



CZECH REPUBLIC

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Selected Issues

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THE FISCAL STRENGTH OF THE CZECH REPUBLIC

The lack of significant internal or external imbalances that characterized other European economies resulted in limited direct fiscal impact of the international financial crisis and the subsequent euro area crisis on the Czech Republic. Macroeconomic stability has been maintained supported by solid fiscal fundamentals and low fiscal risks from the financial system, although long-term ageing related spending pressures remain a challenge.

Fiscal policy in the Czech Republic has shown a pro-cyclical bias temporarily interrupted during the crisis years. The large stimulus implemented has been more than compensated by a frontloaded adjustment. However, the fiscal framework could be improved to increase transparency, predictability and credibility of policy and minimize the pro-cyclical bias. This could be achieved by incorporating, among other things, a simple and credible rule with a medium-term fiscal anchor set in structural terms.

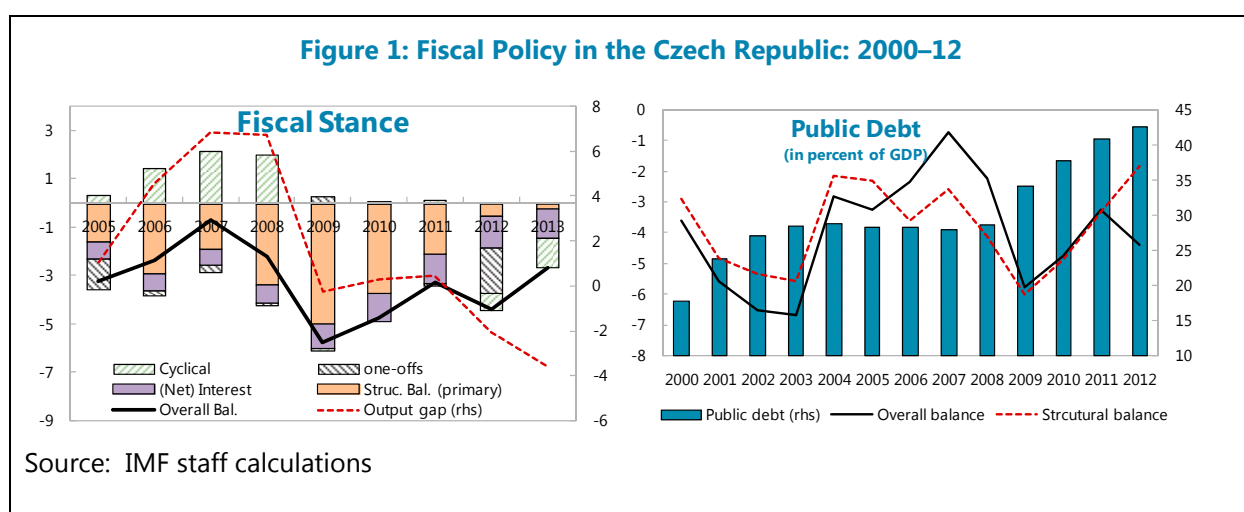
A. Fiscal Policy in the Czech Republic

1. Estimating the underlying or structural fiscal position is critical to assess the short-term impact of fiscal policy on economic activity and its long-term impact on fiscal sustainability. It is, however, subject to significant uncertainty regarding the methodology used to estimate the cyclical component of fiscal policy as well as the measure of potential activity. The recent crisis driven by large imbalances in some economies highlighted these challenges. In particular, absorption gaps with larger amplitude than, and not necessarily fully synchronized with, output gaps tend to disproportionately impact fiscal accounts, particularly revenues. Similarly, labor hoarding, observed in some countries during the crisis, results in a stronger labor market performance than the widening output gap would suggest and therefore a stronger underlying fiscal position than the one obtained controlling only for the output gap.

Fiscal policy stance

2. In the years before the crisis the Czech Republic did not experience a real estate or credit boom nor its financial system required public support during or after the crisis. This was due, in large measure, to the lack of sizeable pre-crisis imbalances that were, in any case, significantly smaller than in other neighboring or advanced economies. Thus, using the output gap to decompose the business cycle into its cyclical and structural components seems a reasonable approximation. The underlying fiscal position in this note is calculated making adjustments for the output gap on a disaggregated basis using the estimated tax and spending elasticities by the OECD. Valenta (2011) shows that linking the different tax and expenditure components to their revenue basis (private consumption, real wages, employment, etc) rather than the output gap results in consistent estimates of the structural fiscal position to those obtained using the OECD methodology.

3. After years of significant fiscal loosening with deficits, mostly structural, close to 7 percent of GDP in 2002 and 2003, a large fiscal consolidation took place in 2004. The structural deficit was reduced from close to 6 percent of GDP in 2003 to 2 percent of GDP in 2004. As a consequence, debt halted its upward trend (it had increased from 18 percent in the early 2000s to 29 percent of GDP in 2004). However, in the years that followed until the international financial crisis, fiscal policy started to loosen at a time of high growth and increasingly positive output gaps (figure 1). The response to the crisis resulted in an even larger structural fiscal deterioration of more than 3 percent of GDP over the period 2007–09 while the overall budget balance deteriorated by 5 percentage points of GDP with public debt jumping to around 38 percent of GDP by 2010. This large stimulus was followed by an even larger structural consolidation over 2010–12 of 4.2 percent of GDP even when economic activity became increasingly weak. Thus, except for the crisis years, fiscal policy pre- and post-crisis has shown a clear pro-cyclical bias.

