background, this paper investigates the main factors behind Romania’s recent export performance and assesses the country’s underlying external competitiveness.

The recent strong growth in Romania’s exports prompts an important policy question: is the export performance due to cyclical factors, such as favorable external demand, or structural improvements from the domestic supply side? The analysis in this paper contributes to a response to this question. First, it conducts a comprehensive assessment of Romania’s export performance using a wide range of indicators. And second, it identifies the key factors that drive export growth. This will allow developing policy priorities with a view to promoting export-led growth and preserving macroeconomic stability. The analysis will focus on goods exports only, as the service balance historically contributed only a small share to the overall current account balance.²

² The balance of the service account improved noticeably in 2013, due primarily to the change in data collection. Domestically the service sector has been booming in 2014 as regards job creation. This, however, has not translated to a major upsurge in service exports, indicating an area for future growth opportunities.

B. Export Performance

4. Romania's exports have gradually regained ground after bottoming during 2007–09.

Exports of goods as a percent of GDP rose to 34 percent in 2013, surpassing the pre-crisis average of 28 percent of GDP during 2000–07. While exports to non-European Union (EU) countries expanded noticeably during the post-crisis period, intra-EU exports during 2011–13 were only marginally higher than their pre-crisis peak in 2004, reflecting the sluggish recovery in the EU economy. Nevertheless, the EU remains the main destination of Romania's exports, receiving more than 70 percent of its goods exports during 2009–13.



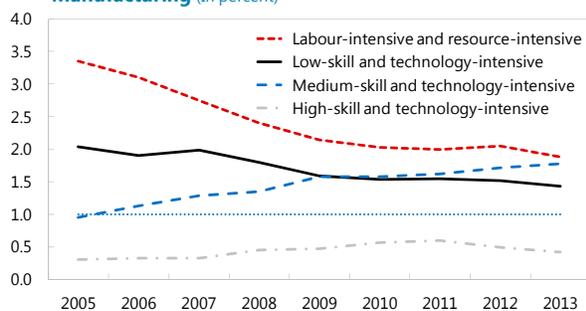
5. Romania's exports exhibit revealed comparative advantages (RCA) in labor intensive goods and low and medium-skill manufactures, but disadvantage in high-skill manufactures.³

The RCA in labor intensive and low-skill manufactures has been declining in the past ten years, accompanied by a steady increase of the RCA in medium-skill manufactures. High-skill manufactures continued to show comparative disadvantage throughout the period, albeit a moderate improvement in 2010–11. During this structural transformation process, exports from the once strong textile industry (labor intensive goods) shrank significantly, whereas the non-electronics machinery and transport equipment industry (medium-skill manufactures) has transformed from being a revealed comparative disadvantage to an advantage.⁴ In particular, machinery and transportation equipments have become the primary export products, accounting for about 40 percent of total merchandise exports in 2007–13. Transport equipment is the major driver of the recent export growth, with its international sales more than doubled between 2007 and 2013. As the industry continues to develop even further, Romania is gradually establishing itself as an important automotive producer in Eastern Europe.

³ A country is said to have revealed comparative advantage (disadvantage) in a product if the product's RCA index is above (below) 1, which indicates that the country's exports of this product account for a larger (smaller) share in its total exports than the global export share of the same product.

⁴ The literature identifies the rises of labor cost (due to increases in the minimum wage), shortage of labor supply, and the integration into GATT in 2005 as the main factors behind the fall in the textile industry (see Tudor, 2012). In addition, the fast growing of the Asian Supply Chain, particularly exports of China, also contributed to a significant erosion of market share in the global market.

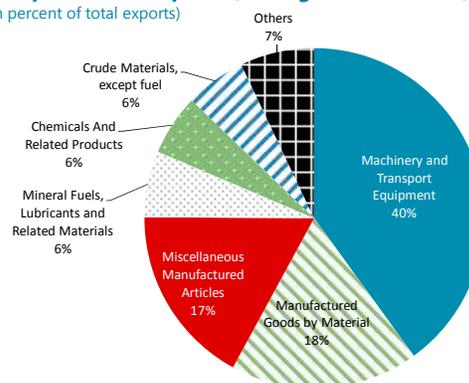
Revealed Comparative Advantage by Degree of Manufacturing (In percent)



Note: The classification of degree of manufacturing in UNCTAD Stat follows the definition from Trade and Development Report (2002). An RCA index above 1 indicates that the country's exports of the product account for a larger share in its total exports than the global export share of the same product.

Sources: UNCTAD Stat; and IMF staff calculations.

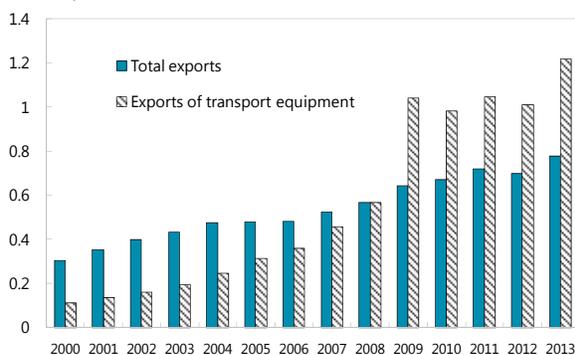
Composition of Exports (Average of 2007-2014) (In percent of total exports)



Sources: Haver; and IMF staff calculations.

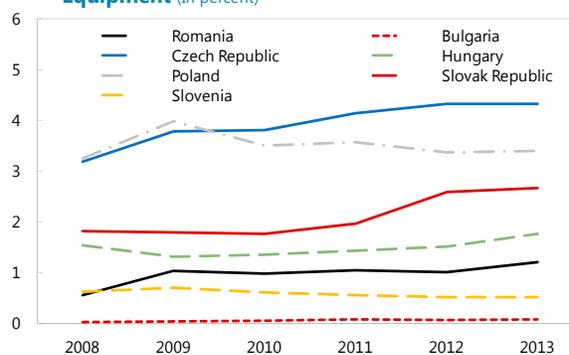
6. Strong export performance has led to a steady growth of Romania's market shares in the imports of its main trading partners. Using market share measures in its largest export region, the EU 28 countries, Romania's exports as a share of total EU imports rose from 0.3 percent in 2000 to 0.8 percent in 2013. Exports of transport equipment experienced a major boom during the post-crisis period, with its market share in the EU market more than doubling between 2008 and 2013. Despite this impressive growth, Romania still has a relative low market share compared to its regional peers.⁵ Many of the new EU member states expanded their market shares in the post-crisis period, creating more competition in the EU market.

Market Share in the EU (In percent)



Sources: UNCTAD Stat; and IMF staff calculations.

Market Share in the EU Imports of Transport Equipment (In percent)



Sources: UNCTAD Stat; and IMF staff calculations.

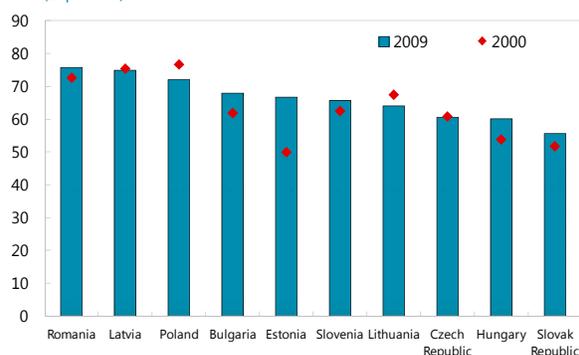
7. Romania's exports have a fairly high domestic value-added content, close to the OECD average. According to the OECD-WTO Trade in Value Added (TiVA) 2009 indicators,⁶ Romania's

⁵ This note uses the other relatively new EU member states as comparator group, including Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic, and Slovenia.

⁶ The OECD-WTO TiVA database only provides data for 2005, 2008 and 2009, while illustrative data going back to 1995 is also available.

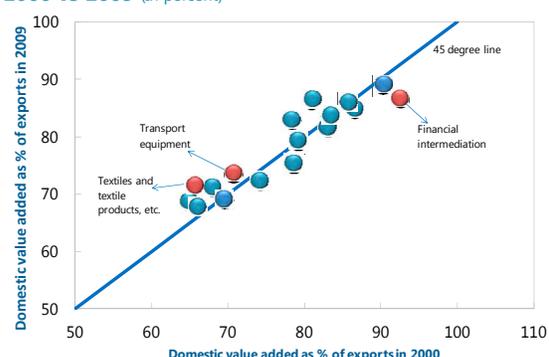
domestic value-added embodied in exports as a percent of total exports was almost 76 percent, the highest among regional peers. A higher domestic value-added ratio may indicate a good structure of domestic value chains, but it also suggests slow progress in integrating into global value chains (GVC).⁷ At the industry level, most of Romanian industries' domestic value-added contents were above 70 percent in 2009 and higher than in 2000. Increases were particularly large in the transport equipment and textile industries, likely reflecting technology and skill upgrades. Only few industries, such as financial intermediation, increased the foreign content of their exports between 2000 and 2009.

Domestic Value-added Export Ratio by Country
(In percent)



Sources: OECD-WTO TiVA indicators.

Domestic Value-added Export Ratio by Industry, 2000 vs 2009
(In percent)



Sources: OECD-WTO TiVA indicators.

8. Promoting export diversification and upgrading export quality could provide additional outlets for long-term sustainable export growth. Using the diversification indicators developed by an IMF team, Romania's export diversification improved considerably prior to the crisis but stagnated during 2008–10.⁸ Compared to regional peers, Romania scored well in export diversification across trading partners, whereas diversification across products still has room for improvement. In theory, greater diversification does not necessarily imply a higher export growth, but it could strengthen the resilience to external shocks and safeguard export stability.⁹ The sharp drop in the Euro zone's import demand during the crisis demonstrated Romania's vulnerability associated with its export specialization. Improving export quality presents another channel of promoting export growth. In this regard, most Romanian export products are in the lower range of the EU countries quality ladder, suggesting large potential for quality upgrading. On car exports,

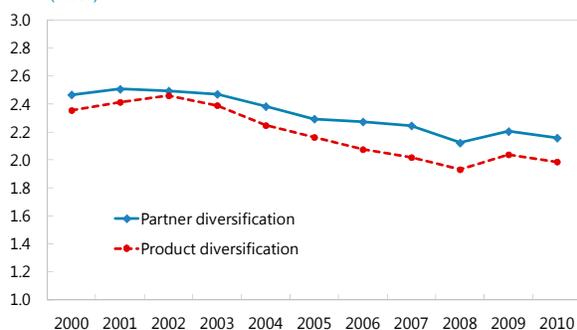
⁷ Most countries experience an increase in the domestic value-added export ratio in 2009, largely explained by the synchronized collapse of international trade in 2008 and its adverse impacts on global supply chains.

⁸ The Export Diversification database includes data only up to 2010, but a longer series of diversification measures compiled by UNCTAD Stat—the Herfindahl index—suggests that the degree of diversification remained broadly unchanged during 2009–13.

⁹ Many studies found the relationship between export diversification and growth is nonlinear, with developing countries often benefiting from diversifying their exports whereas advanced economies performing better with export specialization.

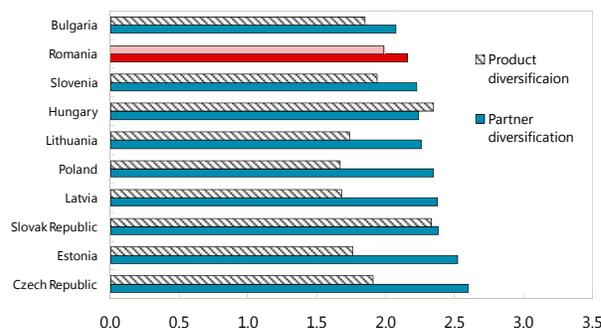
Romania has gradually improved its relative quality since 2003, moving from 83 percent to 88 percent of the world frontier. Comparing to regional peers, however, there is still much scope for further quality upgrading.

Export Diversification
(Index)



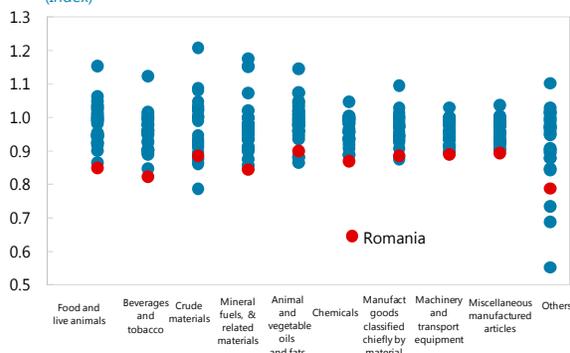
Note: Higher index values indicate less diversification.
Sources: IMF Export diversification database.

Export Diversification: Country Comparisons
(Index)



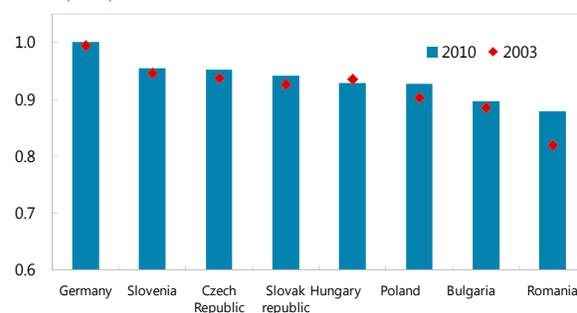
Note: Higher index values indicate less diversification.
Sources: IMF Export diversification database.

EU Countries Quality Ladder, 2010
(Index)



Sources: IMF Export Quality Database; and IMF staff calculations.

Quality of Car Exports by Country
(Index)



Note: The index is a relative measure with 90th percentile set to 1 in the relevant product-year combination for the world sample. Higher values indicate higher quality levels.
Sources: IMF Export Quality Database; and IMF staff calculations.

C. Export Decomposition Analysis

9. This section examines the driving forces of Romania’s export growth using a constant market share analysis of export decomposition. The constant market share analysis (CMSA), also known as the shift-share analysis, is a statistical decomposition methodology widely used in the trade literature.¹⁰ The general idea behind the CMSA is to decompose export market share changes into “pull” and “push” factors. While the former capture the impacts from changes in external demand or sectoral shifts in global markets, the latter demonstrate how different structures of individual countries’ exports affect their relative performance. The “push” factors are hence often

¹⁰ For the application of the CMSA, see ECB (2005), Cheptea et al. (2005), and Finicelli et al. (2011).

interpreted as a broad measure of an economy's "competitiveness" (see Annex I for technical details).

10. The analysis is conducted using annual merchandise exports data from UNTCAD Stat in value terms over the period 2006–13. The data covers Romania's trade flows with all trading partners. Sectors are grouped into industries according to the ISIC (International Standard Industrial Classification) 2 digits classification. The decomposition analysis focuses on variation in export market share along the intensive margin, that is, changes in each individual sector. However, given that trade flows may be created or destroyed during the reference period, the calculation of percent changes in market share could be problematic when there is an extensive margin change (emergence of new export products or discontinuing of existing export products). To cope with this issue, we deviate from the standard literature by using the "mid-point growth rate" to calculate the percent changes.¹¹

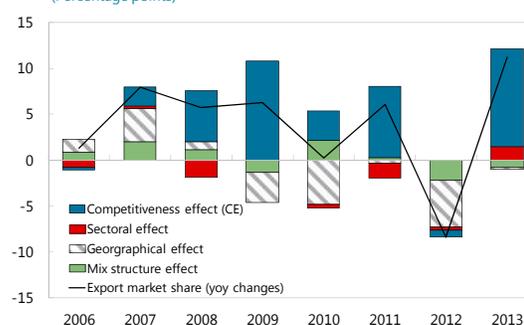
11. The results of the CMSA suggest that the competitiveness effect was the main driving force of the positive export growth from 2006–13. During this period, Romania's export market share in the global trade market increased from 0.26 percent in 2006 to 0.35 percent in 2011. Much of the change was explained by domestic "push factors," with its contribution mostly positive during the sample period except for 2006 and 2012. Among the "pull" factors, sectoral specialization contributed negatively during the onset of the global financial crisis, possibly reflecting the impact of the collapse of international trade. Changes in external demand had a positive impact prior to 2009, but became unfavorable for Romania since the start of the Euro zone crisis in 2009–10 due to its export concentration in the EU market. Moreover, the geographical composition effect accounts for most of the decline in 2012 reflecting continued distress in the Euro area. Overall, the positive push effect demonstrates that the domestic supply-side competitiveness possibly played a crucial role in Romania's recent export performance.

Results of the Constant Market Share Analysis
(Percentage changes, year-over-year)

	2006	2007	2008	2009	2010	2011	2012	2013
Export market share	1.3	7.9	5.7	6.2	0.2	6.1	-8.4	11.2
Competitiveness effect	-0.3	2.1	5.6	10.8	3.3	7.8	-0.8	10.7
Structure effect	1.6	5.9	0.2	-4.6	-3.0	-1.7	-7.6	0.5
Sectoral effect	-0.8	0.3	-1.8	0.0	-0.4	-1.6	-0.3	1.5
Geographical effect	1.5	3.7	0.9	-3.3	-4.8	-0.4	-5.1	-0.2
Mix structure effect	0.9	2.0	1.1	-1.3	2.2	0.3	-2.2	-0.8

Sources: UNTCAD Stat; and IMF staff calculations.

Export Performance Decomposition
(Percentage points)



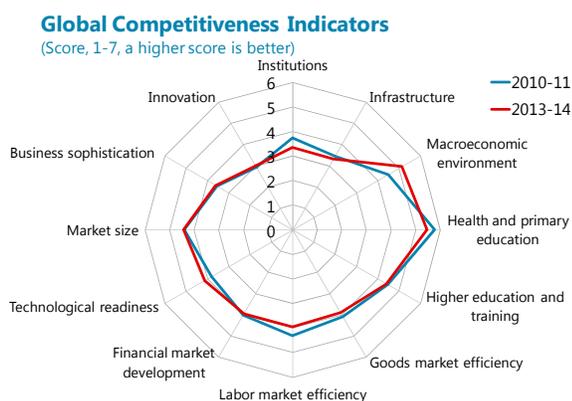
Sources: UNTCAD Stat; and IMF staff calculations.

¹¹ The mid-point growth rate is defined as $g_t = \frac{x_t - x_{t-1}}{0.5(x_t + x_{t-1})}$, where x_t denotes export market share in year t .

D. External Competitiveness

12. What have been the key driving factors behind developments in Romania’s external competitiveness and what are key policy priorities going forward? These are the key questions explored in this section. The analysis goes beyond the decomposition analysis, which presents a useful measure of competitiveness in general, but does not yield conclusions on how to improve a country’s competitiveness. Thus, this section investigates the relationship between the estimated competitiveness effects from the CMSA and a series of price and non-price competitive measures, with a view to identifying the underlying factors that determine Romania’s external competitiveness and policies how to influence them.

13. Measures of non-price competitiveness indicate that structural impediments could potentially weigh on Romania’s external competitiveness. The World Economic Forum’s Global Competitiveness Index (GCI), based on a comprehensive assessment of countries’ competitiveness, ranks Romania 76th out of 148 countries in 2013–14. While the macroeconomic environment and technological readiness improved over the past three years, structural conditions in many other areas deteriorated noticeably, including institutions, infrastructure, health and primary education, as well as labor market efficiency.¹² Overall, the 2013–14 survey identifies Romania as having a comparative advantage in macroeconomic environment and market size, but a disadvantage in institutions and infrastructure.

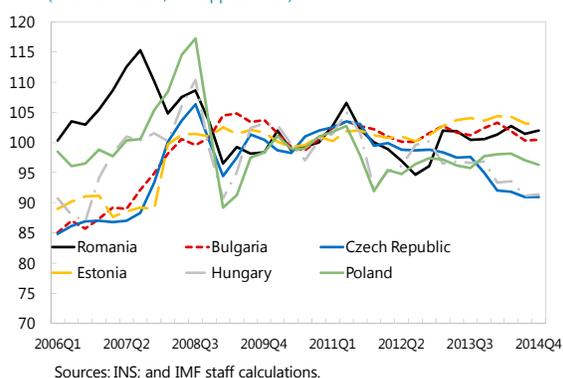


Sources: World Economic Forum, Global Competitiveness Report, 2013-14.

