

**FOR
AGENDA**

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April 20, 2010

To: Members of the Executive Board

From: The Secretary

Subject: **Bulgaria—Selected Issues**

This paper provides background information to the staff report on the 2010 Article IV consultation discussions with Bulgaria (SM/10/82, 4/12/10), which is tentatively scheduled for discussion on **Wednesday, May 5, 2010**. The Secretary's Department has been notified by the authorities of Bulgaria that their explicit consent is required prior to the publication of Board documents on Bulgaria. At the time of circulation of this paper to the Board, the Secretary's Department has not received a communication from the authorities indicating whether or not they consent to the Fund's publication of this paper; such communication may be received after the authorities have had an opportunity to read the paper.

Questions may be referred to Mr. Bakker, EUR (ext. 34649).

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BULGARIA

Selected Issues

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Approved by the European Department

April 16, 2010

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I. ESTIMATING POTENTIAL GROWTH AND OUTPUT GAPS IN AN EMERGING ECONOMY: THE CASE OF BULGARIA¹

A. INTRODUCTION

1. **The current economic crisis raises the question whether potential output growth Bulgaria in the coming years could be markedly lower than that during the boom years.** The current recession was preceded by an investment boom in construction, real estate and financial sectors. Now that the boom in these sectors has ended, the significant decline in investment could have large negative effects on potential output. Moreover, it will take considerable time for the excess labor and resources to be absorbed by other sectors, which suggests that the natural rate of unemployment may rise and remain higher.
2. **Economic crisis aside, the estimates of potential output based on conventional methods (detrending methods, production function approach) are often subject to various statistical problems.** They are sensitive to methods as well as sample selections used for estimations. Estimates based on the commonly used HP filters and production function approach can differ significantly, depending on sample period, detrending parameters, and assumptions about the initial capital stock and the capital depreciation rate (Cerra and Saxena, 2000; Zhou, 2003).
3. **For emerging economies including Bulgaria, the estimation of potential output is further hampered by short data periods and measurement problems with capital stocks.**² Linear time series methods (e.g. VAR model, multivariate model) restrict parameters to be constant, and are therefore also not appropriate for the emerging Eastern European countries that have gone through significant structural changes as well as boom and bust cycles since 1992, most recently during 2005–09.
4. **To overcome some of these problems this chapter presents a simple method for estimating Bulgaria's potential growth and output gaps.** Assessments of potential growth and output gaps are particularly important, since they serve as crucial inputs for assessing the stance of fiscal policies. Instead of estimating the level of potential output, we estimate potential growth, based on an estimated capital-output ratio and assumptions about future employment and productivity growth. We then identify a base year when the economy is at its potential (i.e., the output gap is zero) by assessing inflation and current account developments (i.e., the internal and external balances). The level of potential output and output gaps are calculated with the estimated potential growth and the selected base year. Unlike the conventional methods discussed above, our estimated output gaps depend only on potential growth but not on sample selections.

¹ Prepared by Jianping Zhou.

² For example, annual real GDP series are available for 1996–2009, while quarterly GDP data are available only after 2002 Q1. Similar data problems also exist in other emerging EU countries, and for countries with data going back further, the quality of the data for early years is often questionable.

B. THE METHOD

Estimating Potential GDP Growth

5. The estimation of potential output growth is based on the trend growth of (i) the capital stock; (ii) the labor input based on an assumed labor participation rate and working-age population growth; and (iii) TFP estimates based on a simple two-factor Cobb-Douglas production function.

6. **The capital stock is estimated based on a capital/output ratio that is derived from a simple profit optimization solution.** Since the National Statistics Institute (NSI) does not publish data on the capital stock, they are estimated based on the commonly used permanent inventory method (for example, Ganey, 2005). But we differ from many including Ganey (2005) in estimating the *initial* capital stock. Instead of following the commonly used approach which assumes that the initial capital stock is equal to the gross investment in the initial year (or a multiple of that, as in Ganey, 2005), we estimate the initial capital stock based on a simply analytical framework, in which a profit maximization based on a two-factor Cobb-Douglas production function

$$\Pi(K) = AK^{1-\alpha}L^\alpha - wL - rK - \delta K,$$

determines the capital-output ratio as follows:

$$\frac{K}{Y} = \frac{1-\alpha}{\delta+r},$$

where α is output elasticity of labor, δ is capital depreciation rate, and r represents the real interest rate. Based on the assumptions of $\alpha = 0.6$, $r = 0.06$, and $\delta = 0.1$, the estimated capital-output ratio is about 2.5 in 2000, in line with the existing estimates for OECD countries and for Bulgaria (Ganey, 2005). The assumed depreciation rate of 10 percent is slight higher than the usual assumption for OECD countries (about 8 percent), but is assumed to capture the significant economic transformation that took place in Bulgaria when new investment may have simply replaced the old capital stocks (for example, inactive production facilities).