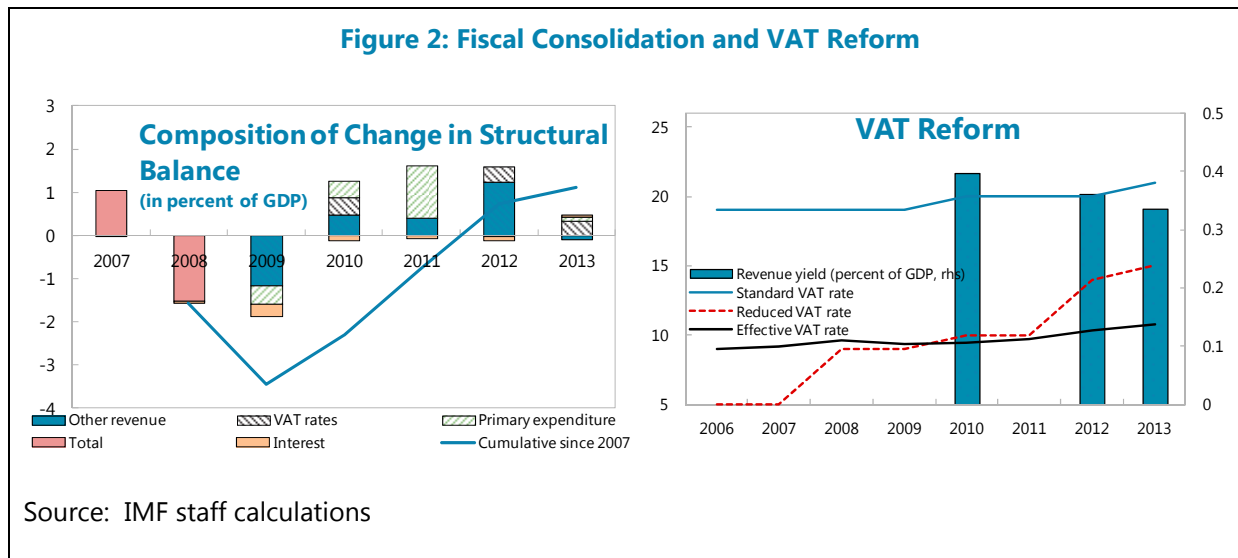


VAT reform

4. Fiscal consolidation in the Czech Republic was evenly distributed between expenditure and revenue measures. Of the revenue measures, almost half consisted of changes in the VAT system (figure 2). It has been a general trend after the crisis to focus on indirect taxes when implementing reforms aiming at increasing revenues. This is favored over other more distortionary forms of taxation such as taxes on income or labor. The VAT has proven to be particularly effective to increase revenues with reforms focused on increasing standard rates, reducing the gap between standard rates and reduced rates, and reducing the number of exempted and zero rated goods.

5. Prior to the crisis the VAT had a relatively low rate, 19 percent standard rate with a 9 percent reduced rate, collecting 6.2 percent of GDP or 17 percent of tax revenues. After the crisis the VAT system has been extensively and sequentially modified in a broader reform effort to increase the share of indirect taxes in total tax collection (figure 2). In 2010 both rates were increased by 1 percentage points followed by a further increase in the reduced rate of 4 percentage points in 2012. Finally a further one percentage point increase in both VAT rates has been implemented in 2013. Although these measures were aimed at increasing tax collection, the

projected unification of the two rates in a single rate of 17.5 percent in 2016 is intended to be revenue neutral.



6. The share of VAT in tax and total revenue as well as the effective tax rate in the Czech Republic is about average compared to the region (table 1). This is also the case in terms of efficiency (accounting for compliance as well as policy gaps) of the VAT system. In fact, the 4 percentage point increase in the reduced rate in 2012 was effective in reducing the policy gap by 4 percentage points (the effective tax rate increased by 0.5 percentage points) and increasing revenue by around 0.3 percent of GDP. Thus, this reform has placed the Czech VAT system in line with the best regional performers in terms of the remaining policy gap. Assuming constant compliance, the increase in both rates in 2013 has the potential to increase revenues by 0.2-0.3 percent of GDP further increasing the effective tax rate by around 0.5 percentage points to 10.7 percent. Relative to the best performers in the region, revenue gains from compliance are possible (potentially up to 0.7 percent of GDP). However, compliance gains are difficult to realize in the short-run as they require sustained reform efforts. Thus, most of the potential revenue gains from the VAT system in the Czech Republic seem to have been exhausted already.

Table 1: Impact on VAT Revenue of Policy and Administration Improvements in 2010

	VAT rev. in percent of:			VAT rates:			c-effic.	compliance gap	policy gap	Potential extra revenue (in percent of GDP) from:				
	Total rev	Tax rev	GDP	Standard	Other	Effective				Improved Policy: max improv. to 39 percent	Improved Compliance: max improv. to 10 percent	With c-efficiency of 53		
Austria	16	29	8	20	10	11	53	14	39	4.9	0.0	1.3	0.4	0.0
Czech Republic	18	38	7	20	14	10	49	18	41	4.8	0.2	1.5	0.7	0.6
Germany	16	32	7	19	7	9	49	10	46	6.0	0.9	0.8	0.0	0.6
Hungary	19	34	9	27	5,18	11	42	23	45	7.0	1.0	2.6	1.4	2.1
Poland	21	38	8	23	5,8	10	42	12	52	8.5	2.3	1.1	0.2	2.0
Slovak Republic	20	41	6	20	10	8	41	28	43	4.8	0.5	2.5	1.6	1.9
Min	16	29	6	19	5	8	41	10	39	4.8	0.0	0.8	0.0	0.0
Max	21	41	9	27	18	11	53	28	52	8.5	2.3	2.6	1.6	2.1
Median	18	36	7	20	...	10	46	16	44	5.5	0.7	1.4	0.5	1.2
Average	18	35	7	22	...	10	46	18	44	6.0	0.8	1.6	0.7	1.2

Effectiveness of fiscal policy

7. The impact of fiscal policy on economic activity has come to the center of the recent policy debate. Although there is an extensive and rapidly expanding empirical literature that tries to estimate fiscal multipliers, the exceptional circumstances in which fiscal and monetary policies have to operate in the context of the recent economic crisis has brought new and difficult challenges. Economic theory suggests that fiscal policy is more effective (i.e. multipliers are larger) the more closed to trade economies are, the smaller automatic stabilizers are, the less flexible the exchange rate is, the less responsive monetary policy is to fiscal shocks, and the lower debt levels are.

8. The characteristics of the Czech Republic, a small open economy with a flexible exchange rate, suggest that fiscal multipliers are relatively small. This

has been the finding of the empirical literature that has estimated fiscal multipliers for the Czech Republic. They are found to be below those estimated for other European and advanced economies with an overall output elasticity to a change in the budget balance around 0.35 versus OECD and European averages of 0.44 and 0.48 respectively (table 2). In the short-run, Vartan (2011) finds that a 1 percent of GDP increase in public spending increases output by about 0.5 percent over the first couple of years but the impact halves over the medium-term. On the other hand, a tax shock has very limited impact on GDP over the short- or long-term. This is consistent with the finding of Klyuev and Snudden (2011) that, using a general equilibrium model, find that the size of the short-run multiplier is much smaller than those found for the United States or the Euro area.

Czech Republic: Fiscal Multipliers		
	Short run	Medium term
<i>Expenditure</i>		
GDP	0.4-0.6	-0.2-0.4
Private consumption	0.1-0.2	0.0-1
Private investment	-0.3	0.0
Wage	0.1-0.2	0.1
<i>Revenue</i>		
GDP	-0.1-0.3	0.0-0.1
Private consumption	0.0-0.1	0.0
Private investment	-0.1-0.1	0.0
Wage	0.0-0.1	0.0

Source: Valenta 2011

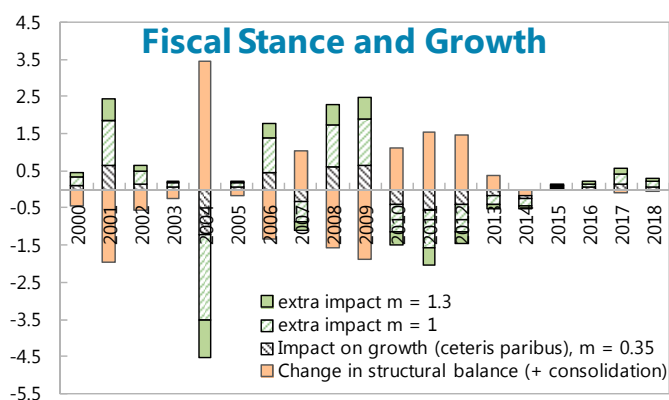
Table 2: Czech Republic: Fiscal Multipliers