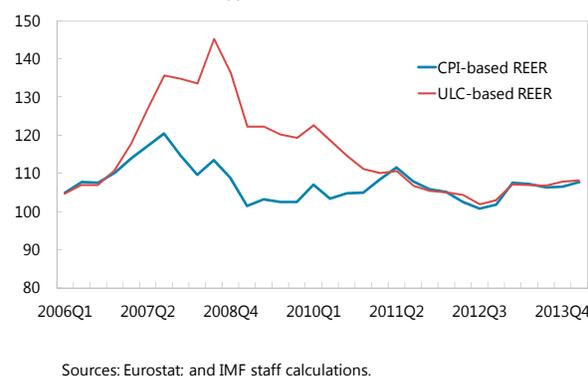
14. Turning to price competitiveness indicators, the Romania leu appreciated noticeably in real effective terms vis-à-vis the currencies of trading partners since 2012. Despite a fair amount of depreciation in 2011 and early 2012, the CPI-based real effective exchange rate (REER) appreciated 7¾ percent between 2012Q3 and 2014Q4. This exchange rate development was in contrast to that of its regional peers, as many of the neighbor countries experienced either only a moderate appreciation or even depreciation. The ULC-based REER has been moving closely with the CPI-based REER since 2011, although historically this measure suggests a much larger real exchange rate movement during 2007–10.

¹² Detailed measurements for each indicator are presented in Annex II.

Real Effective Exchange Rate, Country Comparison
(Index 2000=100, + = appreciation)



Real Effective Exchange Rate
(Index 2005=100, + = appreciation)



Box 1. Methods and Data Used to Estimate the Factors for Competitiveness

Regression analysis is used to examine how the various measures of price and non-price competitiveness impact the determinants of supply-side export performance (i.e., the competitiveness effect derived in the previous CMSA of decomposition).

Data: The sample period was chosen based on the availability of the competitiveness measures. Given that the World Economic Forum's GCI starts from 2006 and is available only on annual basis, we expanded our data sample to the industry level and conducted the analysis using a cross-industry panel regression (details are described in Annex II). Following the ISIC 2 digits classification, the data covers 64 industries across 8 years. Due to limitation of the annual series data, only 6 out of the 12 indicators from the GCI can be tested in the regression model.

Model: The supply-side export performance is modeled as a function of the ULC-based REERs and a set of selected indicators that measure the structural conditions of the economy.¹ The dependent variable is the industry-level competitiveness effect identified in the previous export decomposition analysis. The explanatory variables are indicators that cover the overall assessment of Romania's institutions, infrastructure, macroeconomic environment, higher education and training, goods market efficiency, and labor market efficiency.² Two model specifications were considered: Model (1) estimates constant marginal effects of the structural conditions, and Model (2) estimates variable marginal effects.

¹ The ULC-based measure of the real effective exchange rate seems to be an appropriate choice in this context, given that our analysis focuses on goods exports, whereas the CPI also includes services and a large share of non-tradable goods. Nevertheless, we examined the effect of the CPI-based REERs, but the results are statistically insignificant.

² The higher education and training index covers a wide range of issues, including assessments on secondary education enrollment, the quality of education and the availability of specialized and on-the-job training services. We focus on training service in particular, as it most likely matters for the export industry.

15. The regression results suggest that alleviating structural impediments could help strengthen Romania’s export competitiveness. Among the structural indicators, infrastructure stands out as an important factor for export growth—better infrastructure is associated with increases in export competitiveness (text table). For illustration purpose, consider that the infrastructure index in Romania (GCI level of 3.33 in 2013–14) and would be upgraded to the level in Poland (GCI level of 3.96 in 2013–14). Though one has to take this with a grain of salt since these indices are developed using opinion surveys, such an upgrade could potentially expand Romania’s export market share by almost 15 percent.¹³ Favorable macroeconomic environment and better specialized training services could also enhance export performance.¹⁴ On the other hand, the effect of goods market efficiency is statistically robust in Model (2) only, which indicates that its impact is likely to be non-constant.

Export Competitiveness Effect Equation

Dependent variable = yoy change in export market share		
	Model (1)	Model (2)
REER (yoy change)	-0.02*	-0.01*
	(0.01)	(0.01)
<i>Global Competitiveness Index</i>		
Institutions	0.62	0.10
	(0.69)	(1.89)
Infrastructure	0.35**	1.63**
	(0.17)	(0.71)
Macroeconomic environment	2.85*	13.48*
	(1.50)	(6.98)
Specialized and on-the-job training services	2.61*	12.05*
	(1.42)	(6.45)
Goods market efficiency	1.13	7.98*
	(0.76)	(4.12)
Labor market efficiency	2.58	11.01
	(1.63)	(6.85)
Number of observations	512	512
R-squared	0.36	0.36
Number of industries	64	64

Note: Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1. All models include an industry fixed effect. Model (1) uses the level of the global competitiveness index; Model (2) considers the natural log of the competitiveness index.

16. In line with expectations, price competitiveness is also an important factor driving the supply-side export performance. According to the results of the estimation, a real exchange rate appreciation has a significant and negative effect on the growth of export market share (text table). All else equal, a 10 percent of REER appreciation could potentially reduce Romania’s export market

¹³ The estimated coefficients are the average marginal effect at the industry level. Hence, for the effect on the economy’s aggregate export, one needs to multiply the result by 64 (number of industries).

¹⁴ The forthcoming background paper for the New Member States (NMS) Policy Forum: “Making the Most of the EU Single Market” also cites vocational training and higher education attainment as obstacles for Romania’s export growth.

share by about 12 percent. To examine the appropriateness of Romania's current exchange rate level, we now present the results of the equilibrium exchange rate assessment.

17. Standard CGER-type methodologies for assessing the equilibrium exchange rate suggest that Romania's real exchange rate is broadly in line with medium-term fundamentals.¹⁵

The macroeconomic balance approach indicates that the projected underlying current account deficit is lower than the current account norm of 4.1 percent of GDP. Assuming that only exchange rate changes can deliver a current account adjustment, an appreciation of 3.1 percent would be needed to close the gap between the underlying current account and the norm. Similarly, the external sustainability approach points to a modest undervaluation of 3.2 percent, given that the current account norm required to maintain the International Investment Position (IIP) at the current level (60 percent of

Exchange Rate Assessment	
(In percent of GDP, unless otherwise indicated)	
Approach	Over- (+) or Under- (-) Valuation
Macroeconomic balance	-3.1
Current account norm	-4.1
Underlying current account	-3.3
External sustainability	-3.2
Current account norm	-4.1
Underlying current account	-3.3
Equilibrium real exchange rate	2.1

Source: IMF staff calculations.

GDP) is higher than the projected underlying deficit. Finally, taking into account the adjustment in the baseline projection, the equilibrium real exchange rate approach suggests a marginal overvaluation of 2.1 percent. Overall, considering the margins of error in these estimations, the real exchange rate is assessed to be in line with fundamentals.

E. Conclusion and Policy Discussion

18. Romania's export growth performed well during the post-crisis period, mostly supported by domestic push factors. Its market share in the imports of main trading partners has steadily increased, particularly in the machinery and transport equipment industry. Despite significant structural transformation in the last decade, Romania's revealed comparative advantage remained concentrated in labor intensive goods and low and medium-skill manufactures. While export diversification—both across products and trading partners—improved somewhat prior to the crisis, the process has stagnated since 2008. Most industries have a fairly high domestic value-added content in their exports, suggesting that Romania is gradually moving up the value-added chain. Nevertheless, the quality of Romania's exports is relatively low comparing to regional peers and most products are ranked in the lower range of the EU countries quality ladder.

19. Going forward, improving export quality, promoting diversification and repositioning toward high-skill export products are crucial for the development of vibrant export sectors.

Preceding the global financial crisis, Romania's export growth was largely facilitated by trading

¹⁵ For the details of the CGER methodologies, see IMF Occasional Paper No. 261, "Exchange Rate Assessment: CGER Methodologies."

partners' fast growing imports. In recent years, however, export expansions were mostly supported by the strengthening of domestic competitiveness. In light of continued weakness in trading partners' economic growth, Romania should build on the recent gains in structural competitiveness and boost export diversification to strengthen resilience to external shocks. In addition, repositioning toward exports of high-skill manufacturing goods presents a good potential for sustainable export growth in the medium term. At the industry level, upgrading export quality could help further improve export performance and safeguard medium and long-term sustainable growth.

20. Promoting foreign direct investment and participating in global value chains are also essential. Romania received sizeable amounts of FDI prior to the crisis, but the trend was reversed in recent years amid weak growth in the Euro area. The activity of foreign investment companies in Romania is generally export orientated and their contribution to total exports amounted to more than 70 percent in 2013.¹⁶ Given the vital role of FDI in export sectors, reviving FDI inflows can serve as an engine for future export growth. In this regard, policy priorities should be geared toward promoting a favorable business environment, including promoting sound and predictable macroeconomic policy, maintaining economic flexibility, and strengthening governance institutions. Furthermore, greater integration in global value chains could provide additional opportunities for Romania's exports. While participation in global value chains may temporarily erode a country's domestic value-added embodied in exports, the overall effect tends to be positive as the spur in exports typically raises the value-added generated both abroad and domestically (Rahman and Zhao, 2013).

21. Last but not least, maintaining price competitiveness and alleviating structural impediments are key ingredients for medium-term sustainable export growth. Standard assessment models suggest that Romania's real exchange rate is broadly in line with medium-term fundamentals. In this context, it remains essential to continue allowing for exchange rate flexibility and safeguard the competitiveness gains accumulated in recent years. On the structural front, upgrading infrastructure and improving vocational training are top priorities for attracting FDI and boosting export growth. In this regard, securing sufficient fiscal space for public investment and increasing the quality of capital spending is indispensable. More importantly, the focus should be given to enhance the quality and efficiency of project spending and boost the absorption of EU funds.

¹⁶ See "Foreign Direct Investment in Romania 2013" in <http://www.bnro.ro/PublicationDocuments.aspx?icid=14364>.

Annex I. Export Decomposition—Constant Market Share Analysis

1. The constant market share analysis (CMSA) used in this paper follows a similar formulation as that in ECB (2005), which decomposes changes in export market share between any two periods into two major components—domestic “push” factors and external “pull” factors. The main innovation is that we compute the percent changes in market share using a “mid-point growth rate” instead of the standard year-on-year growth rate. This technique allows us to accommodate both intensive and extensive margin changes in the export market.

2. More specifically, the decomposition of “push” and “pull” factors can be illustrated in the following equation:

$$g - g^* = [\sum_j \sum_k \theta_{jk} (g_{jk} - g_{jk}^*)] + [\sum_j \sum_k (\theta_{jk} - \theta_{jk}^*) g_{jk}^*] \quad (1)$$

where,

$$g_{jk} = \frac{X_{jk,t} - X_{jk,t-1}}{0.5 * (X_{jk,t} + X_{jk,t-1})} \quad \left[g_{jk}^* = \frac{X_{jk,t}^* - X_{jk,t-1}^*}{0.5 * (X_{jk,t}^* + X_{jk,t-1}^*)} \right]$$

is the growth rate of Romanian (world) exports of product k to destination j in period t ,

$$\theta_{jk} = \frac{X_{jk,t-1} + X_{jk,t}}{(X_t + X_{t-1})} \quad \left[\theta_{jk}^* = \frac{X_{jk,t-1}^* + X_{jk,t}^*}{(X_t^* + X_{t-1}^*)} \right]$$

is the share of product k to destination j in total Romanian (world) exports in period $t-1$, and

$$g = \sum_j \sum_k \theta_{jk} g_{jk} \quad [g^* = \sum_j \sum_k \theta_{jk}^* g_{jk}^*]$$

represents the growth of Romanian (world) total exports in period t .

3. The first term in the square bracket in equation (1) is domestic “push” factors or the “competitiveness” effect, which represents the aggregated impact of changes in market share of each product over each destination. The competitiveness effect for a specific industry k is the sum over all destination j . This item will be used as the dependent variable in our regression analysis of explaining the drivers of external competitiveness.

4. The second term in the square bracket in equation (1) represents external “pull” factors. A positive number indicates that Romania’s exports are more concentrated on high-growth products or markets comparing to world exports. This effect can be further decomposed into three items:

(i) a sectoral effect = $\sum_k (\theta_k - \theta_k^*) g_k^*$,

(ii) a geographical effect = $\sum_j (\theta_j - \theta_j^*) g_j^*$, and

(iii) a mixed effect = residual = $[\sum_j \sum_k (\theta_{jk} - \theta_{jk}^*) g_{jk}^*] - \sum_k (\theta_k - \theta_k^*) g_k^* - \sum_j (\theta_j - \theta_j^*) g_j^*$,

Where,

$$\theta_k = \sum_j \theta_{jk} \quad [\theta_k^* = \sum_j \theta_{jk}^*]$$

is the share of product k in total Romanian (world) exports in period $t-1$,

$$\theta_j = \sum_k \theta_{jk} \quad [\theta_j^* = \sum_k \theta_{jk}^*]$$

is the share of market j in total Romanian (world) exports in period $t-1$, and

$$g_k^* = \frac{\sum_j \theta_{jk}^* g_{jk}^*}{\theta_k^*} \quad \left[g_j^* = \frac{\sum_k \theta_{jk}^* g_{jk}^*}{\theta_j^*} \right],$$

is the growth of world exports of product k (market j) in period t .

5. The mixed effect is essentially a residual item, representing the interaction between the sectoral and geographical structures. This implies that the two structure effects are not independently distributed. Hence, item (i) and (ii) above provide a good proxy for the sectoral and geographical effect only when the mixed effect is small.

6. The CMSA formulation discussed above deviates from the traditional approach in several aspects, namely to address issues related to translating the continuous-time into a discrete-time decomposition formula and treating the sectoral and geographical effects in a symmetric fashion. See Cheptea (2014) for a more detailed discussion about the traditional CMSA formulation.

Annex II. Regression Analysis on External Competitiveness

A. Model Specifications

1. The econometric analysis examines the drivers of external competitiveness in an industry-level panel regression with industry effects. Two model specifications are considered to capture both constant and variable marginal effects of structural conditions. Model (1) is formulated as following:

$$\begin{aligned} \text{Competitiveness}_{kt} &= \alpha_k + \beta_0 \Delta REER_t + \beta_1 \text{Institutions}_t + \beta_2 \text{Infrastructures}_t + \beta_3 \text{Macro}_t \\ &+ \beta_4 \text{Traning}_t + \beta_5 \text{Goods}_t + \beta_5 \text{Labor}_t + u_{it} \end{aligned}$$

where “*Competitiveness_{kt}*” is the series of industry level competitiveness effect (“push” factors) computed in the previous CMSA decomposition. The availability of such a series allows us to concentrate the analysis on the effects of domestic factors exclusively. The term α_k represents the unknown intercept for each industry k , i.e., industry specific effects. “ $\Delta REER_t$ ” is the year-on-year change in ULC-based REER and the rest of the repressors are measures of structural conditions.

2. Model (2) follows a similar formulation as in Model (1) except the structural conditions are presented in natural log terms:

$$\begin{aligned} \text{Competitiveness}_{kt} &= \alpha_k + \beta_0 \Delta REER_t + \beta_1 \ln(\text{Institutions})_t + \beta_2 \ln(\text{Infrastructures})_t \\ &+ \beta_3 \ln(\text{Macro})_t + \beta_4 \ln(\text{Traning})_t + \beta_5 \ln(\text{Goods})_t + \beta_5 \ln(\text{Labor})_t + u_{it} \end{aligned}$$

3. The estimation results are broadly robust to the two model specifications.

B. Data Descriptions

4. The ULC-based REER data are extracted from Eurostat. Measures of structural conditions use the World Economic Forum’s Global Competitiveness Index (GCI) database covering the period from 2006–07 to 2013–14. The details for each indicator are listed below.

Institutions:

- 1.01 Property rights, 1–7 (best)
- 1.02 Intellectual property protection, 1–7 (best)
- 1.03 Diversion of public funds, 1–7 (best)
- 1.04 Public trust in politicians, 1–7 (best)
- 1.05 Irregular payments and bribes, 1–7 (best)
- 1.06 Judicial independence, 1–7 (best)
- 1.07 Favoritism in decisions of government officials, 1–7 (best)
- 1.08 Wastefulness of government spending, 1–7 (best)
- 1.09 Burden of government regulation, 1–7 (best)
- 1.10 Efficiency of legal framework in settling disputes, 1–7 (best)
- 1.11 Efficiency of legal framework in challenging regs., 1–7 (best)
- 1.12 Transparency of government policymaking, 1–7 (best)
- 1.13 Business costs of terrorism, 1–7 (best)
- 1.14 Business costs of crime and violence, 1–7 (best)
- 1.15 Organized crime, 1–7 (best)
- 1.16 Reliability of police services, 1–7 (best)
- 1.17 Ethical behavior of firms, 1–7 (best)
- 1.18 Strength of auditing and reporting standards, 1–7 (best)
- 1.19 Efficacy of corporate boards, 1–7 (best)
- 1.20 Protection of minority shareholders' interests, 1–7 (best)
- 1.21 Strength of investor protection, 0–10 (best)*

Infrastructure:

- 2.01 Quality of overall infrastructure, 1–7 (best)
- 2.02 Quality of roads, 1–7 (best)
- 2.03 Quality of railroad infrastructure, 1–7 (best)
- 2.04 Quality of port infrastructure, 1–7 (best)
- 2.05 Quality of air transport infrastructure, 1–7 (best)
- 2.06 Available airline seat km/week, millions*
- 2.07 Quality of electricity supply, 1–7 (best)
- 2.08 Mobile telephone subscriptions/100 pop.*
- 2.09 Fixed telephone lines/100 pop.*

Macroeconomic environment:

- 3.01 Government budget balance, % GDP*
- 3.02 Gross national savings, % GDP*
- 3.03 Inflation, annual % change*
- 3.04 General government debt, % GDP*
- 3.05 Country credit rating, 0–100 (best)*

Training:

- 5.07 Availability of research and training services, 1–7 (best)
- 5.08 Extent of staff training, 1–7 (best)

Goods market efficiency:

- 6.01 Intensity of local competition, 1–7 (best)
- 6.02 Extent of market dominance, 1–7 (best)

- 6.03 Effectiveness of anti-monopoly policy, 1–7 (best)
- 6.04 Effect of taxation on incentives to invest, 1–7 (best)
- 6.05 Total tax rate, % profits*
- 6.06 No. procedures to start a business*
- 6.07 No. days to start a business*
- 6.08 Agricultural policy costs, 1–7 (best)
- 6.09 Prevalence of trade barriers, 1–7 (best)
- 6.10 Trade tariffs, % duty*
- 6.11 Prevalence of foreign ownership, 1–7 (best)
- 6.12 Business impact of rules on FDI, 1–7 (best)
- 6.13 Burden of customs procedures, 1–7 (best)
- 6.14 Imports as a percentage of GDP*
- 6.15 Degree of customer orientation, 1–7 (best)
- 6.16 Buyer sophistication, 1–7 (best)

Labor market efficiency:

- 7.01 Cooperation in labor-employer relations, 1–7 (best)
- 7.02 Flexibility of wage determination, 1–7 (best)
- 7.03 Hiring and firing practices, 1–7 (best)
- 7.04 Redundancy costs, weeks of salary*
- 7.05 Effect of taxation on incentives to work, 1–7 (best)
- 7.06 Pay and productivity, 1–7 (best)
- 7.07 Reliance on professional management, 1–7 (best)
- 7.08 Country capacity to retain talent, 1–7 (best)
- 7.09 Country capacity to attract talent, 1–7 (best)
- 7.10 Women in labor force, ratio to men*

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EXCHANGE RATE PASS-THROUGH AND INFLATION TARGETING¹

Core Questions and Findings

- How has the degree of exchange rate pass-through to consumer and producer prices in Romania changed since the adoption of inflation targeting?** The introduction of inflation targeting has led to a decline in the level and volatility of consumer and producer price inflation, and likely better anchored inflation expectations. The degree of pass-through reduced to below 10 percent for CPI inflation, and to below 25 percent for PPI inflation, compared with a maximum of 45 percent prior to introducing inflation targeting. The reduction in pass-through is typically less prevalent in the lei-euro exchange rate, compared with the lei-dollar exchange rate.
- What are the main drivers of Romanian inflation dynamics, especially in more recent years with relatively low inflation?** The role of the exchange rate in explaining fluctuations in consumer prices has declined. The exchange rate accounts for about 5 percent of fluctuations in CPI inflation since the adoption of inflation targeting, while this number was higher at around 10 to 30 percent prior. For PPI inflation, the share of innovations explained by the dollar-lei exchange rate has declined to about 10 percent, while the importance of the lei-euro exchange rate has been stable. World commodity prices have overtaken the exchange rate as the most important factor in explaining PPI inflation in recent years, after its own innovations, accounting for almost 30 percent of the fluctuations in PPI inflation.
- What are the potential policy implications from the declined pass-through?** The impact of exchange rate pass-through appears to depend on the monetary policy regime and the level of inflation in the economy. The credibility of a low inflation regime, and clear communications from the central bank could help anchor inflation expectations in the economy and reduce in part vulnerabilities of the economy to external shocks. The reduction in the degree of pass-through, combined with a declining share of foreign-currency denominated loans, suggests that Romania could afford to allow more flexibility in its exchange rate, which could in turn lead to a reduction in pass-through. The decline in exchange rate pass-through, if permanent, is a favorable development for sustainable inflation convergence and for meeting the convergence criteria for joining the euro zone in the medium and long run.