7. **The estimated values for capital stock are presented in Table 1.** The implied capital output ratios range from 2 to 2.5, and show a rising trend during the recent investment boom.

Table 1. Estimates of Capital Stock, 2000-2009 1/

(In billions of leva at 2001 prices, unless otherwise indicated)

Year	Gross capital formation	GDP	Capital stock	Capital-output ratio
2000	5.4	28.9	72.1	2.5
2001	6.4	30.0	71.3	2.4
2002	6.4	31.4	70.6	2.3
2003	7.6	32.9	71.1	2.2
2004	8.7	35.1	72.8	2.1
2005	11.2	37.3	76.7	2.1
2006	13.4	39.7	82.4	2.1
2007	16.3	42.1	90.4	2.1
2008	18.5	44.7	99.8	2.2
2009 (est.)	12.3	42.4	102.2	2.4

Sources: NSI; IMF staff estimates.

1/ Assuming capital-output ratio equals to 2.5 in 2000, and capital depreciation rate of 10 percent for 2001-09.

8. **The decomposition of growth suggests that growth has been increasingly driven by capital and labor inputs while the contribution of TFP growth declined steadily since 2002.** The average TFP growth for the period of 2001–08 is about 2.5 percent (see Table 2). Our estimates measure the labor inputs with hours worked (national account based), though the results based on employed workers turned out to be very similar (2.6 percent). Based on the trend growth in employment and in TFP, the potential growth is about 5 percent during this period, in line with the estimate by the Bulgarian National Bank (BNB, 2009).

Table 2. Sources of Growth, 2001-2009

(Annual percentage change)

Year	GDP growth	Contribution of labor 1/	Contribution of capital	Growth of TFP 2/
2001	4.1	0.0	-0.5	4.5
2002	4.5	0.1	-0.4	4.8
2003	5.0	1.4	0.3	3.3
2004	6.6	2.4	0.9	3.3
2005	6.2	1.4	2.1	2.7
2006	6.3	1.8	3.0	1.5
2007	6.2	2.0	3.9	0.3
2008	6.0	1.9	4.2	-0.1
2009 (est.)	-5.0	-1.7	0.9	-4.3
2001-2008	5.6	1.4	1.7	2.5
2001-2009	4.4	1.0	1.6	1.8

Sources: NSI; IMF staff estimates.

1/ Labor inputs are measured with hours worked.

2/ Solow's residual, using labor share of 0.6 and capital share of 0.4.

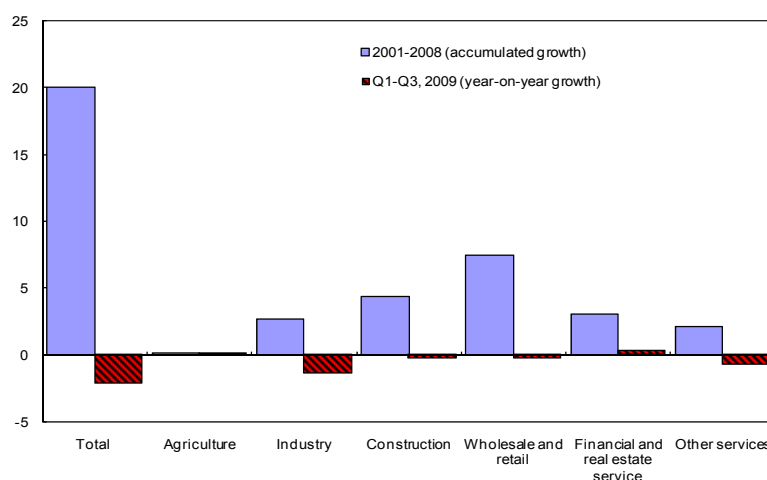
Potential Growth 2009–15

9. **Growth declined sharply in 2009 after the economy was hit hard by the global economic and financial crisis.** Capital inflows dropped from a peak of 44 percent of GDP in 2007 to less than 10 percent of GDP in 2009. As a result, investment fell by nearly 30 percent, after rising more than 20 percent annually during the previous two years. Employment also fell and while the unemployment rate rose rapidly.