	Girouard and Andre (2005)			Dybczak	Valenta
	Czech Republic	OECD average	Euro area average	Czech Republic	Czech Republic
Personal income tax	1.2	1.3	1.5	1.0	0.7-0.9
Social contributions	0.8	0.7	0.7	0.6	0.6-0.8
Corporate income tax	1.4	1.5	1.4	1.5	1.2-1.5
Indirect taxes	1.0	1.0	1.0	1.0	0.5-1.0
Unemployment benefits	-3.3	-4.9	-4.2	-4.4	-7.3--4.1
Output elasticity of budget balance	0.35	0.44	0.48	0.32	0.29-0.31

Source: Valenta 2011

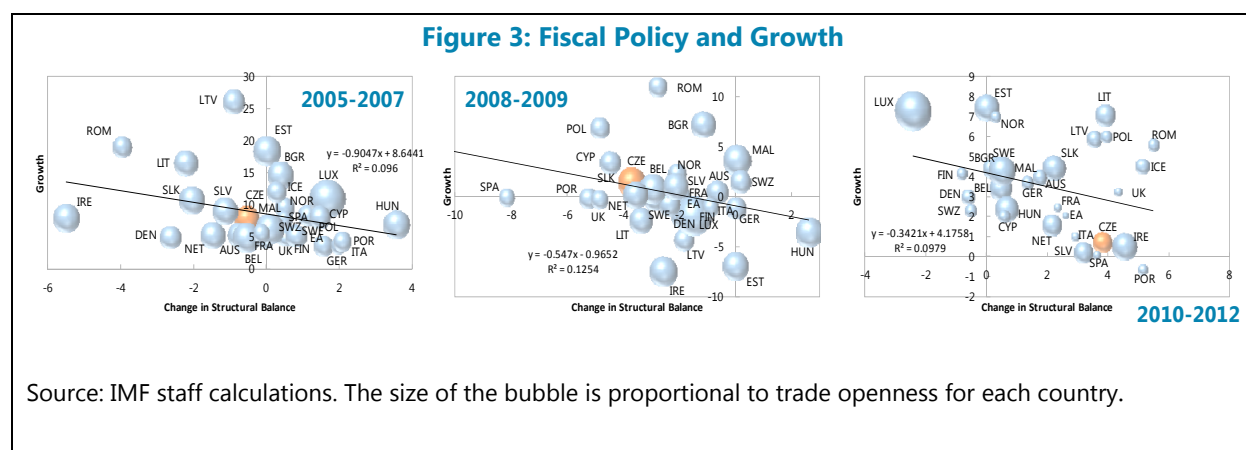
9. Some factors currently prevalent would suggest a slightly higher multiplier. With subdued economic activity, the policy rate at the zero lower bound and low inflationary pressures, monetary policy is not expected to be responsive to a fiscal policy expansion in the short-term. At the same time, the effects of fiscal policy shocks on economic activity are likely nonlinear, and multipliers are larger in downturns than in expansions. This is the case because excess capacity in recessions results in lower crowding-out of public spending. Furthermore, the proportion of credit constrained households and firms are higher during recessions, suggesting a higher marginal propensity to consume. Even accounting for these factors, fiscal multipliers in the Czech Republic are likely to be small, at least relative to other countries, reducing the effectiveness of fiscal policy as a tool for macroeconomic stabilization.

10. However, with very subdued private domestic demand, the contractionary, pro-cyclical, fiscal stance since 2010 has clearly had a negative impact on growth. This would amount to just below half percentage point per year over 2010–12 using the OECD output multiplier of around 0.4. Note that a much larger multiplier of around 1 would result in an extra impact on growth between 0.7 and 1 percentage points depending on the year.



11. Czech growth performance after the crisis has been disappointing with a significant under performance relative to similar countries in the region. This can be seen in figure 3 where real GDP growth is presented controlling for the structural fiscal adjustment for the period

immediately before the crisis, during the crisis, and the years after the crisis. Given its slightly pro-cyclical structural fiscal position, growth performance pre-crisis was similar to the European average. Similarly, growth performance was around average in the crisis years when the fiscal stimulus in the Czech Republic was 30 percent above the European average. However, after the crisis, growth performance has been significantly below average, 0.7 percent for the Czech Republic versus the European average of 3.5 percent of GDP while the fiscal consolidation was twice as large as the average in Europe (around 4 percent of GDP versus an average of 2 percent of GDP). It is noteworthy that for this selection of European economies, the correlation between growth and fiscal policy as expressed by the slope of the line was largest pre-crisis and weakest post-crisis.



Fiscal policy framework

12. The fiscal policy framework in the Czech Republic was already under reform before developments in Europe forced a renewed focus at the EU level materialized in the fiscal compact, which the Czech Republic is so far not part of. The objective of these changes and the introduction of a fiscal rule is to enhance the effectiveness of fiscal policy by ensuring predictable and sustainable government finances and a strong net wealth and fiscal positions to deal with unexpected future shocks and projected ageing related spending pressures.

13. The current framework consists of a medium-term fiscal target within the medium-term budgetary framework (MTBF) introduced in the 2004 Public Finance Reform. The MTBF is a three-year rolling budget framework that converts general government balance targets into expenditure ceilings, currently the only binding numerical fiscal constraint for the state budget and six state funds. Thus, the state budget for any current year should comply with the medium-term expenditure ceilings approved the previous year.

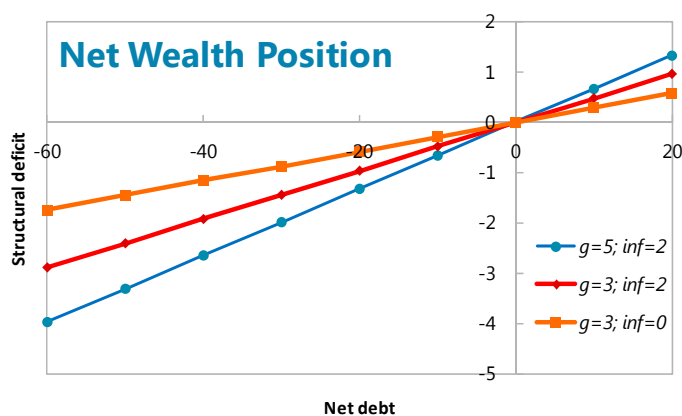
14. Although the current framework contains necessary elements for effective medium-term fiscal planning and budgetary discipline, there remain critical weaknesses that lead to a pro-cyclical bias. Since ceilings for outer years are frequently revised, in practical terms the framework provides an effective constraint only on next year's budget, lacking a proper medium-term fiscal anchor and, as a consequence, any connection to long-term sustainability. In addition,

there is no enforcement mechanism or corrective actions and the coverage of the framework is limited to less than 60 percent of general government spending. Spending by local governments and social security funds, accounting for more than 40 percent of total spending, are not subject to any explicit rule nor are covered by the expenditure ceilings. Furthermore, given the constitutional independence of municipalities, incorporating these into any fiscal rule will require an ‘internal stability pact’.