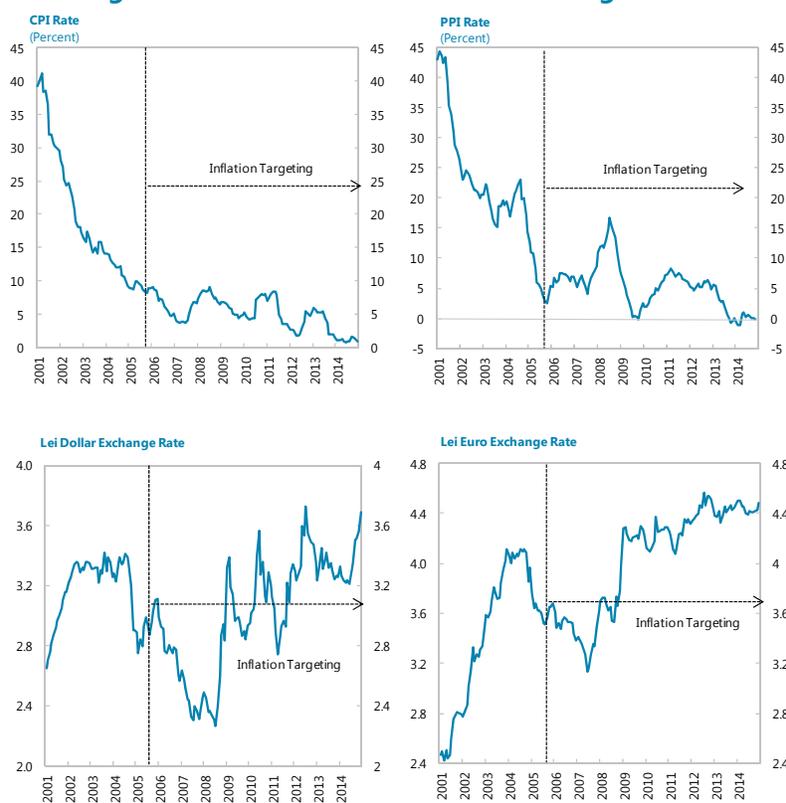
A. Introduction and Motivation

1. After long episodes of disinflation, inflation is now close to its target range. Romania experienced elevated levels of inflation in the early 2000s. Consumer and producer price inflation peaked at around 40 percent, and averaged around 25 percent between January 2000 and July 2005 (Figure 1). Since the announcement of moving toward inflation targeting from August 2005, the

¹ Prepared by TengTeng Xu.

inflation rate has fallen drastically, to an average of around 5½ percent for both consumer and producer prices (Table 1). In September 2013, CPI entered the National Bank of Romania’s (NBR) target band of 2.5 percent (± 1 percent) and fell below the lower bound for most of 2014, partly due to one-off factors, as well as a persistent output gap and falling inflation expectations.

Figure 1. Romania Inflation and Exchange Rates



Source: National Institute of Statistics, Romania; National Bank of Romania; Haver Analytics.

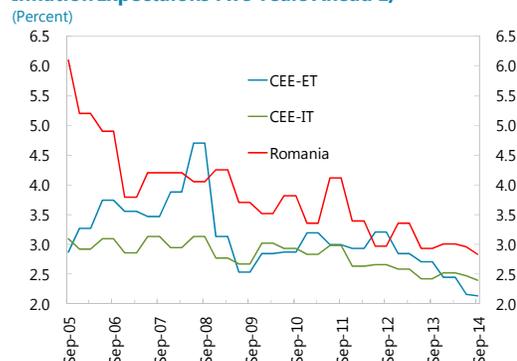
Table 1. The Level and Volatility of Inflation Declined Post Inflation Targeting

		PPI inflation	CPI inflation	Lei-dollar ex rate	Lei-euro ex rate
Full sample (2000M1–2014M8)	Mean	14	12.6	3	3.7
	Std. Dev.	14.6	12.6	0.4	0.7
Pre-IT (2000M1–2005M7)	Mean	27.9	24.4	3	3.2
	Std. Dev.	15.1	13.7	0.4	0.7
Post IT (2005M8–2014M8)	Mean	5.4	5.3	3	4
	Std. Dev.	3.7	2.3	0.4	0.4

Source: National Institute of Statistics, Romania; National Bank of Romania; Haver Analytics; IMF staff calculations.

2. The exchange rate has been a key factor for Romania's monetary policy but the pass-through to inflation has diminished. The exchange rate has been largely flexible with the transition to inflation targeting, and at times, moved significantly contributing to correct external imbalances. At the same time, the exchange rate has continued to play an important role in monetary policy making, including through foreign exchange interventions. During the pre-inflation targeting period, the degree of exchange rate pass-through to inflation was found to be large and relatively fast. It was estimated to have reached at a maximum of 59–72 percent for producer prices and 27–43 percent for consumer prices (see, for example, Gueorguiev, 2003). After nearly a decade of transitioning to inflation targeting, this paper assesses how the pass-through has evolved. The experience of other inflation targeting small open economies suggests that the degree of exchange rate pass-through tend to decline with the introduction of a credible regime of inflation targeting (Floerkemeier, 2013, and Winkelried, 2014). One possible explanation for the declined pass-through is better anchored inflation expectations following the introduction of inflation targeting, with a low and more stable inflation rate leading to reduced pass-through (Choudhri and Hakura, 2006).

Inflation Expectations Two Years Ahead 1/



1/ Exchange-rate targeting CEE (CEE-ET) includes Bulgaria, Croatia and Lithuania. Inflation targeting CEE (CEE-IT) comprises of Czech Republic, Hungary, Poland and Romania.

Source: Consensus Forecasts.

Box 1. Inflation Targeting Regime in Romania

Inflation targets in Romania are formulated in terms of the annual change in the consumer price index and are set as midpoints within a target band of +/-1 percentage points. There are two distinct phases in the type and the levels of the inflation targets set by the NBR:

- 2005–12: the phase of declining inflation targets, set over a 2-year horizon as year-end annual rates, to consolidate the disinflation process and achieve a sustainable annual inflation rate in the medium term;
- 2013–present: the phase of a flat multi-annual inflation target, an intermediate stage to ensure the transition towards the phase of long-term continuous inflation targeting—in line with the ECB's quantitative definition of price stability.

Inflation Targeting



Sources: Consensus Forecasts and Haver Analytics.

(Percent)	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Mid-point target	7.5	5.0	4.0	3.8	3.5	3.5	3.0	3.0	2.5	2.5

3. This paper aims to answer two key questions. First, how has the degree of exchange rate pass-through to consumer and producer prices in Romania changed since the adoption of inflation targeting (Section B)? And second, what are the main drivers of Romanian inflation dynamics,

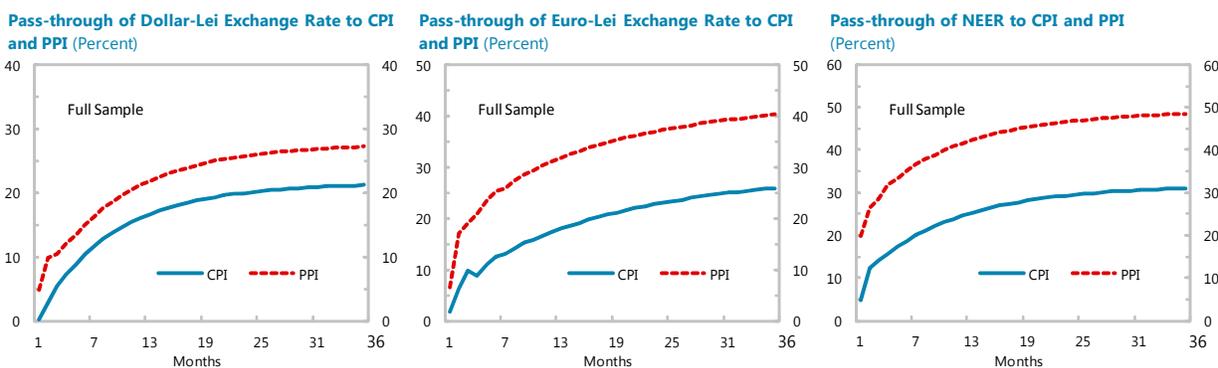
especially in more recent years with relatively low inflation (Section C)? To this end, we consider a structural VAR model from January 2000 to August 2014, and investigate the impulse responses and variance decomposition of inflation variables to shocks in the exchange rate. The findings can contribute in shaping the role of the exchange rate in the NBR inflation targeting framework going forward and underpin inflation forecasts.

B. Inflation Targeting: A Regime Shift for the Exchange Rate Pass-Through?

4. To investigate the degree of exchange rate pass-through to inflation, we adopt a structural VAR framework. This is consistent with the existing literature (e.g., McCarthy, 2000, Gueorguiev, 2003, Billmeier and Bonato, 2004, Cozmanca and Manea, 2010). We first conduct the analysis using the full sample, then divide the sample into the pre-inflation-targeting (August 2005) period, and the post-inflation-targeting period, to study possible changes in the pattern of pass-through.²

5. The empirical analysis uses monthly observations of prices, exchange rate, commodity price, output gap, and wages, between January 2000 and August 2014. We consider three exchange rate variables, the lei-dollar exchange rate, the lei-euro exchange rate, and NEER, and two price measures, the CPI and the PPI, capturing inflationary pressures for both consumers and producers. In addition, a commodity price variable is included to capture an exogenous supply shock, while wages are included as a proxy for domestic supply shocks. A demand shock is represented by the output gap, which measures the deviation of industrial production from its trend.

Figure 2. Exchange Rate Pass-Through to CPI and PPI Inflation



Note: Results are based on a structural VAR with the following variables: commodity prices, wages, output gap, exchange rate, PPI, CPI and short term interest rate (in this order). The degree of pass-through is defined as the ratio of the cumulative impulse response in prices to one Cholesky standard deviation shock on the exchange rate.

² Detailed data and methodology can be found in the annex.

6. The analysis shows a higher degree of pass-through for PPI than for CPI (Figure 2). In the first twelve months, around 20 to 30 percent of exchange rate is passed to produce prices, with the euro-lei exchange rate having a larger impact than the dollar-lei exchange rate in the full sample (Table 2). For consumer prices, around 15 percent of the impact is felt in the first year, with a slightly higher degree of euro-lei exchange rate transmitted into domestic consumer prices, especially in longer horizon.

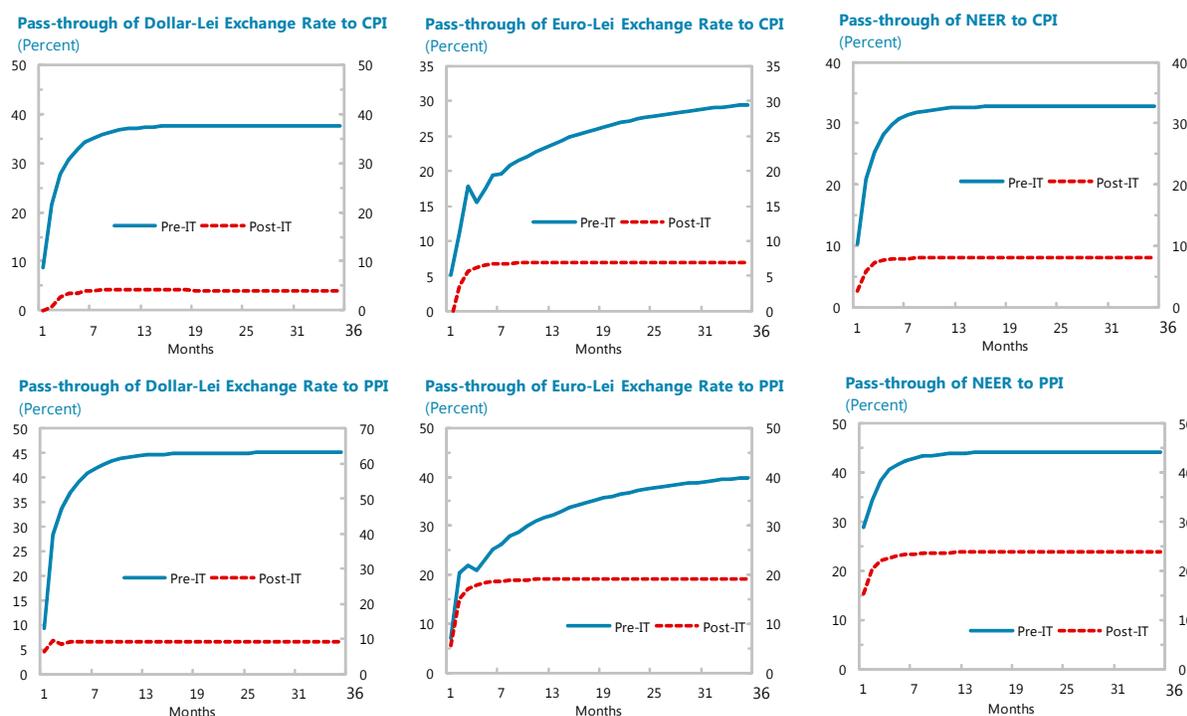
Table 2. Estimates of Exchange Rate Pass-Through

Percent Months	US Dollar-Lei Exchange Rate						Euro-Lei Exchange Rate					
	Full Sample (2000M1–2014M8)		Pre-IT (2000M1–2005M7)		Post IT (2005M8–2014M8)		Full Sample (2000M1–2014M8)		Pre-IT (2000M1–2005M7)		Post IT (2005M8–2014M8)	
	CPI	PPI	CPI	PPI	CPI	PPI	CPI	PPI	CPI	PPI	CPI	PPI
1	0.2	4.9	8.7	9.4	-0.1	4.6	1.9	6.6	5.2	7.1	-1.4	5.7
3	5.5	10.5	27.7	33.8	2.6	6.1	9.9	19.1	17.7	22.0	5.6	17.0
6	10.5	15.0	34.2	40.9	3.9	6.6	12.7	25.4	19.5	25.1	6.7	18.6
9	13.9	18.7	36.4	43.4	4.1	6.5	15.2	28.5	21.5	28.8	6.9	19.0
12	16.1	21.3	37.2	44.4	4.1	6.5	17.4	31.1	23.3	31.6	6.9	19.1
15	17.7	23.1	37.5	44.8	4.1	6.5	19.2	33.1	24.8	33.7	6.9	19.2
18	18.8	24.3	37.6	45.0	4.1	6.5	20.7	34.8	26.0	35.2	6.9	19.2
21	19.6	25.2	37.7	45.0	4.1	6.5	22.0	36.1	26.9	36.5	6.9	19.2
24	20.1	25.9	37.7	45.1	4.1	6.5	23.0	37.3	27.7	37.5	6.9	19.2

Note: Results are based on a structural VAR with the following variables: commodity prices, wages, output gap, exchange rate, PPI, CPI and short term interest rate (in this order). The degree of pass-through is defined as the ratio of the cumulative impulse response in prices to one Cholesky standard deviation shock on the exchange rate.

7. The pass-through has reduced sharply since the adoption of inflation targeting, as inflation expectations are better anchored (Figure 3). The reduction is most prevalent in the dollar-lei exchange rate, with the pass-through to consumer prices declining to 4 percent from around 38 percent, and that for producer prices falling to 7 percent from around 45 percent in two year horizon. The reduction can also be seen in euro-lei exchange rate, although to a less extent, with the pass-through to consumer prices declining to 7 percent from 28 percent, while that for producer prices falling to around 19 percent from 38 percent (Table 2).

8. Our findings are consistent with studies for other inflation targeting small open economies and the earlier analysis for Romania. Using a GARCH framework to study the link between the exchange rate regime, inflation targeting and exchange rate pass-through for emerging markets and advanced countries, Floerkemeier (2013) found that the introduction of inflation targeting tends to reduce pass-through from the exchange rate to domestic prices, and reduce both exchange rate and interest rate volatility. On Romania, Cozmanca and Manea (2010) showed that the degree of exchange rate pass-through into producer and consumer prices display a decline in magnitude in more recent times, and Gueorguiev (2003) found that the pass-through to producer prices tend to be larger than that to consumer prices.

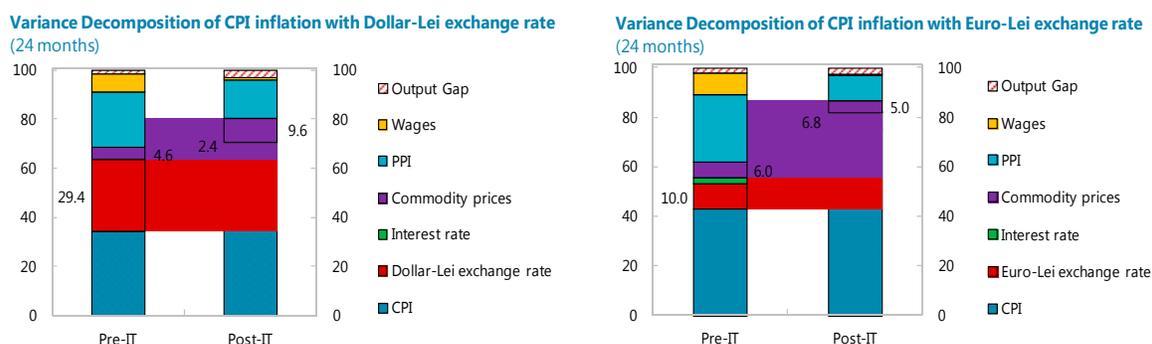
Figure 3. Exchange Rate Pass-Through pre- and post- Inflation Targeting

Note: Results are based on a structural VAR with the following variables: commodity prices, wages, output gap, exchange rate, PPI, CPI and short term interest rate (in this order). The degree of pass-through is defined as the ratio of the cumulative impulse response in prices to one Cholesky standard deviation shock on the exchange rate.