10. **Can Bulgaria return to the high potential growth rates of 2001–08?** Growth during the boom years was driven by large capital inflows that fueled strong growth in the non-tradable sector. As capital inflows are likely to stabilize at a level well below that of the boom years, and growth in the non-tradable sector is likely to remain weak at best, growth would only be high if the tradable sector takes over as an engine of growth. More specifically:

- The end of the investment boom and sharply reduced capital inflows would imply much lower investment and hence lower potential growth in the coming years.
- With lower investment, the robust employment growth during 2001–08 would be difficult to achieve. Much of the strong employment growth was driven by strong growth in the non-tradable sector. Total employment rose by 20 percent during this period, of which 15 percent was the contribution from the construction, real estate, wholesales and financial service sectors (Figure 1).
- Of course, lower investment could be offset by higher TFP growth. But improving TFP growth would require supply side reforms.

Figure 1. Bulgaria: Employment Growth and Sectoral Contributions
(In percent)



Source: NSI; IMF Staff calculations.

1/ The number of hours worked, national account based.

11. **The potential output growth rate in the coming years could be markedly lower than that during 2001–08.** The government's 2009–12 Convergence Programme envisages a potential growth of about 3 percent in 2009–12. Staff estimates indicate that achieving this would require a rapid reversal of the trending decline in TFP growth, specifically, a TFP growth of 2.5 percent and a potential employment growth of about 2 percent, which is close to that during 2001–08 and may be difficult to achieve for the reasons discussed earlier. Staff's current scenario assumes a gradually increased trend growth in both full employment (and a return to the NAIRU of 5 percent) and TFP growth, with potential growth rising to 3.5 percent in 2014–15. Potential growth for the period 2009–15 is about 2.6 percent (Table 3), slightly lower than the official estimates (BNB, 2009).

Table 3. Estimates of Potential Output Growth, 2009–2015

(Annual percentage change)

Year	Potential GDP growth 1/	Contribution of labor 2/	Contribution of capital	Trend growth of TFP
2009	1.5	0.5	0.7	0.2
2010	1.5	0.8	0.1	0.6
2011	2.0	0.7	0.4	0.9
2012	3.0	0.9	0.5	1.6
2013	3.2	0.9	0.7	1.6
2014	3.4	0.9	0.9	1.6
2015	3.6	0.9	1.1	1.6
2001–2008	5.0	1.5	1.0	2.5
2009–2015	2.6	0.8	0.6	1.2

Sources: NSI; IMF staff estimates.

1/ Based on labor share of 0.6 and capital share of 0.4.

2/ Full employment measured by hours worked.

12. **Potential growth is set to decline further in the longer term.** Bulgaria faces a serious problem of aging population. Its population is projected to decline by 28 percent between 2008 and 2060, while the old age dependency ratio would exceed 60 percent in 2060.³ This is expected to reduce its labor force significantly by more than 25 percent in the next 50 years. The 2009–12 Convergence Programme foresees a steady decline in potential growth to 0.3 percent in 2050, even with the labor participation ratio raised to 70 percent.

Estimating Output Gaps

13. **As the first step, we choose 2005 as the base year when the economy is at its potential and the output gap is closed.** This is based on the developments in both internal and external imbalances. Specifically, in 2004 the inflation in the non-tradable sector reached its lowest since 2001 and the current account deficit was at a reasonable 6.6 percent of GDP. Both inflation and current account deficit began to rise in 2005 and large imbalances

³ Eurostat News Release, 119/2008.

emerged after 2005. Output gap estimates using the HP filter also suggest that 2004 or 2005 was the turning point of the recent economic cycle in Bulgaria, and results were not sensitive to the detrending parameters or the end-points of the sample (Figure 2).