15. Recent proposals by the Ministry of Finance to update the fiscal framework reflect strong commitment to fiscal sustainability and an increased focus on transparency and accountability. They include four rules establishing limits on various fiscal aggregates as well as the establishment of an independent fiscal council. The proposal which includes a debt break (requiring a super majority in parliament to be approved and modified) and a structural balance rule (requiring a simple majority in both chambers of Parliament) is an important step in the right direction. Although the proposed framework remains excessively complex, it establishes a clear link, absent so far, between medium-term fiscal formulation (the structural balance target) and long-term fiscal sustainability. The proposed structural rule requires a balanced budget to be achieved by 2021 and will translate into expenditure ceilings after adjusting revenues for cyclical factors as well as one-offs and adjustment terms. The credibility and successful implementation of the rule would be enhanced by a broad political consensus around its structure and targets.

16. The structural target should be determined with reference to the desirable underlying net wealth position of the public sector. In equilibrium, this is determined by the deficit for given growth, inflation, and interest rates. It should therefore reflect long-term sustainability issues as well as short- and medium-term demand concerns. With financial assets just below 40 percent of GDP and liabilities just above 40 percent of GDP, the net wealth

position of the Czech Republic was around -12 percent of GDP in 2012. A net wealth position of around -10 percent of GDP would be consistent with a structural deficit of 0.7 percent if potential growth is 5 percent and equilibrium inflation 2 percent. Alternatively, a structural deficit of 2 percent of GDP would lead to a steady state net wealth position of -30 percent. Note that if potential growth or inflation is lower, the resulting net wealth position associated with a given structural deficit is worsened.



B. Strength of Fiscal Policy

17. This section assesses the strength of the fiscal position of the Czech Republic using a comprehensive framework to analyze the fiscal stance and fiscal risks as outlined in Cottarelli

(2011). Risks include the current level and baseline projections of key fiscal variables, shocks around this baseline (related to macroeconomic or fiscal policy changes, or the realization of contingent liabilities), and other factors, including country-specific non-fiscal variables (such as large current account imbalances, large financial systems and high private debt levels).

Contingent liabilities from the financial system

18. As recent experience has painfully shown, fiscal risks would also include implicit liabilities arising from the financial sector even if no explicit guarantees exist. The banking system in the Czech Republic is relatively small with assets of 120 percent of GDP, credit of 63 percent of GDP, deposits of around 85 percent of GDP and the deposit insurance fund covering 1.5 percent of insured deposits at end-2012. The financial system is concentrated with the five largest banks controlling around 70 percent of total assets and the three largest 60 percent at end-2010. The largest banks are wholly or majority-owned subsidiaries of big European financial institutions. The financial system in the Czech Republic has a conservative balances sheet structure with a high share of loans denominated in local currency, high capital and large liquidity. Thus it proved very resilient to the global crisis and was one of the few in the region that did not require exceptional support measures. As a consequence, fiscal risks associated with the financial system appear manageable.

Fiscal indicators

19. The assessment of the fiscal position around the baseline is based on indicators that measure solvency risks based on current deficit and debt levels, and projected growth-adjusted interest rate on public debt based on World Economic Outlook (WEO) baseline projections. Other long-term fiscal pressures associated with demographic aging, such as projected changes in health care and pension expenditures, are also considered as well as risks associated with public asset and liability composition and financing requirements.

20. The indicators are presented in group average for advanced economies and European countries together with the Czech Republic specific index. They are assessed against a threshold that, when exceeded, indicates a higher risk of fiscal stress as estimated in Baldacci et. al. (2011). See Appendix I for a detailed description of all variables, their respective stress thresholds and their signaling power.

21. For advanced economies, fiscal risks have been elevated since the financial crisis and well above pre-crisis levels. Higher solvency risks comes from deteriorated fiscal fundamentals and ageing related long-term fiscal pressures as well as very elevated financing needs. Many advanced and European countries currently exceed the thresholds on public debt, cyclically adjusted primary balance, gross financing needs and long-term health spending (table 3).

Table 3. Advanced Economies: Fiscal Indicators, 2012

Variable	Basic Fiscal Variables			Asset and Liability Management				Long-Term Fiscal Trends			
	r - g	Gross Debt	Cyclically Adjusted Primary Balance	Gross Financing Needs	Short-term debt	Nonresidents debt	Maturity of Debt	Fertility Rate	Long-term Health Spending	Long-term Pension Spending	Dependency Ratio
Unit	(percent)	(percent of GDP)	(percent of GDP)	(percent of GDP)	(percent of total)	(percent of total)	(average, years)	(percent)	(40 years ahead change in percent of GDP)		(percent)
Australia	-0.4	27.2	-2.4	5.2	7.6	51.3	5.8	1.9	3.3	1.3	21.0
Austria	0.2	73.7	-0.3	9.7	10.4	81.7	7.8	1.4	5.2	2.2	26.8
Belgium	1.3	99.6	-0.5	24.5	21.6	53.4	7.6	1.8	3.2	5.1	27.5
Canada	0.3	34.6	-2.2	14.8	17.3	22.1	5.7	1.7	2.9	1.4	21.6
Czech Republic	0.9	43.1	-3.7	11.3	18.4	30.8	5.8	1.5	0.8	1.0	22.8
Denmark	1.1	50.1	-2.7	9.3	11.5	41.4	8.6	1.9	0.9	-0.1	26.7
Finland	-1.0	53.3	-0.8	9.3	16.9	90.1	6.5	1.9	3.7	2.7	28.5
France	0.4	90.3	-0.7	18.9	20.6	60.1	7.8	2.0	2.1	0.6	27.4
Germany	0.3	82.0	2.3	14.1	23.3	60.1	6.4	1.4	1.3	2.0	31.6
Greece	3.7	158.5	2.1	31.4	12.7	66.8	8.0	1.4	5.5	1.4	28.5
Iceland	-0.2	99.1	1.0	8.8	7.9	...	6.6	2.2	5.5	0.2	18.8
Ireland	0.7	117.1	-2.9	10.5	1.3	58.4	6.2	2.1	1.2	2.7	18.4
Italy	3.2	127.0	4.0	23.1	18.4	33.0	7.0	1.4	0.9	0.5	32.2
Japan	-0.8	137.1	-8.4	70.7	28.2	7.9	7.5	1.4	1.1	0.4	38.6
Korea, Republic of	-2.1	33.7	1.6	9.7	26.7	13.2	3.8	1.2	5.9	8.2	16.5
Netherlands	0.7	71.7	-1.5	16.9	23.7	51.8	7.0	1.8	4.8	3.5	24.6
New Zealand	0.0	38.2	-2.2	7.2	14.4	0.0	10.8	2.1	2.6	3.4	20.7
Norway	-1.6	34.1	-6.5	-6.2	0.0	32.5	4.2	2.0	6.0	3.1	23.6
Portugal	2.8	123.0	1.0	16.3	14.0	55.8	6.2	1.3	1.9	0.4	27.8
Slovak Republic	-0.3	52.3	-2.9	6.5	0.0	39.3	5.7	1.4	1.0	2.7	17.5
Slovenia	3.1	52.6	0.3	0.0	0.0	47.7	7.0	1.6	2.7	4.8	24.9
Spain	3.2	84.1	-5.6	24.3	21.4	26.3	6.9	1.4	0.5	2.6	25.8
Sweden	-1.0	38.0	-1.4	5.2	11.9	45.5	6.0	2.0	6.5	0.5	29.5
United Kingdom	0.5	90.3	-3.3	16.8	12.9	30.2	15.3	1.9	5.9	0.6	26.2
United States	-1.8	106.5	-4.4	25.9	21.2	30.3	5.9	2.1	8.4	1.7	20.6
Average (PPP, Europe)	1.1	88.7	-0.5	17.1	18.1	47.2	8.2	1.7	2.7	1.5	28.1
Average (PPP)	-0.5	95.6	-3.0	26.2	20.6	33.4	6.9	1.8	4.9	1.7	25.4
Median	0.3	73.7	-1.5	11.3	16.9	45.5	6.6	1.8	2.9	1.7	25.8
Threshold	3.6	72.2	-4.2	17.2	9.1	83.6	3.9	0.6	4.5	6.2	36.0