C. What Explains Inflation Dynamics in Romania?

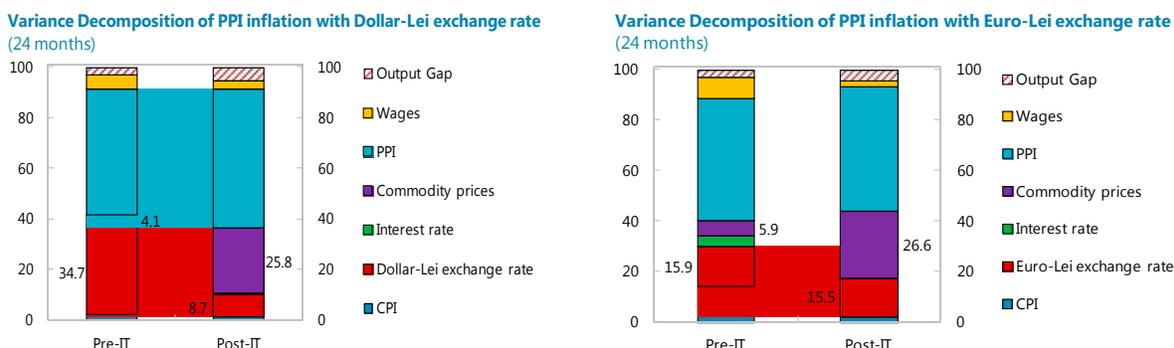
9. To examine the main drivers of inflation dynamics in Romania, we study the variance decomposition of the structural VAR framework used in the pass-through analysis. The variance decomposition captures the percentage of the variance of the error made in forecasting inflation due to a specific shock, for example, shock or innovation in the exchange rate equation at a specific time horizon (two years in our analysis). The variance decomposition therefore reflects the amount of information each variable contributes to innovations in the inflation variable.

10. The role of the exchange rate in explaining fluctuations in consumer prices has declined (Figure 4). Prior to August 2005, the exchange rate (in particular, the dollar-lei exchange rate) is one of the three key factors in driving CPI inflation, in addition to innovations in producer prices and CPI inflation's own innovation. Since August 2005, the share of innovation explained by exchange rate has fallen from around 30 percent to 2 percent for the dollar-lei exchange rate, and from around 10 to 7 percent for the euro-lei exchange rate (Tables 4 and 5). This decline in the role of exchange rate is consistent with our finding of a reduced pass-through to consumer prices after the adoption of inflation targeting. Similarly, wage developments also account for a smaller share of consumer price fluctuations. Instead, inflation appears to have become more persistent.

Figure 4. Variance Decomposition of CPI inflation

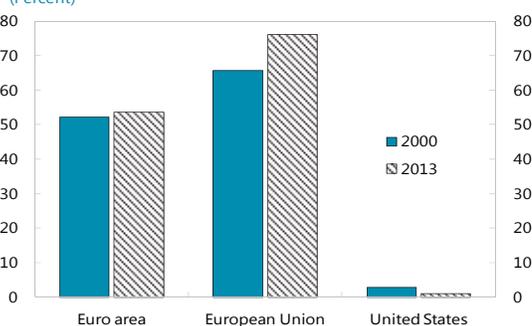
Note: Results are based on a structural VAR with the following variables: commodity prices, wages, output gap, exchange rate, PPI, CPI and short term interest rate (in this order).

11. The exchange rate is more important in driving producer price fluctuations compared with consumer prices (Figure 5). Up to 35 percent of the innovations in producer prices can be explained by the exchange rate in the pre-inflation targeting period, with other important factors being the commodity prices and PPI's own innovations. The importance of the exchange rate in explaining producer price inflation could reflect the relatively high import content of exports in Romania, where a high proportion of intermediate inputs are imported and therefore priced in foreign currencies.

Figure 5. Variance Decomposition of PPI Inflation

Note: Results are based on a structural VAR with the following variables: commodity prices, wages, output gap, exchange rate, PPI, CPI and short term interest rate (in this order).

12. Commodity prices have overtaken the exchange rate as a more important factor in explaining PPI inflation in recent years. Commodity prices now account for almost 30 percent of fluctuations in PPI inflation. The share of innovations explained by the dollar-lei exchange rate has declined from around 35 percent before August 2005, to around 9 percent thereafter. Interestingly, the importance of the lei-euro exchange rate has been stable, possibly reflecting that an increasing share of

Romania: Share of Imports (Percent)

Source: IMF Direction of Trade Statistics.

Romania's foreign trade is conducted in euro, and the importance of the European Union and some euro zone economies as Romania's trading partners.

D. Conclusions and Policy Implications

13. The empirical analysis suggests that the pass-through is typically higher for PPI than for CPI, but both reduced sharply since the adoption of inflation targeting. The introduction of inflation targeting has led to a decline in consumer and producer price inflation, likely better anchored inflation expectations, and reduced the role of the exchange rate in inflation. The degree of pass-through reduced to below 10 percent for CPI inflation, and to below 25 percent for PPI inflation, compared with a maximum of 45 percent prior to introducing inflation targeting. The reduction in pass-through is typically less prevalent in the lei-euro exchange rate, compared with the lei-dollar exchange rate.

14. Furthermore, the exchange rate plays a less important role in explaining innovations in CPI inflation in recent years. The exchange rate accounts for about 5 percent of fluctuations in CPI inflation since the adoption of inflation targeting, while this number was higher at around 10 to 30 percent prior. For PPI inflation, the share of innovations explained by dollar-lei exchange rate has declined to about 10 percent, while the importance of lei-euro exchange rate has been stable. World commodity prices have overtaken exchange rate as the most important factor in explaining PPI inflation in recent years, after its own innovations, accounting for almost 30 percent of the fluctuations in PPI inflation.

15. These empirical results have a number of policy implications. First, the impact of exchange rate pass-through appears to depend on the monetary policy regime and the level of inflation in the economy. The degree of pass-through tends to decline in an environment of low inflation and low volatility of inflation. Second, the credibility of a low inflation regime, and clear communications from the central bank could help anchor inflation expectations in the economy and reduce in part vulnerabilities of the economy to external shocks. Third, the reduction in the degree of pass-through suggests that Romania can afford to allow more flexibility in its exchange rate. As shown in the literature, a rise in exchange rate volatility would in turn lead to a reduction in pass-through (Corsetti, Dedola, and Leduc, 2008). Finally, the decline in exchange rate pass-through, if permanent, is a favorable development for sustainable inflation convergence and for meeting the convergence criteria for joining the euro zone in the medium- and long-term horizon (Beirne and Bijsterbosch, 2011).

Table 3. Variance Decomposition of D_logCPI with Lei Euro Exchange Rate

Pre-IT							
Months	DLOG_CPI	DLOG_E_EURO	DLOG_IR	DLOG_P_COMMD	DLOG_PPI	DLOG_WAGE	GAP_LOG_IP
1	64.1	3.4	0.0	9.2	20.4	1.0	1.9
3	52.3	10.9	0.4	6.9	22.6	5.2	1.6
12	45.0	9.8	2.2	6.2	26.8	8.1	1.9
24	43.0	10.0	2.7	6.0	27.5	8.5	2.3
Post-IT							
Months	DLOG_CPI	DLOG_E_EURO	DLOG_IR	DLOG_P_COMMD	DLOG_PPI	DLOG_WAGE	GAP_LOG_IP
1	83.6	0.4	0.0	3.6	9.3	0.0	3.1
3	75.4	6.6	0.0	5.0	10.0	0.3	2.7
12	75.1	6.8	0.0	5.0	10.0	0.3	2.8
24	75.0	6.8	0.0	5.0	10.0	0.3	2.8

Note: Results are based on a structural VAR with the following variables: commodity prices, wages, output gap, exchange rate, PPI, CPI and short term interest rate (in this order).

Table 4. Variance Decomposition of D_logCPI with Lei Dollar Exchange Rate

Pre-IT							
Months	DLOG_CPI	DLOG_E_DOLLAR	DLOG_IR	DLOG_P_COMMD	DLOG_PPI	DLOG_WAGE	GAP_LOG_IP
1	64.3	7.2	0.0	8.4	18.2	1.5	0.3
3	38.4	26.0	0.0	5.2	22.3	7.1	1.0
12	34.1	29.4	0.0	4.6	22.9	7.4	1.6
24	34.1	29.4	0.0	4.6	22.9	7.4	1.6
Post-IT							
Months	DLOG_CPI	DLOG_E_DOLLAR	DLOG_IR	DLOG_P_COMMD	DLOG_PPI	DLOG_WAGE	GAP_LOG_IP
1	82.3	0.0	0.0	3.5	13.6	0.3	0.3
3	68.5	2.0	0.4	9.5	15.4	0.9	3.4
12	67.4	2.4	0.7	9.6	15.5	0.9	3.4
24	67.4	2.4	0.7	9.6	15.5	0.9	3.4

Note: Results are based on a structural VAR with the following variables: commodity prices, wages, output gap, exchange rate, PPI, CPI and short term interest rate (in this order).

Table 5. Variance Decomposition of D_logCPI with NEER

Pre-IT							
Months	DLOG_CPI	DLOG_NEER	DLOG_IR	DLOG_P_COMMD	DLOG_PPI	DLOG_WAGE	GAP_LOG_IP
1	58.1	5.8	0.0	8.4	22.6	4.4	0.7
3	38.3	17.4	1.5	5.6	22.7	13.4	1.0
12	34.4	17.8	4.7	5.1	22.2	14.6	1.2
24	34.4	17.8	4.7	5.1	22.2	14.6	1.2
Post-IT							
Months	DLOG_CPI	DLOG_NEER	DLOG_IR	DLOG_P_COMMD	DLOG_PPI	DLOG_WAGE	GAP_LOG_IP
1	81.7	1.0	0.0	2.5	12.7	0.0	2.0
3	76.5	3.9	0.0	3.5	13.9	0.4	1.8
12	76.3	4.0	0.0	3.5	13.9	0.4	1.9
24	76.3	4.0	0.0	3.5	13.9	0.4	1.9

Note: Results are based on a structural VAR with the following variables: commodity prices, wages, output gap, exchange rate, PPI, CPI and short term interest rate (in this order).

Table 6. Variance Decomposition of D_logPPI with Lei Euro Exchange Rate

Pre-IT							
Months	DLOG_CPI	DLOG_E_EURO	DLOG_IR	DLOG_P_COMMD	DLOG_PPI	DLOG_WAGE	GAP_LOG_IP
1	0.0	6.9	0.0	1.6	91.3	0.2	0.0
3	8.1	20.3	3.5	7.7	55.4	4.9	0.1
12	13.5	16.3	3.6	6.1	50.2	7.7	2.6
24	14.2	15.9	4.1	5.9	48.7	8.2	3.1
Post-IT							
Months	DLOG_CPI	DLOG_E_EURO	DLOG_IR	DLOG_P_COMMD	DLOG_PPI	DLOG_WAGE	GAP_LOG_IP
1	0.0	4.7	0.0	18.4	73.5	3.3	0.1
3	1.8	15.8	0.0	25.9	51.6	2.3	2.5
12	1.8	15.5	0.1	26.6	49.5	2.3	4.2
24	1.8	15.5	0.1	26.6	49.5	2.3	4.2

Note: Results are based on a structural VAR with the following variables: commodity prices, wages, output gap, exchange rate, PPI, CPI and short term interest rate (in this order).

Table 7. Variance Decomposition of D_logPPI with Lei Dollar Exchange Rate

Pre-IT							
Months	DLOG_CPI	DLOG_E_DOLLAR	DLOG_IR	DLOG_P_COMMD	DLOG_PPI	DLOG_WAGE	GAP_LOG_IP
1	0.0	6.9	0.0	1.6	86.4	2.4	2.6
3	1.6	32.0	0.9	4.5	53.5	4.6	2.8
12	1.9	34.7	0.9	4.1	49.8	5.6	3.0
24	1.9	34.7	0.9	4.1	49.8	5.6	3.0
Post-IT							
Months	DLOG_CPI	DLOG_E_DOLLAR	DLOG_IR	DLOG_P_COMMD	DLOG_PPI	DLOG_WAGE	GAP_LOG_IP
1	0.0	10.3	0.0	16.4	69.5	3.3	0.5
3	1.0	9.1	0.4	23.4	57.7	3.4	5.0
12	1.1	8.7	0.8	25.7	54.9	3.3	5.5
24	1.1	8.7	0.8	25.8	54.9	3.3	5.5

Note: Results are based on a structural VAR with the following variables: commodity prices, wages, output gap, exchange rate, PPI, CPI and short term interest rate (in this order).

Table 8. Variance Decomposition of D_logPPI with NEER

Pre-IT							
Months	DLOG_CPI	DLOG_NEER	DLOG_IR	DLOG_P_COMMD	DLOG_PPI	DLOG_WAGE	GAP_LOG_IP
1	0.0	34.9	0.0	0.9	56.6	5.8	1.7
3	2.1	32.9	5.8	4.3	42.2	10.7	2.0
12	1.9	30.8	9.8	3.9	39.2	12.4	2.0
24	1.9	30.7	9.8	3.9	39.2	12.4	2.0
Post-IT							
Months	DLOG_CPI	DLOG_NEER	DLOG_IR	DLOG_P_COMMD	DLOG_PPI	DLOG_WAGE	GAP_LOG_IP
1	0.0	20.2	0.0	13.6	64.6	1.6	0.0
3	1.1	22.5	0.0	22.2	50.2	1.2	2.7
12	1.2	21.8	0.1	23.4	48.2	1.3	4.1
24	1.2	21.8	0.1	23.4	48.1	1.3	4.1

Note: Results are based on a structural VAR with the following variables: commodity prices, wages, output gap, exchange rate, PPI, CPI and short term interest rate (in this order).

Annex. Data and Methodology

Data

1. The main data sources are the National Institute of Statistics (NIS), the National Bank of Romania (NBR) and the IMF, through Haver Analytics. The CPI and PPI series are monthly, seasonally adjusted with base year at 2010 from the NIS. The euro-lei and dollar-lei exchange rates are monthly series from the NBR. The world commodity price index from the IMF is used to capture commodity prices in the model. The output gap measure is computed as the deviation of seasonally adjusted industrial production (IP) series from trend. The IP series is preferred over the GDP series since it is of higher frequency and requires no approximation or interpolation to construct the gap at monthly frequency. Labor cost is based on the gross average monthly wage and salary earning series from the NIS. Finally, the short-term interest rate variable is constructed using two series, the first one being the monetary policy rate series from the NBR from January 2003 to August 2014, and this series is backdated using the growth rate of the central bank reference rate series (the second series) from the NBR.
2. The Augmented Dickey-Fuller test suggests that a unit root is present in the all variables except for the output gap variable. Given that most of the variables are non-stationary in levels but stationary in first differences, the I(1) variables are then differenced and incorporated in the structural VAR analysis in first difference.

Unit Root Tests based on Augmented Dickey-Fuller Test

	t-Statistic	Prob.		t-Statistic	Prob.
LOG_CPI	-1.56	0.8	DLOG_CPI	-5.98	0
LOG_PPI	-1.59	0.8	DLOG_PPI	-6.69	0
LOG_E_DOLLAR	-1.7	0.75	DLOG_E_DOLLAR	-11.2	0
LOG_E_EURO	-1.7	0.75	DLOG_E_EURO	-10.97	0
LOG_IR*	-2.98	0.14	DLOG_IR	-12.89	0
LOG_P_COMMD	-2.54	0.31	DLOG_P_COMMD	-10.79	0
LOG_WAGE	-1.5	0.83	DLOG_WAGE	-19.67	0
GAP_LOG_IP	-3.56	0.04	DGAP_LOG_IP	-18.28	0

Note: The ADF test statistics for all level variables are based on regressions including an intercept and a linear trend; except for GAP_LOG_IP. The ADF tests for all variables in first differences are based on regressions including an intercept. *LOG_IR=1/12*ln(1+IR/100).

Methodology

3. To investigate the degree of exchange rate pass-through, we consider a structural VAR model, represented below.

$$A_0 X_t = A(L)X_{t-1} + B \varepsilon_t$$

where X_t is a 7×1 vector containing CPI, PPI, exchange rate, commodity prices, output gap, and total labor cost, A_0 describes the contemporaneous relations between the variables. $A(L) = \sum A_i L^i$, where L is the lag operator. ε_t is the vector of structural shocks, the impact of which is captured by the matrix B . The lag order of the structural VAR model is chosen according to the Akaike Information Criteria. The above equation can be expressed in reduced form as follows,

$$X_t = A_0^{-1} A(L)X_{t-1} + e_t$$

where $e_t = A_0^{-1} B \varepsilon_t$, the reduced form shocks, with the following variance-covariance matrix,

$$E(e_t e_t') = A_0^{-1} B E(\varepsilon_t \varepsilon_t') B' A_0^{-1}$$

4. For identification, we follow the Cholesky decomposition originally proposed by Sims (1980) and assume a recursive ordering for the variables. In particular, we order the most exogenous variable first, the commodity prices (also proxy for supply shock). Wages and output gap are ordered next, as macroeconomic variables are considered slow-moving in comparison to price variables. Exchange rate follows, assuming that a contemporaneous impact of demand shock (as proxied by output gap) on the exchange rate, while imposing a time lag on the response of output to exchange rate. PPI and CPI prices are included next, being contemporaneously influenced by all the above shocks. Finally, we include interest rate, permitting monetary policy to react simultaneously to all variables in the model. Our modeling strategy is in line with the earlier literature on exchange rate pass-through in Romania and other economies, see for example McCarthy (2000), Gueorguiev (2003), Billmeier & Bonato (2004) and Cozmanca & Manea (2010).

5. The pass-through coefficient is defined as the ratio of the respective cumulative impulse response to one standard deviation shock on the exchange rate.

$$PT_{t,t+i} = P_{t,t+i} / E_{t,t+1}$$

which accounts for the total impact of exchange rate changes on prices in a given time horizon, capturing potential second round impact.

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CUTTING LABOR TAXES IN A CONSTRAINED BUDGET ENVIRONMENT¹

Core Questions and Findings

- **What role did the tax burden on labor play for Romania's labor market developments?**

While Romania's overall unemployment rate is relatively low, labor force participation is depressed, the informal sector is large and youth unemployment remains elevated. Low participation rates appear to be issues of both supply and demand factors. Reforms to increase labor market flexibility and reduce the skills mismatch have helped, but a high tax burden was and is a strong disincentive to formal employment.

- **Is a high labor tax wedge still an issue after the recent 5 percentage point rate cut in October 2014?**

Yes, particularly for low-income earners, including youth. The reduction in the social security contribution (SSC) rate for employers lowered the standard rate to 15.8 percent from 20.8 percent. For a single person with no dependents earning half the average wage in Romania the wedge is now about 38.0 percent, still above the EU average of 34 percent in 2013.

- **How can Romania get the biggest potential employment benefit for a given revenue loss from a tax cut?**

A reduction in the employers' social security contribution rate targeted on low-income earners, e.g., those earning half the minimum wage or less, or youth would likely yield the largest gain in formal employment. Research has shown that labor demand and supply elasticities for low-skilled/low-wage earners and for second earners are relatively large. Based on other European countries' experiences, the ideal cut would be phased across wage levels, delivered through tax credits to preserve the pension-contribution benefit link, and as administratively simple as possible.

- **What are potential measures to offset the budget impact of a cut in labor taxes in an environment of rising budget pressures?**

Base broadening measures and increases in less distortive taxes, such as property and environmental ones, offer the best potential offsets. For example, an increase in the cap on pension contributions from 5 to 8 times the average wage coupled with a requirement that the self-employed make pension contributions based on total earned income and pay the employer portion of the health contribution and expanding the health contribution base to include all income could generate up to 0.3–0.4 percent of GDP, enough to mostly offset the lost revenue from a 10 percentage point cut in employers' SSC targeted on low-income earners.

¹ Prepared by John Ralyea, TengTeng Xu and Frank Eich.