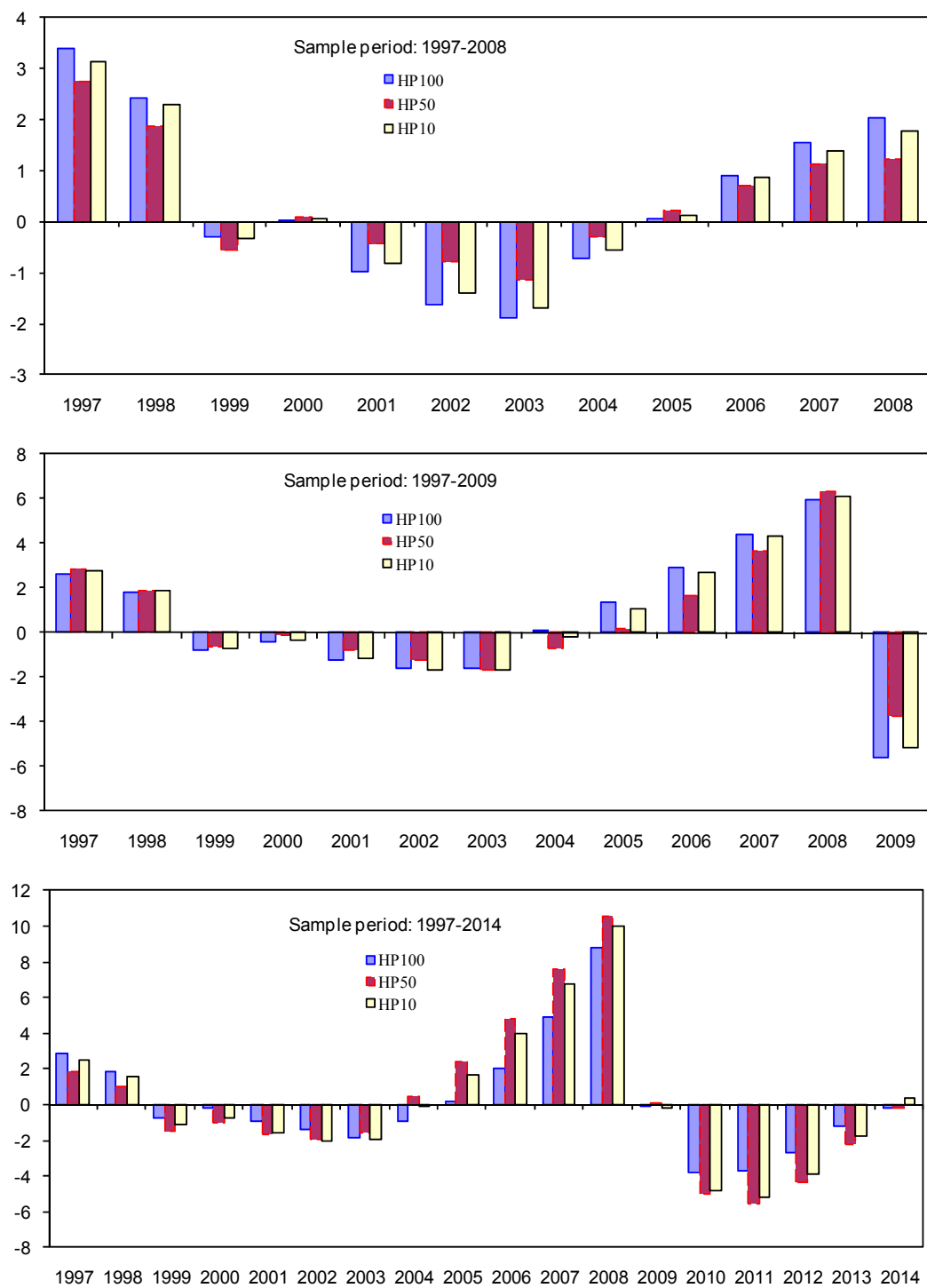
14. **Output gaps are calculated based on the potential growth rates and assuming potential output equals actual output in 2005.** The estimates suggest the economy was about 3.5 percent above potential in 2008 and 3.2 percent below potential in 2009 (Figure 3). The authorities' output gap estimates in the Convergence Program were 5.8 percent for 2008 and -2.7 percent for 2009. Output gap estimates assuming a zero gap in 2004 are also presented (Figure 4) and the results are similar, although in this case the output will return to its potential in 2014 instead of 2015.

C. CONCLUSIONS

15. **Potential output growth in the coming years could be markedly lower than that during the boom years.** The current downturn was preceded by an investment boom in construction, real estate and financial sectors. Now that the boom has ended, it may take considerable time for the excess labor and resources to be absorbed by other sectors, in particular by the export sector. This suggests that in the next few years, the natural level of rate of unemployment will rise and remain higher, and the full employment level is likely to decline. To sustain potential growth at about 3 percent, as set in the government's recent convergence program, would require a rapid reversal of the recent trend decline in TFP growth and a steady increase in employment growth to close to 2 percent. This would be challenging and require significant improvements in labor productivity and competitiveness, as well as reforms to further improve labor mobility and participation.