Source: World Economic Outlook, Bank of International Settlements, Dealogic, and IMF.

22. In the case of the Czech Republic, the pre-crisis period since the early 90s was characterized by some positive dynamics. These include lower growth adjusted interest rates on public debt, decreasing financing needs, and a significantly smaller share of short-term public debt with increasing average maturity. On the other hand, gross public debt steadily increased (albeit at a moderate pace and from very low levels), debt held by non-residents increased (although it remains below the average of European or advanced economies), the fertility rate declined markedly to well below already low European levels, and projected long-term health and pension spending increased significantly (particularly health spending).

23. The fiscal deterioration resulting from the financial crisis was relatively moderate and temporary. The crisis resulted in higher cyclically adjusted deficit, debt and financing needs as well as sharply higher, although temporary, growth-adjusted interest rates. As a result, interest rates paid on public debt shifted from well below group averages to significantly above them over 2008–10 but has declined below European averages since fundamentals proved strong in the Czech Republic.

24. The Czech Republic exceeds two thresholds, short-term debt as percent of total debt, currently around 18 percent, and the fertility rate, 1.5 children per woman. However, most countries exceed these thresholds which, in any case, have relatively low signaling power of fiscal distress (Appendix I). On the other hand, the Czech Republic ranks well in terms of public debt and financing needs and moderately well on all other indicators.

25. Ageing dynamics create large medium- and long-term fiscal challenges for the Czech Republic that, if unchecked, will require significant fiscal consolidation over the medium-term. The European Commission estimates in its latest report on fiscal sustainability that age-related public spending in the Czech Republic will increase by 5.2 percentage points of GDP over the next 50 years versus the EU average of 3.6 percentage points. This is distributed in pension related spending, 2.7 percentage points of GDP increase against the EU average of 1.4 percent of GDP, and health related spending, 1.7 percentage points of GDP against the EU average of 1.1 percent of GDP (table 4).¹

¹ EU projections may overestimate long-term spending pressures as demographic dynamics in the Czech Republic are such that pension spending reaches its maximum around 2060, the cutoff year for EC estimates.

**Table 4: Long-Term Spending Pressures
(in percent of GDP)**

	Pension		Healthcare		Long-term care		Education		Unemployment		Total	
	Level	Change	Level	Change	Level	Change	Level	Change	Level	Change	Level	Change
Austria	14.1	2.0	7.4	1.6	1.6	1.2	4.9	-0.4	0.8	-0.1	28.8	4.4
Czech Republic	9.1	2.7	6.9	1.7	0.8	0.7	3.4	0.2	0.4	-0.1	20.6	5.2
Germany	10.8	2.6	8.0	1.4	1.4	1.7	3.9	-0.2	1.0	-0.3	25.2	5.2
Hungary	11.9	0.5	4.9	1.1	0.8	0.6	4.3	-0.5	0.4	-0.1	22.4	1.6
Poland	11.8	-2.2	4.9	1.9	0.7	1.0	3.9	-0.5	0.2	-0.1	21.6	0.1
Slovak Republic	8.0	5.2	6.2	2.1	0.3	0.4	3.1	-0.1	0.2	-0.1	17.8	7.5
EU	11.3	1.4	7.1	1.1	1.8	1.5	4.6	-0.2	1.1	-0.3	26.0	3.6
EA	12.2	1.8	7.3	1.1	1.8	1.7	4.5	-0.2	1.3	-0.4	27.0	4.0

Source: Fiscal Sustainability Report 2012 (European Commission)

Long-Term Sustainability

26. The current fiscal baseline scenario, consistent with that presented in the April 2013 Outlook, targets a deficit target of the general government below 3 percent of GDP in 2013 that would allow exiting the EDP mechanism as agreed with the EC. Achieving this target should not require any further structural adjustment beyond what is already included in the 2013 budget. This baseline scenario results in long-term debt dynamics that are sustainable but with increasing debt, albeit at a slower pace, from around 46 percent of GDP in 2012 to 51 percent of GDP in 2018 (table 5). Thus, under several alternative scenarios (figure 4) including a permanent $\frac{1}{2}$ standard-deviation shock to growth, interest rate and primary balance independently and a $\frac{1}{4}$ standard-deviation shock to the three combined, a one-time 30 percent depreciation of the REER, and a one-time 10 percent of GDP shock to contingent liabilities, public debt trajectory worsens significantly and reaches 51–67 percent of GDP by 2018 with the growth shock having the biggest impact on debt.