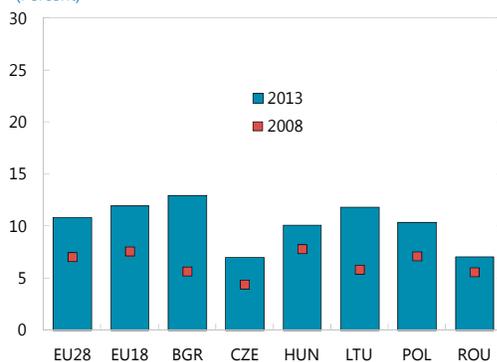
A. Introduction

1. A robust formal labor market would provide a bedrock for enduring growth and poverty reduction and accelerate Romania's convergence with the European Union. Over the last several years, Romania has undertaken reforms to improve the functioning of the formal labor market, including a new Labor Code. These measures were positive factors in improving the flexibility of Romania's labor market, contributing to a relatively low unemployment rate. However, labor force participation and employment rates remain depressed, youth unemployment is widespread, and the incidence of undeclared work is high. A contributing factor to these poor labor market outcomes is likely the high labor tax wedge, particularly for those at the low end of the income distribution, including youth, despite a 5 percentage point cut in the employer's social contribution rate in 2014. Higher labor participation would increase potential growth, reduce poverty, and help finance the social security system. This paper reviews recent measures to boost formal labor demand and supply and ways to reduce the tax wedge in a budget neutral manner, based on scenario analysis.

B. Labor Market Conditions and Issues

2. The overall unemployment rate in Romania is low compared with other EU countries, but youth joblessness remains elevated. The overall rate stood at 6.8 percent in 2014, lower than the EU-28 average at 10.2 percent though the rate is somewhat deceptive. While it reflects the positive benefits of recent labor market reforms to be discussed below, the unemployment rate is also heavily influenced by a tendency of long-term unemployed people to migrate towards the informal economy once the unemployment support ends.² Youth unemployment reached 23.3 percent in the third quarter of 2014, above the EU-28 average at 21.8 percent, despite the fact that many young Romanians emigrate to other EU countries, and only a relatively low proportion who stay enter the labor force.

Overall Unemployment Rate
(Percent)



Sources: Haver Analytics.

Youth Unemployment Rate
(Percent)



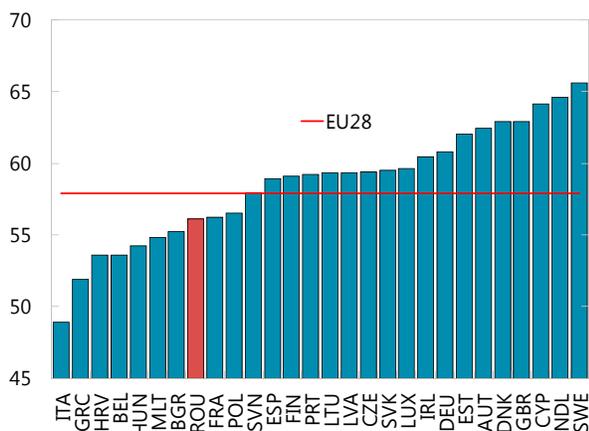
Sources: Haver Analytics.

² Unemployment benefits cease nine months after formal job separation.

3. A more telling indicator of Romania’s labor market condition is perhaps the participation rate, which is low, especially for women and youth. The ratio of employed and unemployed persons to the working age population in Romania is low relative to the average EU ratio. The total participation rate stood at 56.1 percent in 2014Q3, which is also lower than the level seen in early 2000s. The low participation rate is in part a legacy of the early years of transition when the manufacturing output plummeted and discouraged workers left the labor force. Moreover, people have faced difficulties entering into stable employment, for a variety of reasons, including demand issues such as a shortage of employment opportunities, and supply considerations, including a labor force that lacks work experience and skills required by employers. While the degree of *qualification* mismatch in Romania is lower than EU average, it represents about 20 percent of the workforce. According to data from the European Labor Force Survey, 7–9 percent of the employees in Romania are over-qualified (EU average at 15 percent), and about 10 percent are under-qualified (EU average at 21 percent) over the past decade (2001–11). The degree of *skill* mismatch in Romania, however, is one of the highest in EU countries. Many jobseekers have trouble finding employment in their field. The low appetite for work is particularly prevalent for women and youth, whose participation rates declined to 47.6 percent and 32.3 percent in 2014Q3, respectively, from around 56 percent and 42 percent in early 2000s.

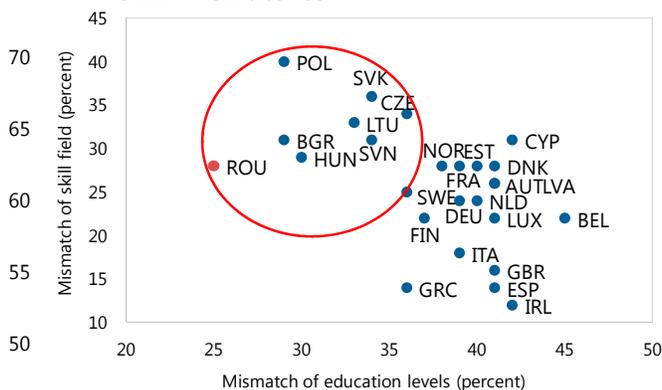
Participation Rate, 2014Q3

(Percent)



Sources: Haver Analytics.

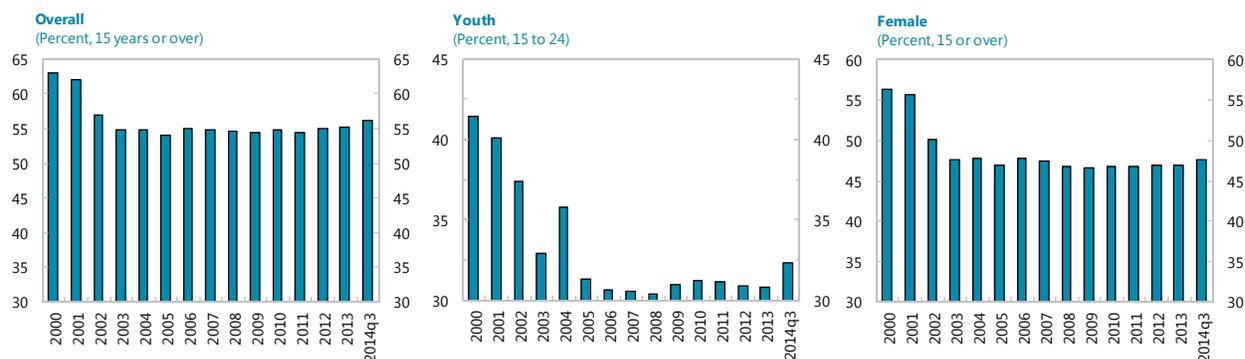
Skill Mismatches



Source: SEO Economic Research and Randstad (2012).

Note: Each axis shows the share of workers facing that type of skill mismatches. Mismatch of education levels happens when the education level of a worker (e.g., high school) does not match the job requirements (e.g., university). Mismatch of skills field refers to cases where the worker’s field of education (e.g., engineering) does not match the job requirements (e.g., medicine).

Romania: Participation Rate, 2000-14



Sources: Haver Analytics; and Eurostat.

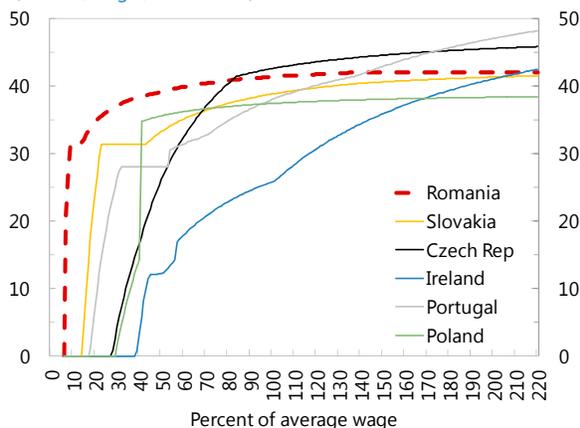
4. As a result, much economic activity and employment takes place in the informal sector. While the exact size of the informal sector is debatable, analysts estimate that the informal sector produces up to one third of total output in the economy (Schneider, Buehn, and Montenegro, 2010) and includes 1.45 million workers (Romanian Fiscal Council, 2013). This represents a substantial loss of tax revenue for the government and creates unfair competition between those in the formal sector and those outside. Tax evasion due to undeclared work and informal sector activities is estimated at 1 and 3 percent of GDP for personal income tax and social security contributions, respectively (Romanian Fiscal Council, 2013).

5. A key factor driving the low participation rates and the size of the informal sector is a high labor tax wedge, especially for those with low incomes. In a regional context, the tax wedge³ in Romania is relatively high for individuals on low and low-to-medium incomes, though less so for those with higher incomes. Low-to-medium income workers also include many young workers and those that enter the labor market for the first time. The picture is similar for those with dependents. More broadly, prior to a recent 5 percentage point cut in the employer pension contribution rate on October 1, 2014, Romania had one of the highest tax wedges in the EU for employees earning 50 percent of the average wage. The high wedge depresses employer demand for labor by increasing labor costs and the supply of labor by lowering the net wage received by workers.

³ The labor tax wedge measures the percentage of the gross salary paid by an employer that is collected by the government in the form of income taxes and social security contributions (see also Box 1).

Tax Wedge Comparison

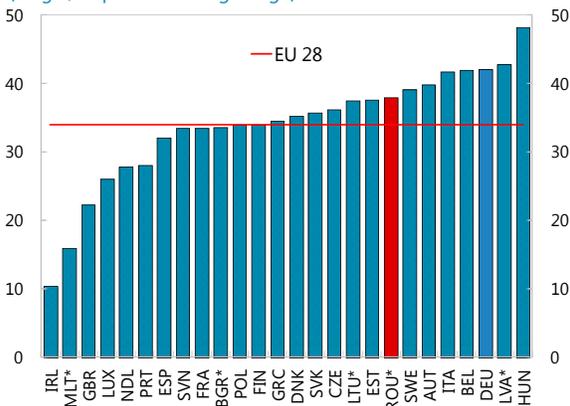
(Percent, single, no children)



Sources: OECD, World Bank; and IMF staff calculations.

Tax Wedge, 2013 1/

(Single, 50 percent average wage)



1/ Data for 2013, unless denoted by star. Recent data for Cyprus and Croatia are not available. Romania cut employer pension contribution by 5 percentage points effective for October 1, 2014. Source: European Commission, DG Economic and Financial Affairs.

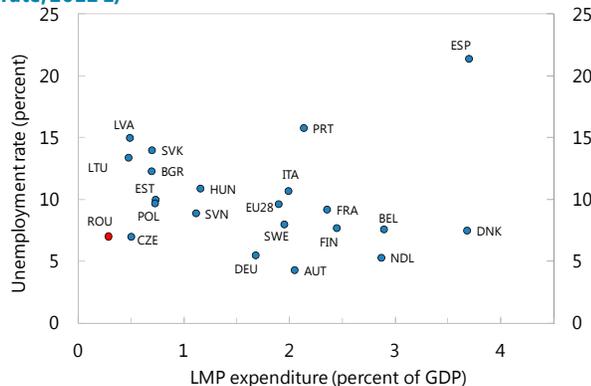
6. These indicators imply that low participation rates appear to be issues of both supply and demand factors. The next section will discuss policy options to address both sides.

C. Active Labor Market Policies

Supply side

7. Vocational training schemes are being put in place to address supply side issues and to reduce the skill mismatch between supply and demand of labor. Pilot projects under the Youth Employment Initiative are expected to provide better information on career development and training to targeted group of youth nationwide. The secondary legislation for the Apprenticeship Law that introduces a dual apprenticeship model and a law facilitating professional training stages for higher education graduates were adopted in December 2013. The new worked-based professional school training scheme is expected to attract a growing number of students and partner companies, and to facilitate a better transition from school to workplace. Overall expenditure on labor market policies in Romania, however, remains one of the lowest in the European Union.

Labor Market Policy (LMP) Expenditure and Unemployment rate, 2012 1/



1/ 2011 data for Spain, Poland and EU28. Sources: Eurostat.

8. Unemployment and inactivity traps in Romania are not particularly binding compared with comparator countries. For example, in the first month of unemployment an unemployed

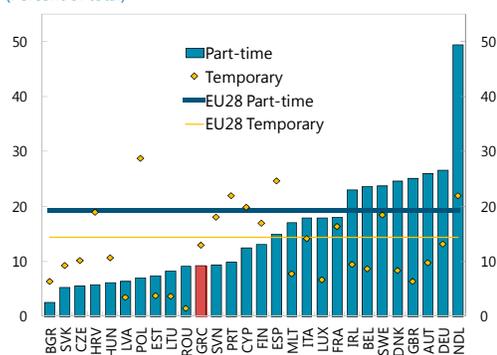
person, who earned 100 percent of the relevant average wage and has no children, can expect to receive about 37 percent of their employment wage in benefits in Romania, compared to 77 and 50 percent for a similar individual in Bulgaria and Poland, respectively. In addition, social benefits in Romania do not appear to be overly generous and eligibility criteria have been more tightly enforced since 2010. In particular, the authorities have tightened the criteria for receiving disability benefits since 2010, which contributed to a 24 percent drop in the number of beneficiaries by end-2014.

Demand side

9. The 2011 labor market reforms were aimed at addressing issues on the demand side and to improve the flexibility of the labor market.

The authorities introduced two major reforms in labor market legislation in 2011. The new Labor Code extended the scope and duration of fixed-term/temporary employment contracts; introduced performance evaluation in the criteria considered in the collective layoff process and extended both probationary periods and the period to compensate overtime by paid hours off. The Social Dialogue Law abolished collective wage negotiations at the national level, tightened criteria for the establishment and representativeness of labor unions at firm level and removed the automatic extension of collective sectoral contracts. The new Labor Code appears to have resulted in growing numbers of fixed-term contracts and introduced more flexibility in employment relations. The proportion of fixed-term contracts in total active contracts increased from 3.9 percent at the beginning of 2011 to 8.7 percent at May 2014.

Part-Time and Temporary Employment, 2014Q3
(Percent of total)



Sources: Eurostat.

D. Considerations for Reducing Labor Taxes

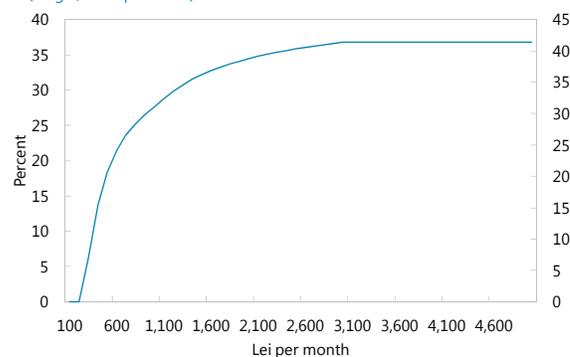
10. The recent cut in the employer pension contribution rate resulted in a net annual budget cost of about 0.8 percent of GDP.⁴ Yet, low income earners still face a high tax wedge. The tax wedge rises steeply, reaching three-quarters of its maximum already for incomes around the minimum wage of RON 975 per month. To maximize the potential increase in formal employment, cuts in labor taxes should be targeted on lower-wage employees. This would allow a larger rate cut, for a given amount of budget space, and possibly stimulate a greater boost in formal employment

⁴ The net budget cost reflects a gross revenue loss of 0.24 percent for each percentage point cut in the employer's social contribution rate. The gross amount is offset by reduced social security contribution made by the government as an employer of about 25 percent of those formally employed. This is broadly consistent with recent cross-country econometric analysis that suggests that all else equal, cutting the tax wedge by 1 percentage point is on average associated with a revenue loss of 0.3 percent of GDP (IMF, 2014).

relative to the across the board cut enacted in 2014. However, the authorities announced in February 2015 proposed changes to the Fiscal Code that foresee further across-the-board cuts in 2017–19 to reduce the labor tax wedge.⁵ More broadly, some key considerations for future cuts include targeting, the nature of the cut (pension, health, or PIT), a constrained budget environment, and implications for pension funding.

Tax Wedge

(Single, no dependents)



Sources: Romanian Authorities.

A targeted or an untargeted labor tax cut

11. Research supports targeting reductions in the tax wedge on low-income/low-skilled workers. Labor demand and supply elasticities for low-skilled/low-wage earners and for second-wage earners are relatively large (Hammermesh, 1998). Betcherman and Pagés (2007) observe that targeting cuts in labor taxes on low-wage earners and the youth yields more employment per dollar of tax relief provided as the elasticities of labor supply are relatively high for these groups and the pass-through effect (whereby lower contributions are captured through higher wages) is more limited for low-skilled workers.

12. Several European countries have focused tax wedge cuts on young, low-paid, elderly, and female workers over the period 2000–13. Important broad lessons can be drawn from these countries experiences on considerations for designing a targeted cut in employer social security contributions that limits the potential for introducing new market distortions (IMF, 2014). In particular, targeting based on broad characteristics (the low-paid, the young) rather than on specific employment status (contract type, employer size) minimizes the scope for substitution effects (Italy). Phasing the reductions in employer SSC according to wage levels (rather than capping them to a given threshold) avoids creating a low-paid trap (France 1990s, Netherlands 1996). Moreover, targeted cuts are more effective the better they are known and the easier they are to comply with, which will require balancing administrative costs for certifying eligibility against the possibility for tax evasion.

13. However, estimates of benefits from labor market reform are subject to large margins of uncertainty and should err on the conservative side. As noted in the IMF's October 2014 Fiscal Monitor, the empirical literature demonstrates that the size and timing of their impact on output or

⁵ Proposed changes to the Fiscal Code that would reduce the tax wedge are: reduce the employer pension contribution rate in 2017 from 15.8 to 13.5 percent; reduce the employee pension contribution rate in 2017 from 10.5 to 7.5 percent; and reduce the flat PIT rate from 16 to 14 percent in 2019. The proposed changes also include base broadening measures for 2016 such as a requirement that self-employed individuals make their pension contribution based on total earned income and the base for employee health contributions include all income, with a contribution cap of five times the average wage.

employment differ significantly across countries because of historical and institutional factors, as well as societal preferences that are hard to predict. In addition, in countries with large gray economies, such as Romania, significant cuts in payroll taxes would likely induce a shift from the informal to the formal sector rather than stimulate a large bump in overall employment.

Cuts in employer or employee taxes

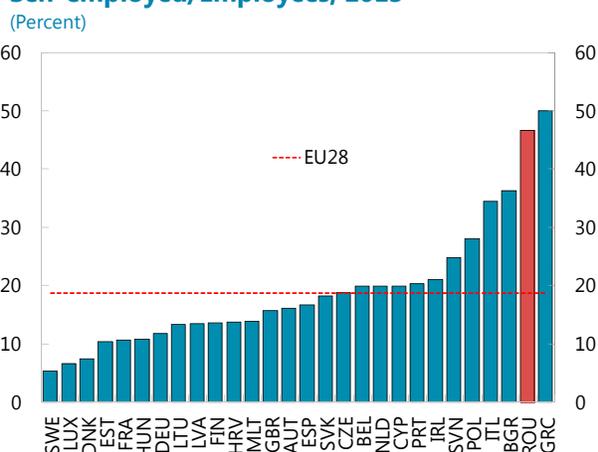
14. Cuts in the employer social security contribution, assuming wages are fixed, can either increase employment or employer profits in the short term. An econometric analysis of OECD countries suggests that, on average, cuts in employer's SSC have a longer-lasting positive impact on employment than cuts in employee's SSC (IMF, 2014). However, in the long term, as employment contracts are renegotiated, the cut tends to be captured in higher wages. However, reductions in employer SSCs are particularly effective if targeted to low-wage earners and where the link with benefits is weak (e.g., for health expenditures) (IMF, 2012).