Table 5. Czech Republic: Public Sector Debt Sustainability Framework, 2008–18

(In percent of GDP, unless otherwise indicated)

	Actual					Projections						Debt-stabilizing primary balance 9/
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
Baseline: Public sector debt 1/	28.7	34.2	37.9	41.0	45.9	47.8	49.2	49.8	50.2	50.4	50.7	0.0
o/w foreign-currency denominated	4.0	5.6	6.8	6.7	8.5	8.9	9.1	9.3	9.3	9.4	9.4	
Change in public sector debt	0.8	5.5	3.7	3.1	4.9	1.9	1.3	0.6	0.4	0.2	0.3	
Identified debt-creating flows (4+7+12)	0.9	5.3	4.7	3.4	3.2	1.9	1.3	0.6	0.4	0.2	0.3	
Primary deficit	1.2	4.5	3.4	1.9	2.9	1.4	1.3	1.0	0.7	0.5	0.5	
Revenue and grants	38.9	38.9	39.1	40.0	40.3	40.4	40.3	40.2	40.1	40.0	40.0	
Primary (noninterest) expenditure	40.1	43.4	42.5	41.9	43.2	41.8	41.6	41.2	40.8	40.5	40.5	
Automatic debt dynamics 2/	-0.1	1.6	1.4	1.2	1.3	0.8	0.2	-0.1	-0.1	-0.1	-0.2	
Contribution from interest rate/growth differential 3/	-0.3	1.9	1.1	1.1	1.4	0.8	0.2	-0.1	-0.1	-0.1	-0.2	
Of which contribution from real interest rate	0.5	0.6	1.9	1.7	0.9	0.7	0.9	0.9	0.9	1.0	0.9	
Of which contribution from real GDP growth	-0.8	1.3	-0.8	-0.7	0.5	0.2	-0.7	-1.0	-1.1	-1.2	-1.2	
Contribution from exchange rate depreciation 4/	0.2	-0.4	0.4	0.1	0.0	...	...	...	...	...	...
Other identified debt-creating flows	-0.2	-0.8	-0.2	0.3	-1.0	-0.3	-0.2	-0.2	-0.2	-0.2	0.0	
Privatization receipts (negative)	-0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Recognition of implicit or contingent liabilities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Other (specify, e.g. bank recapitalization)	0.4	-0.8	-0.2	0.3	-1.0	-0.3	-0.2	-0.2	-0.2	-0.2	0.0	
Residual, including asset changes (2-3) 5/	-0.1	0.2	-0.9	-0.3	1.6	0.0	0.0	0.0	0.0	0.0	0.0	
Public sector debt-to-revenue ratio 1/	73.7	87.9	97.0	102.7	114.1	118.3	122.0	123.8	125.0	125.9	126.7	
Gross financing need 6/	5.8	9.9	9.7	8.3	11.0	11.2	11.1	11.5	11.5	11.3	11.2	
in billions of U.S. dollars	13.1	19.5	19.3	18.0	21.6	22.6	22.6	23.9	24.5	24.6	24.7	
Scenario with key variables at their historical averages 7/						47.8	50.0	52.1	54.3	56.5	58.8	0.2
Scenario with no policy change (constant primary balance) in 2013-2018						47.8	49.0	50.1	51.0	52.0	53.2	0.0
Key Macroeconomic and Fiscal Assumptions Underlying Baseline												
Real GDP growth (in percent)	3.1	-4.5	2.5	1.8	-1.2	-0.4	1.5	2.1	2.2	2.4	2.4	
Average nominal interest rate on public debt (in percent) 8/	3.9	4.3	4.0	3.7	3.6	3.4	3.4	3.5	3.6	3.9	3.9	
Average real interest rate (nominal rate minus change in GDP deflator, in	1.9	2.0	5.6	4.6	2.1	1.5	2.0	1.9	2.0	2.2	2.0	
Nominal appreciation (increase in US dollar value of local currency, in per	-7.4	9.2	-6.2	-1.7	0.7	...	...	...	...	...	...
Inflation rate (GDP deflator, in percent)	1.9	2.3	-1.6	-0.9	1.4	2.0	1.4	1.6	1.7	1.7	1.9	
Growth of real primary spending (deflated by GDP deflator, in percent)	3.5	3.3	0.3	0.3	1.9	-3.6	1.0	1.1	1.4	1.7	2.3	
Primary deficit	1.2	4.5	3.4	1.9	2.9	1.4	1.3	1.0	0.7	0.5	0.5	

1/ Indicate coverage of public sector, e.g., general government or nonfinancial public sector. Also whether net or gross debt is used.

2/ Derived as $[(r - p(1+g) - g + ae(1+r))/(1+g+p+gp)]$ times previous period debt ratio, with r = interest rate; p = growth rate of GDP deflator; g = real GDP growth rate; a = share of foreign-currency denominated debt; and e = nominal exchange rate depreciation (measured by increase in local currency value of U.S. dollar).

3/ The real interest rate contribution is derived from the denominator in footnote 2/ as $r - \pi(1+g)$ and the real growth contribution as $-g$.

4/ The exchange rate contribution is derived from the numerator in footnote 2/ as $ae(1+r)$.

5/ For projections, this line includes exchange rate changes.

6/ Defined as public sector deficit, plus amortization of medium and long-term public sector debt, plus short-term debt at end of previous period.

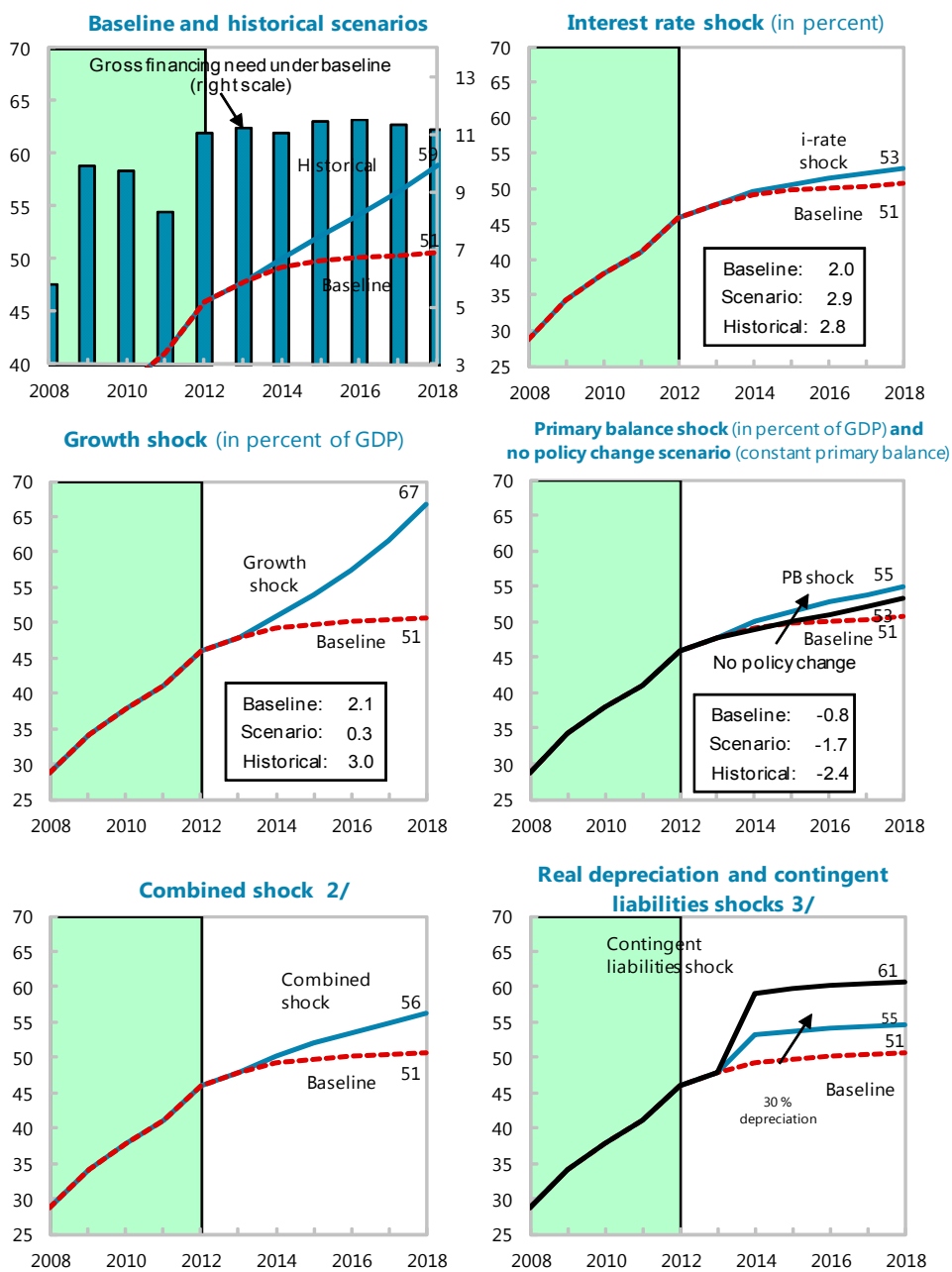
7/ The key variables include real GDP growth; real interest rate; and primary balance in percent of GDP.