Budget environment and social security contribution peculiarities

15. Romania has significantly reduced fiscal imbalances since the crisis but budget pressures remain. Romania needs to tighten its budget further to meet its medium-term budgetary objective (MTO) under the Fiscal Compact. In addition, Romania's ageing population (EU 2012 Ageing Report) portends higher health and pension outlays in the future (estimated additional costs of 1¾ percent of GDP by 2030). To maintain the hard won fiscal adjustment requires that the reduction in labor taxes be offset. Ideally, the offset would be through revenue-neutral tax shifts,⁶ though permanent expenditure cuts could also help fill the gap.

16. Social security contributions are marked by two significant peculiarities, which favor the self-employed. First, the self-employed can decide how much income they declare for the purpose of calculating pension contributions with a floor set at the minimum wage, which is about 45 percent of the average wage. Second, the self-employed only pay the employee part of the health

Self-employed/Employees, 2013

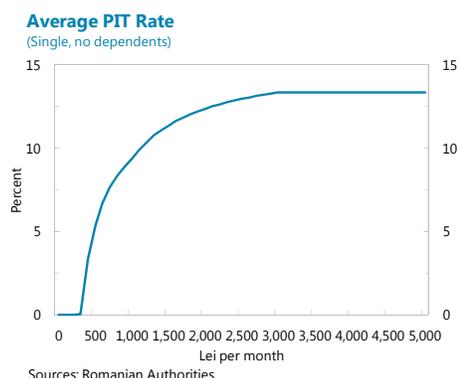


⁶ Denmark (1998) and Germany (2007) provide examples of implementing a revenue neutral cut through increases in other taxes—in their case the VAT. Estonia (2013) offset a cut in labor taxes through increases in excises and environmental fees. Croatia and Georgia financed reductions in the contribution rates partly by widening the contribution base.

contribution. With most self-employed opting for the minimum wage as the basis for calculating pension contributions, both peculiarities reduce the contribution base. Moreover, the employed effectively subsidize the self-employed's use of the health care system while the different treatment distorts labor market behavior in favor of the self-employed as it is financially more attractive for businesses to outsource activities to the self-employed than employ their own staff. As a result, Romania has the second highest ratio of self-employed to employees in the EU.

Box 1. Deriving the Labor Tax Wedge in Romania

Romania has a flat-rate personal income tax (PIT), with a tax rate of 16 percent. There are tax allowances based on income and number of dependents (spouse and children), introducing some progressivity into the system. In 2012, the personal allowance stood at RON 250 per month for those earning less than RON 1,000; declining linearly to zero for those earning RON 3,000 per month. There is no allowance for those above that income. This means that the tax allowance is withdrawn from just under half of the average wage (RON 2,200 per month). For dependents, there is an allowance of RON 125 each, with the total allowance not to exceed RON 650 per month. The effective PIT rate is less than 16 percent as the PIT is imposed on income excluding employee social security contributions and allowances. However, the average PIT rate is already two thirds of the maximum for someone earning around half the average income, illustrating the narrow income range over which the tax allowance is granted.



Romania requires substantial social security contributions. These include contributions for health, pensions, unemployment and invalidity. The total annual social security contribution rate has fallen from 60 percent in 2001 to 44.5 percent in 2013, driven by a 12.5 percentage-point drop in the employer's contribution rate. The employer's pension contribution rate was reduced another 5 percentage points in 2014. The standard employer rate is now 15.8 percent. Currently, pension contributions are capped at five times the average worker's salary.

The tax wedge is defined as the sum of personal income tax and employee plus employer social security contributions together with any payroll tax less cash transfers, expressed as a percentage of the labor costs facing businesses:

Tax wedge

$$= \frac{(PIT + (Employee\ SSC) * (1 - PIT)) * Taxable\ salary + base\ salary * (Total\ SSC) - Transfers}{Base\ salary * (1 + Employer\ SSC)}$$

Note: SSC = social security contributions; PIT = personal income tax.

Income-dependent transfers are granted to those on lowest incomes but are minimal. Following the OECD approach, to calculate the tax wedge the employee social security contributions going to funded private pensions are excluded as these are treated generally as compulsory savings rather than taxation.

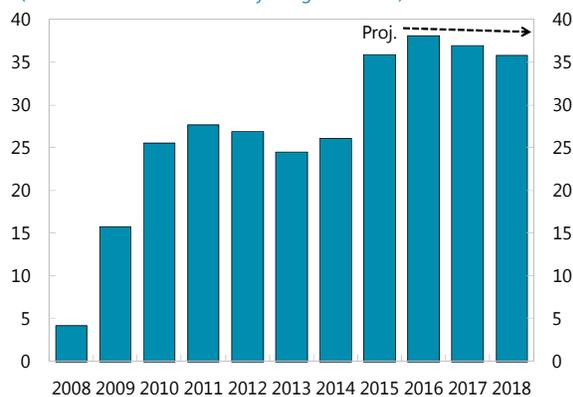
Pension system

17. Lowering pension contribution rates without a similar reduction in benefits can bring several difficulties.

Pensions are generally linked to wages, meaning higher income employees receive higher pensions. Subsidizing pension systems from general revenues, which is more broad based than payroll taxes, can be highly regressive. In addition, as the degree of subsidization increases, it could become harder and harder to deny benefits to those who contributed to general revenue but did not make explicit pension contributions. Moreover, pension contributions come with a liability for a future benefit. A cut in the rate without an offsetting cut in benefits will create a net actuarial liability for the system.

Subsidies for Social Security

(Percent of total social security budget revenue)



Sources: Ameco, Social Security Budget; and IMF staff calculations.

18. Romania's unfunded pension system has incurred annual deficits since 2008, which are projected to continue for decades.⁷

From 2010–14, subsidies from the central government covered about one quarter (2 percent of GDP) of the total annual revenues of the social security budget. After the 5 percentage point cut in the employer pension contribution rate in 2014, subsidies are budgeted to jump to 36 percent (2.8 percent of GDP) of social security budget revenues in 2015 and remain around that level through 2018. These deficits undermine the link between contributions and benefits partially negating a benefit of joining the formal labor market.

E. Options for Reducing Labor Taxes

19. There are a number of options for reducing the labor tax wedge. The options can be broadly grouped into those that stimulate labor demand (i.e., cuts in employer social security contribution rates with the two biggest being pensions and health) and those that stimulate labor supply (i.e., reductions in the effective personal income tax rate and cuts in employee social security contributions).

⁷ The estimated net present value of Romania's pay-as-you go pension (Pillar 1) deficits over the period 2010–60 ranged between 29 and 37 percent of GDP depending on discount rate assumptions, based on IMF calculations before the October 2014 cut in the employer pension contribution rate.

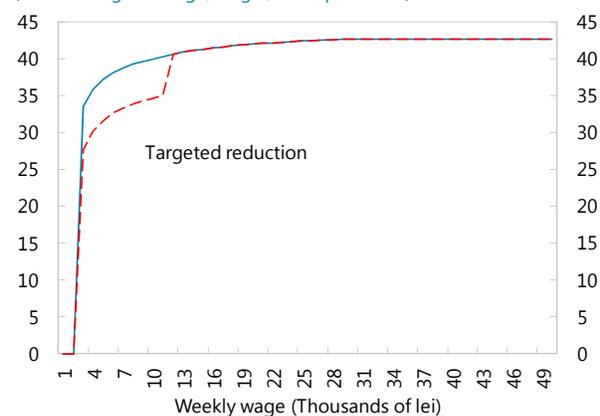
20. Scenario analysis reveals that Romania could largely offset a significant targeted cut in the employer pension contribution through base broadening measures. Using income

distribution and tax data supplied by the Romanian government for 2012 (see Annex for data details), a 10 percentage-point cut in the employer contribution rate for workers earning less than 50 percent of the average wage would reduce budget revenues about 0.4 percent of GDP.⁸ Importantly, the size of the cut may be large enough to induce changes in the behavior of labor market participants. Estimations indicate that this could be largely offset by the following combination of base broadening measures:

- (i) raise the cap on pension contributions from 5 to 8 times the minimum wage;⁹
- (ii) require the self-employed to make pension contributions based on their declared income, (alternatively increase the floor on pension contributions from the minimum wage level); and
- (iii) have the self-employed pay the employer portion of the health contribution, in addition to the employee portion. Alternatively, graduated reductions on employers' social security contributions to the low paid could be delivered through a tax credit, as France did in 2008 (IMF, 2014). This would protect the social security budget (Lledó and Honjo, 2014), preserve the contribution-benefit link and may limit the incentive for employers to split employment contracts to take advantage of targeted benefit.

Tax Wedge with Targeted Cut

(Percent of gross wage, single, no dependents)



Sources: Romanian Authorities.

21. Targeted tax wedge reductions tend to have significantly stronger employment effects than across-the-board cuts. The World Bank estimates that the elasticity of the employment rate to the tax wedge is negative 0.23 in Eastern Europe for all workers.¹⁰ A 10 percentage-point cut in the employer social security contribution targeted on low income workers would reduce the tax wedge for an employee earning half the average wage by 14 percent, implying an increase in the overall employment rate of 3.5 percentage points over the medium term. This is materially greater

⁸ Ideally, the reduction would gradually be reduced at higher income levels, though this may be administratively difficult to implement.

⁹ In the scenario calculations the increase in the cap is only applied to the base for the employee social security contribution for the following reason. Employers calculate their social security contribution by paying the lower of the product of the number of employees, the cap, the average wage, and the employer rate or the product of the payroll and the employer rate. Since most employers already pay their contributions based on the entire payroll amount, an increase in the cap is unlikely to yield much additional revenue from employer social security contributions.

¹⁰ This is similar to the elasticity of 0.3–0.6 of the labor force participation rate and the employment-to-population ratio for countries in Europe and Central Asia estimate to an increase in the tax wedge that Rutkowski (2007) estimated.

than the estimated 1.3 percentage point increase in the employment rate for the 5 percentage point across-the-board reduction in the employer SSC rate enacted in 2014.

Estimated increase in the employment rate over the medium term for a untargeted and targeted reduction in employer's social security contribution rate

	Labor tax wedge 1/			Elasticity of employment rate to the tax wedge 3/	Percentage-point change in employment rate
	Initial	After cut	Percent change		
5 percentage-point cut across whole income distribution	43.8	41.5	-5.3	-0.243	1.3
10 percentage-point cut targeted on those earning half the average wage 2/	38.0	32.6	-14.2	-0.243	3.5

1/ Average for relevant income distribution.

2/ Initial labor tax wedge following 5 percentage-point reduction that became effective on October 1, 2014. Average wage is roughly RON 2,200/month.

3/ Calculated by the World Bank for East European countries using a panel of 40 OECD and EU countries (including Romania) over the period 1995-2012.

Sources: Romanian authorities; World Bank; IMF staff calculations.

22. Alternative measures to reduce the labor tax wedge would be more costly and require offsets beyond social security base broadening. Given the high labor tax wedge, these measures should also be given serious consideration. For example, increasing the personal income tax allowance to RON 1,000 per month¹¹ for salary and self employed income earners who earn less than half the gross average wage would cost about 0.7 percent of GDP. Based on World Bank estimates, this would likely reduce the labor tax wedge by 4–6 percentage points. Another potential measure would be a reduction in the employee SSC rate. An across the board reduction of 5 percentage points, the same as the recent reduction in the employer pension rate, would reduce budget revenue by 0.8 percent of GDP. Given that social security base broadening measures would garner about 0.4 percent of GDP, other tax or expenditure offsets would have to be found to maintain budget neutrality.

23. There are several possibilities for offsetting the impact of a cut in the labor tax wedge on the budget. First, scope exists for increasing VAT as well as property and environmental tax revenue. Romania's tax collection relative to EU countries of property and environmental taxes is particularly low, while its VAT gap is the highest. A second avenue would be to quantify tax expenditures—a good fiscal practice in and of itself—to identify areas to improve tax efficiency and potential offsets too. And a third option would be to enact permanent cuts in key spending items, such as personnel expenditures.

F. Conclusion

24. Romania's relatively high labor tax wedge likely constrains formal labor market participation. While recent reforms to foster greater labor mobility and improve worker skills help,

¹¹ This is equivalent to the allowance on pension income, which is greater than the average pension income of RON 750 per month in 2012.

Romania's relatively high tax wedge, particularly for low-income earners—which includes also many young newcomers to the labor market—undermines the demand and supply of labor in the formal economy. This leads to low participation rates and a sizable informal economy.

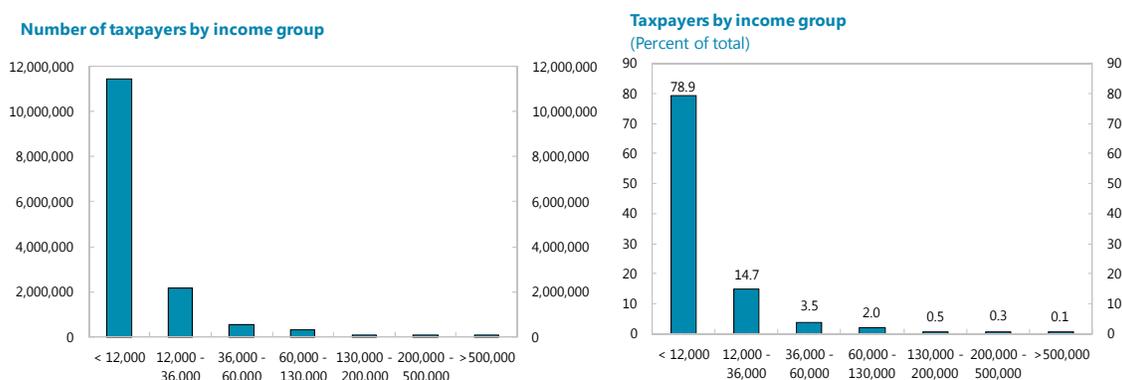
25. Further reductions in labor taxes should be targeted on low-wage workers or youth to maximize benefits. Labor demand and supply elasticities for low-income/low-skill workers are relatively high. Targeted payroll tax cuts on this group of workers would yield a larger increase in formal employment than an across-the-board cut that generates the same loss of budget revenue. This paper shows that a significant cut in the employer social security contribution rate of 10 percentage points, focused on low-income workers is estimated to generate a 4 percent increase in the formal employment rate over the medium term, which is triple the estimated increase in the employment rate from the recent across-the-board reduction in the employers' social security contributions.

26. Uncertainty surrounding the employment benefits from a cut in labor taxes and existing budget pressures means that the cuts in the tax wedge should be offset. While a decrease in payroll taxes can be expected to increase formal employment and eventually tax receipts, the period over which the increase would take place is highly uncertain. In addition, fiscal space, given EU commitments, is not available to absorb a higher deficit, even if it is temporary. These facts imply that the lost revenue from a reduction in payroll taxes should be offset, ideally through tax base broadening measures. However, increases in property and environmental tax rates and stronger efforts to collect VAT should also be considered.

Annex. Personal Income and Social Security Contributions Data

1. Around 14½ million Romanians paid personal income tax (PIT) in 2012. Nearly 12 million (79 percent of the total) paid personal income tax (PIT) on a declared income of less than RON 12,000 per year (RON 1,000 per month). This means that the majority of Romanians paid PIT on a declared income close to the minimum income, which stood at around RON 700 per month in 2012. A further 15 percent paid PIT on a declared income between RON 12,000 and 36,000 annually. This group also includes those on the average income of about RON 24,000 per year. Only around 6½ percent of those paying PIT had declared incomes of more than RON 36,000 per year.

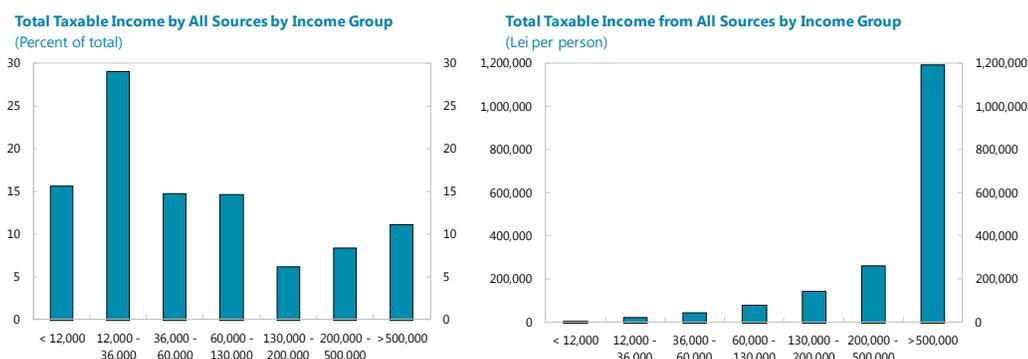
Personal Income Taxpayers, 2012



Source: Romanian Authorities and IMF staff calculations.

2. While those with declared annual incomes of less than RON 12,000 annually made up nearly 80 percent of all income tax payers, their share in total taxable income was only 15 percent—the same as for those on declared incomes of between RON 36,000–60,000 and RON 60,000–130,000. At the top end, the 0.1 percent of taxpayers with declared incomes above RON 500,000 per year contributed nearly 12 percent of total taxable income.

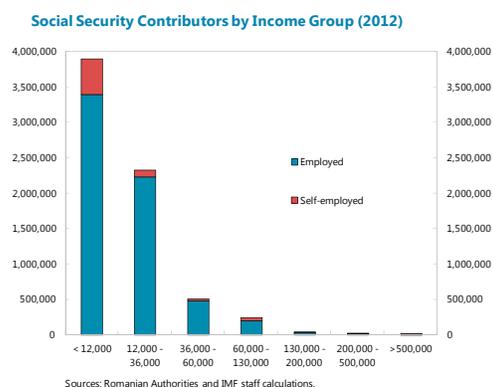
Total and Individual Taxable Income from All Sources by Income Group, 2012



Source: Romanian Authorities and IMF staff calculations.

3. The importance of different sources of income varies substantially across income groups. The share of labor income in total taxable income exceeds 80 percent for those on incomes up to RON 60,000 per year, dropping sharply to reach less than 10 percent for those in the top income bracket. This reflects the growing importance of “other” income such as capital or rental incomes. Income from self-employment plays a minor role across all income groups.

4. Out of the 7 million social security contributors, the overwhelming majority (90 percent) were employed rather than self-employed. This relationship only reverses for those few (less than 10,000 people) with declared incomes above RON 500,000 per year, where there were nearly four times as many self-employed than employed.



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MORE FISCAL DECENTRALIZATION—THE PREREQUISITES¹

Core Questions and Findings

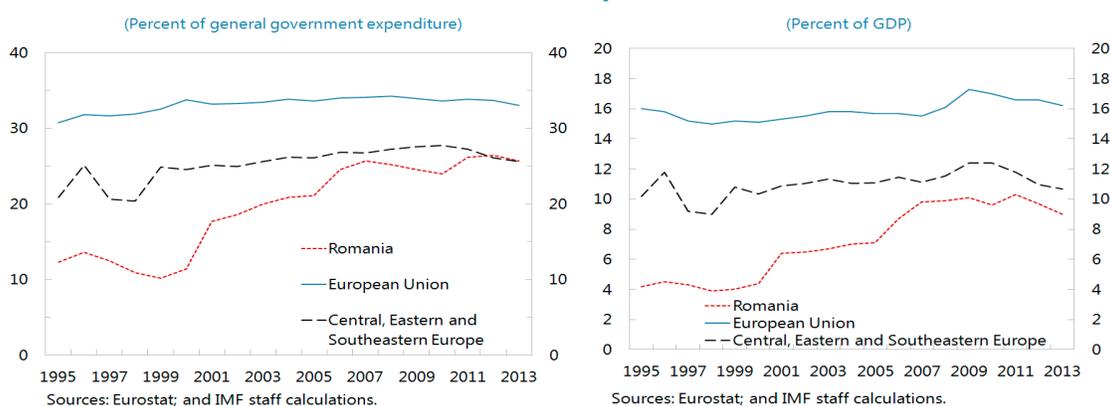
- **What is the current status of fiscal decentralization in Romania and how does it compare to peers?** Decentralization in Romania started in 1991. The share of subnational government expenditure in general government expenditure doubled from about 12 percent in the mid-1990s to 25 percent in 2013 but is still below the European Union average.
- **What is the authorities' plan to accelerate decentralization?** A bold initiative was launched in 2013 to shift important responsibilities and assets of some ministries to local authorities. However, the Constitutional Court rejected the initiative. The government is now identifying smaller-scale pilot areas for decentralization, and intends to gradually expand the initiative.
- **What are the main weaknesses in the current system and potential risks from the plan going forward?** The current system is characterized by a low share of revenue at the full discretion of local authorities, a large vertical imbalance, weak effectiveness of fiscal rules at the local level, a weak commitment control system, and a mismatch between central and local reserve funds. The plan going forward could worsen the vertical imbalance and jeopardize public assets, unless certain conditions are put in place.
- **How can Romania reap further benefits from decentralization and mitigate the associated risks?** A stochastic frontier analysis indicates that there is room for Romania to improve the efficiency of its public expenditure. Such an improvement could allow larger and better growth-enhancing public investments without additional budgetary pressures. A cross-country analysis suggests that decentralization can improve efficiency but strong institutions and capacity are required. Local governments' own taxes, such as property taxes, should be enhanced. Public financial management needs to be strengthened, including rolling out the new commitment control system to local public institutions and setting aside a budget buffer of 10 percent at the local level in line with the requirement for the central government. The effectiveness of fiscal rules at the local level should also be enhanced. Finally, strong accountability of local authorities to the local population is necessary. Absent such prerequisites, further decentralization can worsen public expenditure efficiency and macroeconomic performance.

¹ Prepared by Ivohasina F. Razafimahefa.

A. Introduction

1. A shift to greater decentralization has occurred over the past two decades. The decentralization process started in 1991, after the end of the communist regime, with the adoption of the new constitution which established three layers of administrative structures. Various responsibilities were gradually devoluted from the central to local governments, including public utility services, local public transportation services, community services, and social protection in the 1990s; and health, education, agriculture, and local police thereafter. In the early 1990s, Romania was amongst the most centralized countries, as reflected by the share of local governments in general government's revenue and expenditure. Tremendous efforts were deployed to double this share, bringing Romania in line with the average share of the Central, Eastern and South Eastern Europe (CESEE) countries. However, compared to many other European Union (EU) countries, Romania remains more centralized.

Subnational Government Expenditure, 1995–2013



2. A further decentralization initiative was put forward in 2013 but was rejected in the proposed form by the Constitutional Court. The draft law aimed at accelerating the implementation of the subsidiarity principle, i.e., bringing public services and decisions closer to the population and using resources more judiciously. It envisaged achieving this objective by shifting specific responsibilities and resources to the local authorities. The Constitutional Court argued that the draft law was not constitutional for a number of reasons: it lacked the required impact analyses and preparatory measures; cost standards for decentralized public services and related quality standards were missing; and the draft did not comply with the principle of local autonomy and with the constitutional property regime. Nevertheless, greater decentralization remains a key objective of the government; to address the Court's concerns, the government has now opted for a gradual approach. Smaller-scale pilot areas are being identified, for which the requirements will be prepared (such as impact, cost and quality analyses). A specific law will be prepared for each pilot area and the initiative will be gradually expanded to other sectors to achieve the ultimate objectives.

3. This paper aims at providing policy options for the decentralization process. Section B presents the main merits and risks of decentralization drawing on existing literature. Section C

describes the evolution and the current status of decentralization in Romania. Section D discusses the proposed system under the 2013 draft decentralization law. And Section E analyzes risks, mitigating measures, and options going forward.

B. Merits and Risks of Decentralization

4. There has been a trend towards decentralization internationally, but the degree differs across countries. Decentralization reflects country-specific characteristics and objectives.

Historically, culturally and ethnically, decentralization has been used to protect the identity and independence of each group in the society or to create synergies among groups. Economically, decentralization is considered as a policy tool that can improve the provision of public services, and thereby, improve the overall macroeconomic performance. However, decentralization has been harmful in some cases where it was not well designed.

5. Decentralization can improve public service delivery through preference matching, stronger accountability, and competition. Policies devolved to lower-level governments are expected to better match the preferences of the local population and improve allocative efficiency (Hayek, 1945; Tiebout, 1956). When provided by the jurisdiction that has the control over the minimum geographic area, costs and benefits of public services are fully internalized (Oates, 1972). Geographical closeness of public institutions to the local population fosters accountability. Many studies found positive relationship between outcome of public services—particularly in education and health—and the degree of decentralization (e.g., as compiled by Ahmad et al., 2008).

6. In principle, decentralization of responsibilities and budget management could also improve fiscal and macroeconomic performances. The allocative and productive efficiency gains from decentralization can create budgetary savings and stronger fiscal performance as a result of lower costs of public service provision (Escolano et al., 2012; Neyapti, 2010; Baskaran, 2010). Decentralization encourages competition among local governments to attract tax base (businesses, property) through reasonable local tax burden, which leads to a search for innovative techniques to produce and provide public goods (cost-effectiveness), and reduces waste and corruption (Brennan and Buchanan, 1980). Local accountability pressures and better identification of the needs for public goods and services at the local level—including of infrastructure, health and education needs—can support economic growth (Fredriksen, 2013; Bénassy-Quéré et al., 2007; Kappeler and Valila, 2007; Arze del Granado et al., 2005).

7. However, if not carefully designed, decentralization can worsen the efficiency and quality of public services. If economies of scale are important in the production and delivery of a specific public good, decentralizing such responsibility to a small scale local government—in terms of population size—can increase production cost and reduce efficiency. In cases where the local authorities are not directly accountable to the local population, the preference matching and allocative efficiency might not materialize as the local authorities can allocate resources to less productive spending (Davoodi and Zou, 1998; Woller and Phillips, 1998; Zhang and Zou, 1998; Gonzalez Alegre, 2010; Grisorio and Prota, 2011). Accountability is weak, for instance, when local authorities are not elected by the local population but appointed by the central government.

Moreover, the ability of the central government to redistribute resources, for example through equalization funds, and ensure minimum provision of public services to all population might be hindered if its share of revenue and expenditure is reduced (Ter-Minassian, 1997).

8. Decentralization could loosen fiscal discipline and jeopardize fiscal sustainability. Local policymakers may fail to internalize fully the cost of local spending when they can finance their marginal expenditure with central transfers or shared revenue that are funded by taxpayers in other jurisdictions. The marginal benefits of additional spending would exceed the marginal costs. Such a behavior, often referred to as the “common pool,” leads to overspending and deficit bias (Oates, 2006).² The central government may not be able to enforce hard budget constraints on subnational governments that are consistent over time (Rodden et. al, 2003). Local governments may lack the capacity to efficiently manage the budget and provide public services. Finally, decentralization can increase financing costs as borrowing conditions are typically more favorable for central than local governments given that the former is perceived by the market as holding a privileged policy role.

C. The Current System in Romania

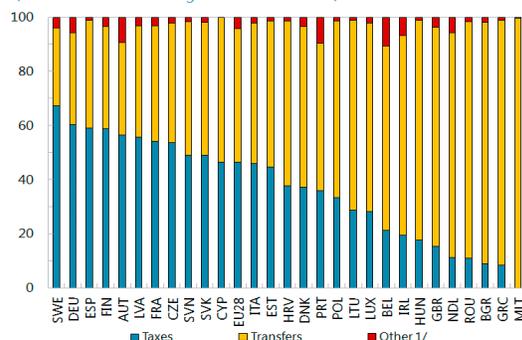
9. The share of “discretionary” own revenue is low and the share of earmarked funds has increased. Revenues at the local level comprise own taxes, shared taxes, earmarked and non-earmarked funds and transfers (see Annex I). The share of own taxes, for which local governments have full discretion on collection and use, declined and is now amongst the lowest in the European Union. However, it is to be noted that when shared taxes are included in own revenue, the share of the latter in total local government revenue expanded from about 20 percent of total revenue in the early 1990s to about 50 percent to date. Meanwhile, a system of earmarking of funds and transfers has gradually been introduced, and their share has exceeded 30 percent of total revenue of most local governments in recent years.

Local Government Revenue, 2012
(Percent)

Revenue sources	Share
Local taxes	17.9
Allowances deducted from income tax	30.6
VAT for financing decentralized expenditures	23.6
Other transfers and other income	17.8
VAT to balance local budgets	4.9
Amounts allocated by the income tax	4.3
VAT for roads	0.9

Source: Romanian Authorities.

Sources of Subnational Government Revenue, 2013
(Percent of subnational government revenue)



1/ Other includes property income, social contributions and other subsidies on production.
Sources: Adapted after European Commission (2012), *Public Finances in EMU*, Eurostat and IMF staff calculations.

² Moreover, the conduct of countercyclical policies could be weakened if a large share of taxes and spending is shifted to subnational governments as the central government would not have sufficient policy lever and policy priorities differ across levels of government.

10. The share of local governments' expenditures has expanded but remains below that of peers and is largely non-discretionary.

The share of local government expenditures in general government expenditures doubled in the past two decades. It has reached the average share in CESEE countries of about 25 percent in 2013, but is still below the EU average of about 33 percent. The education and health sectors represent the largest share of local governments expenditures (pre-school and primary education for counties and complemented by secondary and post high school for communes, cities and municipalities).³ Expenditures in those sectors lead to the predominance of items that are not at the full discretion of the local authorities (such as an important part of personnel and goods and services).

Local Government Expenditure, 2012
(Percent)

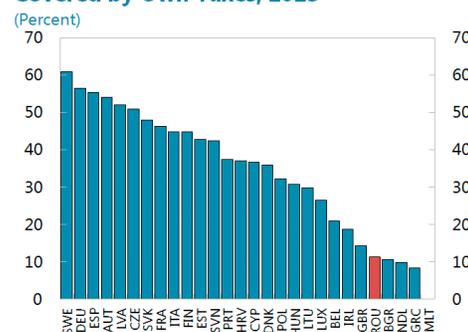
Expenditure items	Share
Personnel expenditures	23.1
Goods and services	23.4
Capital expenditures	15.7
Interest, subsidies and others	37.8

Source: Romanian Authorities.

11. The vertical fiscal imbalance persists as the share of expenditures financed with own revenue remains low.

Due to frequent changes in legislation, the magnitude of revenues at the full discretion of local authorities, i.e., own taxes, has oscillated significantly. Thus, an analysis of the vertical fiscal imbalance (VFI) based on such revenues requires particular caution. However, despite the large oscillations, the VFI has been on a worsening trend and Romania displayed one of the largest vertical imbalances across the European Union. The low VFI implies a heavy dependence on transfers from the central government. Furthermore, the frequent changes in legislation impede predictability and do not allow an efficient multi-year budgetary planning at the local level.

Share of Local Government Expenditure Covered by Own Taxes, 2013
(Percent)



Sources: Sources: Adapted after European Commission (2012), *Public Finances in EMU*, Eurostat and IMF staff calculations.

12. Local government budgets are bound by a balanced budget rule and a debt ceiling.

Legislation requires that local governments' budgets, excluding loans to finance investment and debt refinancing, must be balanced ("golden rule"). Moreover, local governments cannot contract or guarantee loans if their annual public debt service (principal payment, interest, commissions) including the loan they want to contract, is higher than 30 percent of their own revenue. From 2013, the budget of each government should be balanced, excluding investment projects financed by drawings on loans contracted before 2013. Loans contracted in 2013 were used to repay arrears.

³ Annex II presents a comparison by sector and economic function in Romania to the averages for the EU.

13. Despite low local government debt, arrears have frequently accumulated. Local government debt is among the lowest in the European Union. However, many episodes of arrears accumulation occurred, particularly regarding EU-funded projects and in the health sector. The authorities deployed various ad-hoc measures to address this issue, including restricting local governments to contract new loans only to cover arrears payments and putting a cap on personnel hiring to allow budgetary room for arrears clearance. Hiring by local governments is based on population size.

D. The Proposal for Further Decentralization

14. The 2013 draft law aims at strengthening subsidiarity by identifying services to be shifted to local governments. The draft law indicates two main objectives: (i) to increase the quality and effectiveness of services provided to citizens by the transfer of powers from the central government to local authorities, and (ii) to strengthen the administrative capacity of administrative units to reduce disparities in economic development. While previous legislations were relatively broad, the 2013 draft law specifies a list of local directorates of key ministries that would be brought under the management of local authorities. This draft law also stipulates a timeline with a view to accelerate the decentralization process.⁴ Moreover, the draft law intends to improve EU funds absorption through a more fluid decision making process and stronger capacity at the local level.

15. In the proposal, revenue sharing would remain unchanged, and the new decentralized competences would be financed with additional transfers. No revision is envisaged for the methodology of sharing revenue between central government, counties, districts, cities, municipalities, and towns. The 2014 budget, which was adopted before the Constitutional Court took a decision on the decentralization legislation adopted by parliament, foresaw budgetary transfers from the ministries involved in the decentralization process to the local governments according to their respective additional competences. Those transfers would amount to about RON 674 million (or 0.1 percent of GDP), of which about half would be related to personnel expenditures and the other half to goods and services. The overall budget balance would not be impacted as the lower balance at the central level created by the transfers would be compensated by a similar higher balance at the local level.

Financing of Additional Decentralized Competences (Million lei)

	Financing
Agriculture	17
Culture	2
Education	182
Health	310
Environment	68
Sports	94
Total	674
in percent of GDP	0.1

Source: Romanian Authorities.

16. More importantly, the draft law envisages the transfer of significant assets to local authorities. The draft law was prepared under the premise that full ownership of assets would

⁴ From the mid-2000s, some discussions were launched to create a new administrative layer—the “regions” — between the central government and the counties. The regionalization initiative has not been implemented as it would require an amendment of the Constitution for which political support has been insufficient. This debate slowed down the decentralization process.

enhance accountability in usage and maintenance. The assets to be transferred to local authorities include public transportation equipments and facilities, and sports and tourists facilities. The value of those assets has not been presented yet. Considering their magnitude, the implications of those asset transfers may be significant for the government balance sheet.

E. Policy Recommendations

Institutional environment

17. International experiences point to the need for a favorable institutional environment to reap the benefits from decentralization. A new empirical study by Sow and Razafimahefa (forthcoming) of 64 countries—including advanced, emerging and developing countries—over the period 1990–2012, analyzes the impact of fiscal decentralization on the efficiency of public service delivery (Annex III). They found that effective autonomy of local governments is required to allow preference matching and the allocative efficiency to operate. Strong accountability of local authorities vis-à-vis the local population, for instance through direct election, is necessary to allow improvement in productive efficiency. Corruption needs to be tackled to prevent any misuse of public resources. And capacity needs to be strengthened at the local level. Absent those conditions, fiscal decentralization can worsen public service delivery.

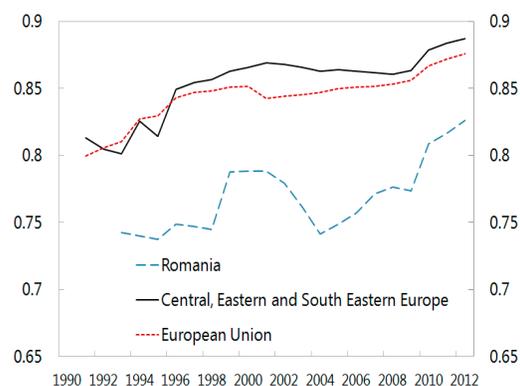
18. Romania’s efficiency of public expenditure lags behind that of peers. Sow and Razafimahefa (forthcoming) estimates the efficiency of public expenditure through a stochastic frontier technique (Battese and Coelli, 1988; Jayasuriya and Wodon, 2003; Grigoli and Kapsoli, 2013). This technique assumes that no economic agent (i.e., country) can exceed the ideal “frontier,” which refers to the optimum output—for instance infant mortality rate or school enrolment rate—produced with limited inputs (i.e., public expenditure). The deviation of the output in a specific country at a specific year from this frontier represents the individual measure of efficiency of that country. Efficient governments are those operating at, or very close to, the frontier as they try to reduce the infant mortality rate or improve school enrolment rate, given a limited amount of public expenditures. The model is specified as follows:

$$Y_{it} = \alpha + \gamma PE_{it-1} + \sum_{k=1}^K \phi_k Z_{k,it-1} + \varepsilon_{it} \quad (1)$$

$$\varepsilon_{it} = \omega_{it} + \mu_{it} \quad (2)$$

where Y_{it} is public expenditure outcomes, namely the infant mortality rate (and alternatively) the secondary school enrolment rate, with subscripts i and t denoting respectively country and time dimensions; PE_{it-1} is public expenditure on health (and alternatively) education as percent of GDP; $Z_{k,it}$ is a set of control variables. The error term ε_{it} in equation (1) has two components as shown in equation (2); ω_{it} represents an idiosyncratic

Efficiency of Public Expenditure



Source: Sow and Razafimahefa (forthcoming)

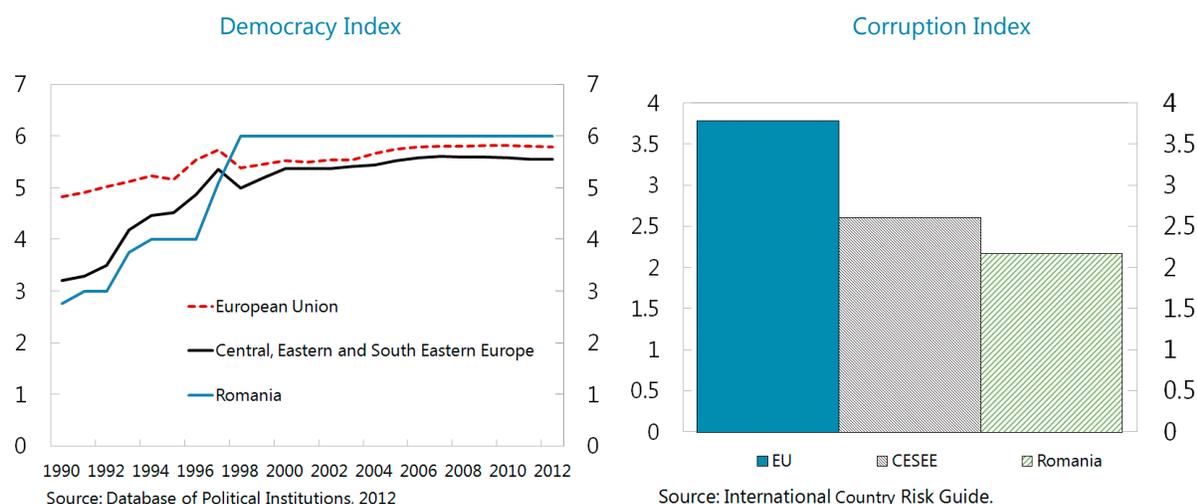
disturbance, capturing measurement error or any other classical noise, and μ_{it} is a one-sided disturbance capturing the country-specific and time-varying efficiencies of public expenditures. This analysis indicates that the efficiency of public service delivery in Romania has improved over time but remains below that of countries in the region.

19. Provided that institutions and capacity are strengthened, Romania can improve the efficiency of public expenditure through further decentralization. Sow and Razafimahefa (forthcoming) analyzes the impact of decentralization on the time-varying and country-specific efficiency coefficients of public expenditure estimated above. The model is specified as follows:

$$\mu_{it} = \alpha + \delta fd_{it-1} + \tau(fd_{it-1} \times I_{it-1}) + \rho I_{it-1} + \phi W_{it} + \psi_{it} \quad (3)$$

where μ_{it} is the country-specific and time-varying efficiencies estimated from equations (1) and (2), fd_{it-1} measures fiscal decentralization (i.e., share of local government expenditure or revenue in general government expenditure or revenue, I_{it-1} is a set of institutional and capacity variables, W_{it} is a set of other control variables and ψ_{it} is a stochastic error term. The set of institutional and capacity variables includes the level of corruption, the degree of autonomy of the regions, the strength of the democracy, bureaucracy, political stability, and checks and balances. The analysis finds that the fiscal decentralization variable alone worsens public expenditure efficiency. However, when interacted with stronger institutions and capacity, the impact becomes positive (Annex III). Thus, fiscal decentralization needs to be accompanied by measures to ameliorate institutions and capacity at the central and local levels. Romania has made progress on democracy and checks and balances, which is expected to support the positive impact of decentralization on public expenditure efficiency by fostering accountability. However, Romania lags behind peers on corruption and public financial management. Those weaknesses should be swiftly addressed before accelerating fiscal decentralization to prevent misuse or inefficient use of public resources which can lead to a deterioration of public service delivery.