8/ Derived as nominal interest expenditure divided by previous period debt stock.

9/ Assumes that key variables (real GDP growth, real interest rate, and other identified debt-creating flows) remain at the level of the last projection year.

Figure 4. Czech Republic: Public Debt Sustainability: Bound Test 1/

(Public debt in percent of GDP)



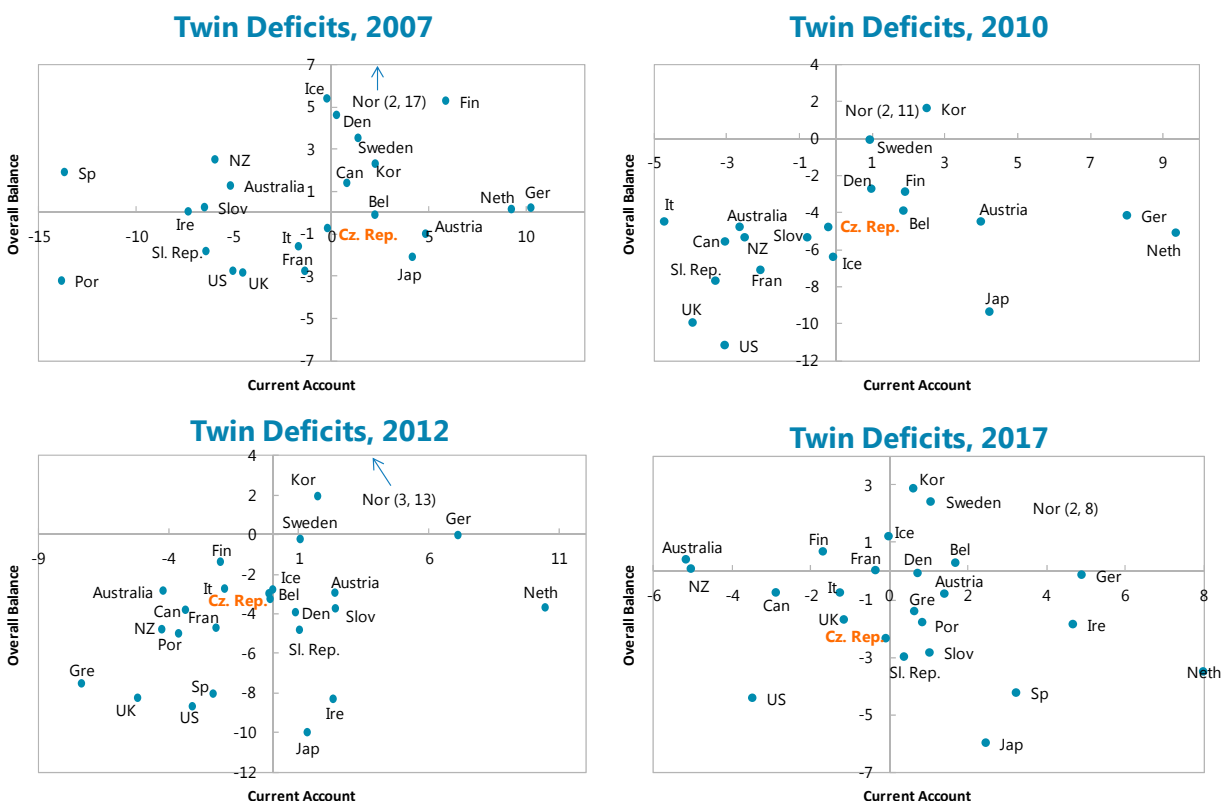
Sources: International Monetary Fund, country desk data, and staff estimates.
 1/ Shaded areas represent actual data. Individual shocks are permanent one-half standard deviation shocks. Figures in the boxes represent average projections for the respective variables in the baseline and scenario being presented. Ten-year historical average for the variable is also shown.
 2/ Permanent 1/4 standard deviation shocks applied to real interest rate, growth rate, and primary balance.
 3/ One-time real depreciation of 30 percent and 10 percent of GDP shock to contingent liabilities occur in 2010, with real depreciation defined as nominal depreciation (measured by percentage fall in dollar value of local currency) minus domestic inflation (based on GDP deflator).

Other factors

27. The likelihood of a fiscal crisis also depends on variables not directly affecting the public sector balance sheet. These include the overall condition of the economy including the availability of savings. Indeed, there is some evidence to support that countries facing ‘twin’ deficits are more likely to suffer speculative attacks, which could eventually lead to a liquidity crisis for the government. Also, high levels of private debt increase the risks of speculative attack against government paper, possibly through contingent liabilities for the government. Some countries with low public debt entering the recent crisis have experienced liquidity problems or seen the public sector balance sheet deteriorate significantly by overleveraged financial and non-financial private sectors.

28. Without large external financing needs going forward and low public financing requirements, these risks appear moderate in the Czech Republic. The fiscal position deteriorated during the crisis but has largely recovered since. At the same time, having avoided pre-crisis credit and consumption booms experienced by most economies in the region, the current account has showed a small deficit before during and after the crisis (figure 5). Small current account deficits are also projected going forward.

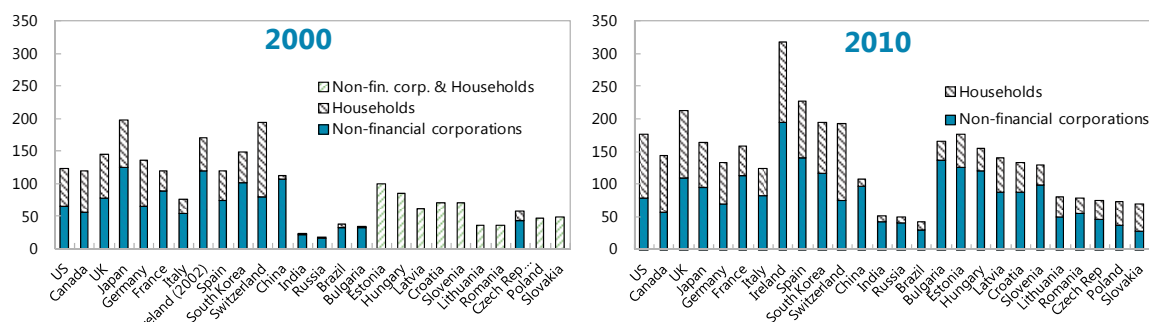
Figure 5: Overall Fiscal Balance and Current Account Balance (in percent of GDP)



Source: IMF staff calculations.

29. Similarly leverage levels for the private non-financial sector appear manageable and small by international comparisons. Notably the increase in leverage of non-financial corporations and households in the Czech Republic (34 percent as percent of GDP) was the smallest in the region where, on average, leverage levels more than doubled. Even when accounting for intercompany lending, not very prevalent in the Czech Republic, corporate indebtedness is not large by regional standards (figure 6).

**Figure 6: Private Sector Debt
(in percent of GDP)**



Source: IMF staff calculations.

C. Conclusion

30. Fiscal policy in the Czech Republic tends to be pro-cyclical even though its impact is limited by the characteristics of the country, a small open economy with a flexible exchange rate. The existing fiscal framework does not provide an adequate medium-term fiscal anchor hence delinking short-term fiscal policy formulation from clear long-term sustainability objectives. Improving the fiscal framework incorporating, among other things, a simple and credible rule linking medium-term fiscal performance with long-term fiscal sustainability will help increase the predictability and credibility of fiscal policy. In this connection it will be important for the authorities to specify their medium-term fiscal policy strategy in structural terms hence allowing automatic stabilizers to work in the short-term when deviations from macro projections may occur. This will help minimize the potential negative impact on credibility of deviations of the overall balance from its MTBF target while allowing automatic stabilizers to work during the cycle.

31. Fiscal risks of the Czech Republic appear moderate. Basic fiscal variables, sovereign asset and liability composition, and financing requirements indicate that the probability of fiscal distress is small. Furthermore, public debt, although increasing, is relatively low while budget deficits are moderate and decreasing, a fiscal consolidation is already underway with most of the adjustment having taken place, 4 percent of GDP. The financial sector appears resilient to large shocks. However, fiscal pressures associated with ageing dynamics remain sizeable and among the worst in Europe. Also, the stock of debt that has increased continuously since 1996 is expected to continue to increase albeit at a more moderate pace over the medium-term. A negative fiscal shock, without the adoption of corrective measures, could cause a step increase in public debt.

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Appendix I. Framework for Assessing Sovereign Risks

As introduced in the Fiscal Monitor (IMF 2010, 2011) and Cottarelli (2011), the risk framework followed here is based on a comprehensive view of all factors that affect the probability that the move of certain fiscal indicators into dangerous territory, or other shocks, could trigger a negative market response. These indicators can be grouped into (i) basic fiscal variables; (ii) long-term fiscal indicators; and (iii) asset and liability management indicators.

The choice of indicators identified in Baldacci et al. (2011a) measures fiscal sustainability risks under the medium-term scenario of the World Economic Outlook baseline projections. These indicators measure solvency risks based on current deficit and debt levels, and projected growth-adjusted interest rate on public debt. Indicators of long-term budget pressures associated with demographic aging, such as projected change in health care and pension expenditures, are also included. In addition to the solvency risk outlook, the framework also covers risks to fiscal sustainability stemming from sovereign asset and liability composition and financing requirements.

The choice of indicators is subject to operational constraints and avoids using financial market indicators. These indicators already incorporate an assessment of risk to the baseline (including both rollover risks and risks from potential shocks to the baseline), they also incorporate the perceived probability of government's accessing non-market financing to avoid insolvency and they tend to lag rather than lead the deterioration in fiscal fundamentals.

The indicators are presented against a threshold that, when exceeded, indicates a higher risk of fiscal stress. This is defined as a crisis episode that encompasses public debt default as well as near-default events and severe deterioration in solvency risk outlook. The thresholds are estimated in Baldacci et al. (2011b) on the basis of a univariate procedure that maximizes the likelihood of predicting a fiscal crisis. Each of the nine variables used has different predicted power defined as one minus the total error and it is a measure of the statistical power of the variable. The table below lists all the variables, their respective thresholds and their signaling power in an index form so that the total sum is 100

Threshold and Relative Weight of Fiscal Indicators for Advanced Economies

Indicator	Threshold	Signaling weight
Basic Fiscal Variables		
r - g (5-year average)	3.6	14.9
Cyclically adjusted primary balance	72.2	7.3
General government gross/net debt	-4.2	9.4
Long-Term Fiscal Trends		
Total fertility rate	0.64	2.4
Old age dependency ratio	36.0	4.5
Long-term projections of the change in public pension	6.2	9.6
Long-term projections of the change in public health expenditure	4.5	9.4
Asset and Liability Management		
Current gross financing need	17.2	24.6
Share of short-term debt as a ratio of total debt	9.1	2.8
Debt held by non-residents as a proportion of total debt	83.6	10.1
Weighted average maturity of general government debt	3.9	5.0

Source: Assessing Fiscal Stress, Baldacci et al., 2011b

Indicator	Comments	Data Source
Basic Fiscal Variables		
r - g (5-year average)	Imputed interest rate on general government debt, deflated by the GDP deflator, minus real GDP growth rate; five year forward moving average	WEO
Cyclically adjusted primary balance	Expressed as a percent of potential GDP	WEO
General government gross/net debt	Expressed in percent of GDP. Net debt used for Japan and Canada, gross debt for all other countries	WEO
Long-Term Fiscal Trends		
Total fertility rate	The average number of children per woman	UN
Old age dependency ratio	30 years ahead projections of the ratio of the population over 65, divided by the number of adults	UN
Long-term projections of the change in public pension expenditure	Expressed as in percent of GDP, the change in projected expenditures 40 years ahead relative to the base year	Staff estimates
Long-term projections of the change in public health expenditure	Expressed as in percent of GDP, the change in projected expenditures 40 years ahead relative to the base year	staff estimates
Asset and Liability		
Current gross financing need	Projected general government overall balance plus general government debt with a maturity of one year or less; expressed in percent of GDP	WEO, Bloomberg
Share of short-term debt as a ratio of total debt	Short-term debt is defined as general government debt with a maturity of one year or less. Total debt is general government gross debt	WEO, Bloomberg
Debt held by non-residents as a proportion of total debt	Includes both domestic and foreign currency issued debt; expressed as a proportion of total debt	BIS
Weighted average maturity of general government debt	Historical data calculated by staff; current data available from Bloomberg	Bloomberg, Dealogic

Source: Indicators of Fiscal Vulnerability and Fiscal Stress, Baldacci et al., 2011a