Institutional Environment 1/



1/ Higher "democracy" indicator indicates stronger democracy; higher "corruption" indicates less corruption.

Vertical imbalance

20. The decentralization of resources and spending to local authorities should be carried out proportionately and simultaneously. In cases where decentralization of resources is accelerated without a matching decentralization of spending, the “excess” revenue can create additional spending. This can lead to a deterioration of the general government’s fiscal performance as the lower fiscal balance at the central level (due to lower revenue) is not compensated by higher balance at the local level. This case was witnessed in Colombia in the 1990s, Indonesia in 2000, and Nigeria in the recent oil-boom years. On the other hand, if responsibilities and spending are devolved without commensurate assignment of revenue, local authorities could be obliged to increase borrowing, accumulate arrears, or lessen the quality of public services. Transition economies in the 1990s experienced this phenomenon as they faced fiscal constraints at the central level and shifted responsibilities to local governments without proportionate resources.

21. Subnational governments’ own revenue, such as property taxes, should be enhanced to reduce the vertical imbalance. Romania’s low property tax rate can partly explain the low share of own revenue at the local level. Revenue collected from property tax is much below the EU average. Various analyses seem to suggest that there is room to increase the rate and raise revenue from property taxes, while protecting the poor against such an increase. Local authorities have full discretion over property taxes; they have legal latitude to change the parameters, as opposed to shared taxes. Assigning revenue responsibilities to local authorities would bolster collection efforts and strengthen fiscal discipline. This would enforce a hard budget constraint on local authorities as they would receive lower transfer from the central government, matching the assigned revenue responsibilities. Higher own revenue leads to more independence in spending allocation and allows the preference matching to operate. Insufficient own revenues would lead to over reliance on transfers from the central government and a tendency to spend without due consideration to the performance of revenue collection (i.e., a “soft budget constraint”). In addition to the property tax rate, own revenue can also be enhanced through the changes in the tax base (for instance, a shift from “ownership” to “use” principle or a more frequent reevaluation). Beyond the vertical imbalance, the horizontal imbalance should also be given sufficient attention to ensure that all subnational governments—the rich and the less rich—possess the minimum resources to provide all citizens standard public goods and services.

Public financial management

22. Strong public financial management, including commitment control and fiscal reporting, is essential to address risks from fiscal decentralization. Sound budget formulation, execution, accounting and control are critical. During the formulation and execution phases, local governments should set aside a fiscal buffer of 10 percent of total expenditure, in line with the requirement for the central government. This could help address potential mismatches between transfers from the central government and expenditures at the local level and prevent arrears accumulation. Local authorities should swiftly make use of the new commitment control and fiscal reporting systems. The new systems would contribute to improving management of local governments’ budgets based on real-time information at the various stages of the expenditure

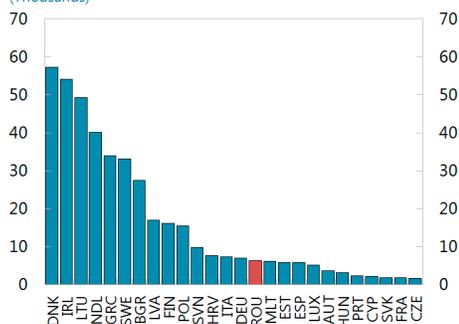
chain, bolstering transparency and efficiency. Training of users should be accelerated to address reluctance. Reporting on fiscal operations at the subnational level should be rigorous and timely. The investment prioritization initiative, recently launched at the central level, should be expanded to local projects. Financing through European funds should be sought before resorting to national financing to improve efficiency and reduce budgetary pressures. Finally, capacity at the local level should be strengthened. In case some local governments still lack the required capacity while others are deemed ready, decentralization of responsibilities and budget management can vary across subnational governments (asymmetric arrangements).

23. The value of assets that are potentially to be transferred to local authorities should be assessed and safeguard measures should be designed. As the 2013 decentralization draft law had envisaged assets transfers from the central to local governments, the value of those assets should be assessed. The value of the assets mentioned in the 2013 draft law seems significant, including transport and tourism facilities. The capacity needed for their management and the maintenance costs should also be analyzed. Absent such an assessment, the near- and medium-term quality of public services from those assets could deteriorate.

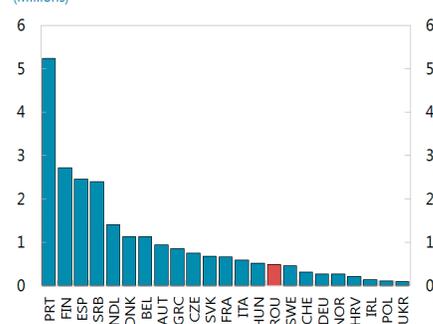
Economies of scale

24. Scale economies should be taken into account in the decentralization process as Romania ranks amongst the countries with a small population size per local government. Responsibilities to be shifted to local governments should be thoroughly selected. Efficiency could worsen and production costs could increase if scale economy is important in the production and delivery of the public goods/services. The size of population at both the local level (city, town or municipality) and intermediate level (county) is smaller than the EU average.⁵ Fiscal decentralization should be driven by efficiency and capacity considerations, and the role at each level of government should be clearly defined. Some overlapping of task assignments has been noted in the current decentralization legal framework. Based on those considerations, the transfer of the management and ownership to local authorities of some large transport and tourism facilities as envisaged under the 2013 decentralization initiative should be cautiously analyzed.

⁵ As some European countries have higher number of administrative layers than Romania, the intermediate level in this analysis corresponds to the administrative layer immediately following the lowest layer.

Average Population Size at the Local Level
(Thousands)

Sources: Council of European Municipalities and Regions, World Bank and IMF staff calculations.

Average Population Size at the Intermediate Level
(Millions)

Sources: Council of European Municipalities and Regions, World Bank and IMF staff calculations.

Fiscal rules

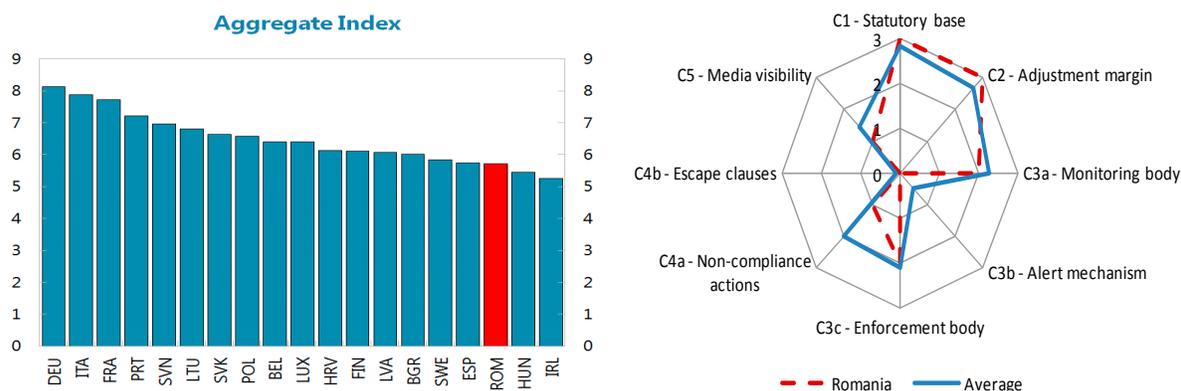
25. The effectiveness of fiscal rules for local governments could be strengthened to mitigate risks from decentralization. Fiscal rules for local governments in Romania are broadly similar to that in peer countries.⁶ However, the enforcement framework is significantly weaker as Romania ranks poorly on the European Commission's Fiscal Rule Strength Index at the local level. This index informs on (i) the legal base of the rule (such as constitution or law), (ii) the room for revising the objectives, (iii) the institutions in charge of enforcement, monitoring and alerting (such as independent authority or the parliament), (iv) enforcement mechanisms (such as sanctions and automatic corrections), and (v) media visibility (triggering public debate). Romania lacks a mechanism that would trigger an alert in case of deviation from the rules; the actions of the recently created Fiscal Council have so far been limited to the general government but have not sufficiently covered the local governments' fiscal rules yet. Also, effective corrective actions and sanctions in case of non-compliance are insufficient, despite some controls by the Court of Accounts and some penalty provisions. For instance, in the province of British Columbia in Canada, ministerial salaries can be withheld; and in Brazil, officials may be subject to fines.

F. Conclusions

26. There seems to be room for Romania to improve public expenditure efficiency and growth-enhancing investments from further decentralization. The efficiency of public expenditure seems markedly below countries in the region and the EU average. A cross-country analysis suggests that decentralization can improve efficiency but strong institutions and capacity are required. Romania has accelerated its decentralization in the last two decades as the shares of subnational government revenue and expenditure in general government revenue and expenditure doubled between 1995 and 2013; however, it remains more centralized than the EU average. Improving public expenditure efficiency can allow larger and better public investments without additional budgetary pressures.

⁶ See European Commission's fiscal rules database.

Fiscal Rule Strength Index



Source: European Commission.

27. However, a number of prerequisites need to be in place to reap those benefits. Local governments' own taxes should be expanded to reduce the large vertical imbalance; an enhancement of the base and rate of property taxes could be considered. Sanctions against non-compliance to local fiscal rules could be designed and enforced; media visibility could be strengthened and alert mechanism could be put in place. The new commitment control system should be swiftly used by all public institutions at the central and local levels. Local governments could be encouraged to set aside sufficient fiscal buffers in line with that at the central government level. The value of the public assets that could be transferred to the local authorities should be assessed and adequate safeguard measures put in place. Finally, corruption should be tackled to prevent efficiency leaks from further decentralization. Absent those prerequisites, further decentralization can worsen public expenditure efficiency and macroeconomic performance. Some lessons learned from experiences of other countries are shown in Annex IV beyond the issues covered above. Such experiences include excessive revenue decentralization, overlapping responsibilities between layers of governments, tax competition between local governments, and rigid earmarking of transfers.

Annex I. Subnational Government Revenue Sharing

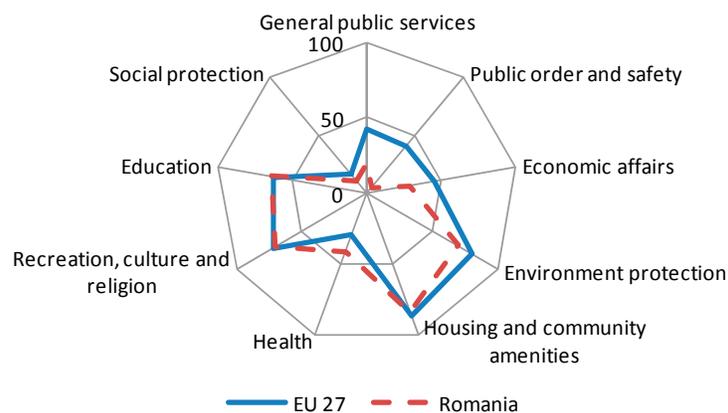
Local governments' revenue consists of own taxes, shared taxes, and transfers from the central government, as follows:

- Income tax for the case of Bucharest Municipality: 20 percent to the budgets of Bucharest districts, 44.5 percent to the budget of Bucharest Municipality, 7 percent for balancing the district budgets and the budget of Bucharest Municipality, and 28.5 percent for the central government;
- Income tax in other cases: 41.75 percent to the local budgets of communes, cities and municipalities where the income tax payers carry out their activities, 11.25 percent to the local budget of the county, 18.5 percent to balance the budgets of communes, cities and municipalities, as well as the budget of the county (equalization fund), 28.5 percent for the central government;
- Profit tax from companies under the authority of county councils;
- Equalization transfers: transfers from certain revenues in the state budget shared to counties as follows: (i) 70 percent according to the financial capacity of the county (based on the distance of income tax per capita collected from the average collection in all counties, and the number of inhabitants), (ii) 30 percent according to the county area;¹
- Property taxes (taxes on building and taxes on land); charges from transportation, permits and licenses; income from services; fines and penalties; hotel duty and tax from entertainment; sale of assets; donation and sponsorship; financial operations;
- Subsidies from the state budget; and
- European funds.

¹ From the income tax equalization fund and the equalization transfers: 27 percent to county's budget, and 73 percent to the budgets of communes, cities and municipalities distributed as follows: 80 percent decided by the head of the county public finance general directorate, based on population, land area and financial capacity, and 20 percent decided by the county council to clear arrears.

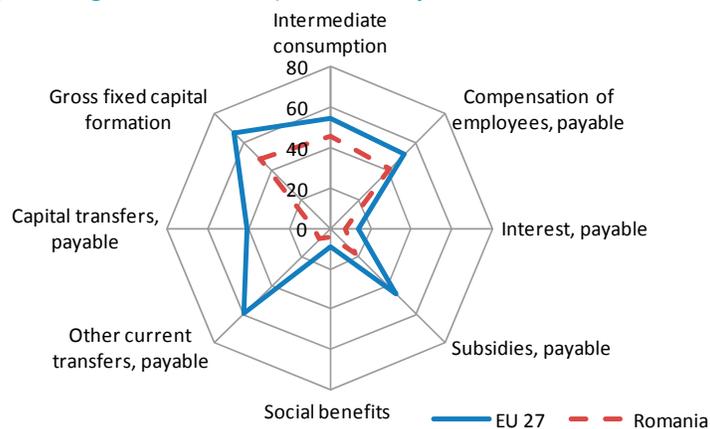
Annex II. Subnational Government Expenditure Composition

Share of Subnational Government Expenditure by Sector, 2012
(Percent of general government expenditure by sector)



Source: Eurostat.

Share of Subnational Government Expenditure by Economic Function, 2013
(Percent of general government expenditure by economic function)



Source: Eurostat.

Annex III. Decentralization, Efficiency and Institutions

Table AIII.1: Fiscal Decentralization and Efficiency of Public Service Delivery

Variables	Dependent variable: estimated efficiencies							
	Health				Education			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
FD _(t-1)	-0.523 (-1.540)	-0.809 (-1.137)	-1.307*** (-2.703)	-0.727*** (-3.159)	-1.079* (-1.780)	-0.171 (-0.217)	-0.764* (-1.889)	-0.696 (-1.275)
FD × Corruption _(t-1)	-0.488*** (-3.291)				-0.608*** (-2.738)			
FD × Parliamentary _(t-1)	4.373** (2.206)				1.160 (0.836)			
FD × Regime _(t-1)	0.033*** (2.967)				0.0125 (1.477)			
FD × Autonomy _(t-1)	2.057*** (5.457)				1.952*** (2.931)			
Real GDP pc _(t-1)	-0.040 (-1.535)	-0.122 (-1.598)	-0.117*** (-2.803)	0.013 (1.154)	-0.130** (-2.371)	-0.044 (-0.920)	-0.0717** (-2.257)	-0.020 (-1.120)

Note: (*), (**) and (***) denote statistical significance level of 10, 5 and 1 percent respectively. Robust t-statistics in parentheses.
Source: Sow and Razafimahefa (forthcoming)

Table AIII.2: Fiscal Decentralization and Public Expenditure Efficiency: Alternative Political and Institutional Variables

Variables	Dependent variable: estimated efficiencies									
	Health					Education				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
FD _(t-1)	-0.486* (-1.838)	0.953*** (3.609)	-1.408 (-1.513)	-0.480*** (-2.741)	-0.022 (-0.061)	-0.007 (-0.003)	0.786** (2.143)	-0.811 (-1.310)	0.565 (1.519)	-0.014 (-0.008)
FD × Assembly elec. _(t-1)	3.672*** (3.093)					5.499 (0.525)				
FD × Presidential _(t-1)	-1.737*** (-4.999)					-1.410*** (-2.583)				
FD × Bureaucracy _(t-1)	0.379 (0.953)					0.16 (0.644)				
FD × Political stab. _(t-1)	0.102 (0.781)					0.459 (1.394)				
FD × Checks and balances _(t-1)	0.141 (0.924)					-1.032 (-1.216)				
Real GDP pc _(t-1)	0.054*** (5.817)	0.002 (0.169)	-0.008 (-0.282)	0.006 (0.412)	0.009 (0.540)	0.023 (0.786)	-0.034** (-2.319)	-0.032 (-1.541)	-0.022 (-1.065)	0.080 (0.910)

Note: (*), (**) and (***) denote statistical significance level of 10, 5 and 1 percent respectively. Robust t-statistics in parentheses.
Source: Sow and Razafimahefa (forthcoming)

Annex IV. Lessons Learned

Excessive revenue decentralization: China decentralized the revenue sharing arrangement in 1980s, which led to a sharp drop in the central government's share in general government revenue from about 40 percent in 1985 to 28.3 percent in 1993 (IMF, 2009b). By the early 1990s, this share became critically inadequate as the central government could no longer conduct sufficient redistributive policies. China's impressive growth performance has not benefited all subnational governments equally, as income disparities across provinces have widened. Furthermore, the provision of public services is skewed in favor of richer provinces. These developments called for larger redistribution. In 1994, a set of reforms was introduced to change the revenue-sharing arrangement, create a central tax administration and increase the role of transfers. By 2007, the share of the central in general government revenue reached 53.5 percent.

Overlapping responsibilities: In Bolivia, significant overlaps in spending responsibilities created inefficiencies and reduced accountability (IMF, 2009b). Health and education were characterized by extensive concurrency between central government, regions, and municipalities. The central government set the norms and the curricula, and pays for salaries of teachers and medical personnel. Municipalities were responsible for construction and maintenance of school and health premises and for educational and medical equipment and supplies. Regional governments were responsible for the implementation of norms and standards set by the center. Selection and hiring of teachers and medical personnel was done at the regional level, but the certification of hours worked is done at the municipal level. Lack of coordination led to spending inefficiencies; one of the consequences of this setup was that, while new construction generated new requests for personnel to run the premises and to provide the services, separation of responsibilities originated frequent discrepancies between building of new premises and their staffing. More generally, investment spending decisions were not coordinated across levels of government.

Tax competition: In Brazil, the Tax Incentive War ("Guerra Fiscal") among local governments is a manifestation of a "race to the bottom" (Castilho and Silveira, 2009; Ayres dos Santos, 2013). States used the ICMS, the most important tax in Brazil which is somewhat similar to VAT, to design schemes that would provide tax incentives to attract businesses (trade and investment). Although, tax competition is unconstitutional, states found various ways to circumvent the legal framework, including deduction and exemption schemes. The tax competition bitterly penalized small states who did not possess sufficient tax lever to provide tax incentives and were not endowed with competitive and large production base. This led to large disparity between states in provision of public goods and services and in level of development. A degree of coordination of subnational taxes, especially as regards the definition of the tax base, is important to avoid predatory tax

competition. Tax competition can also lead to large vertical imbalance. The decentralization framework should give incentives and possibilities to local authorities to raise the necessary revenue.

Rigid earmarking of transfers: In Kosovo, formulas for earmarked transfers in health and education were not adequate to cover municipalities' spending mandates in these areas, while unconditional transfers are not providing any spending autonomy to municipalities, given their limited size. In Mexico and Indonesia, special-purpose earmarked transfers translated into rigidity in subnational spending and the effective allocation to the specified purpose was rather difficult to control. Earmarked transfers should be carefully designed (IMF, 2009b).

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