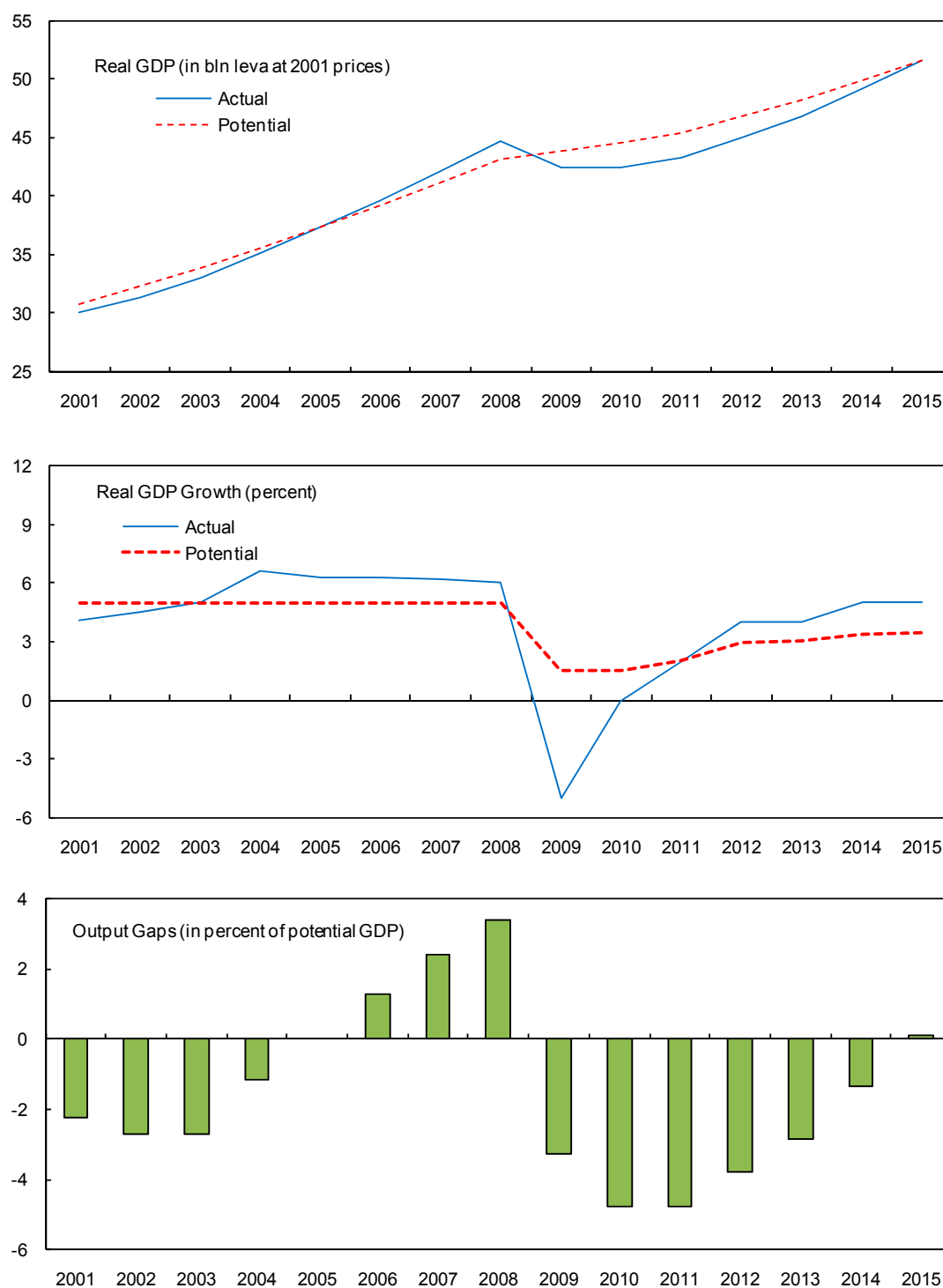
16. **Our output gap estimates suggest that it could take about five years before the output in Bulgaria returns to its potential.** Large output gaps emerged in 2007-08 as a result of the domestic demand boom. The end of the boom in end-2008 and the large negative output gaps in the next 3 years implies a slack economy and downward pressures on core inflation.

Figure 2. Bulgaria: Estimates of Output Gaps based on the HP filter



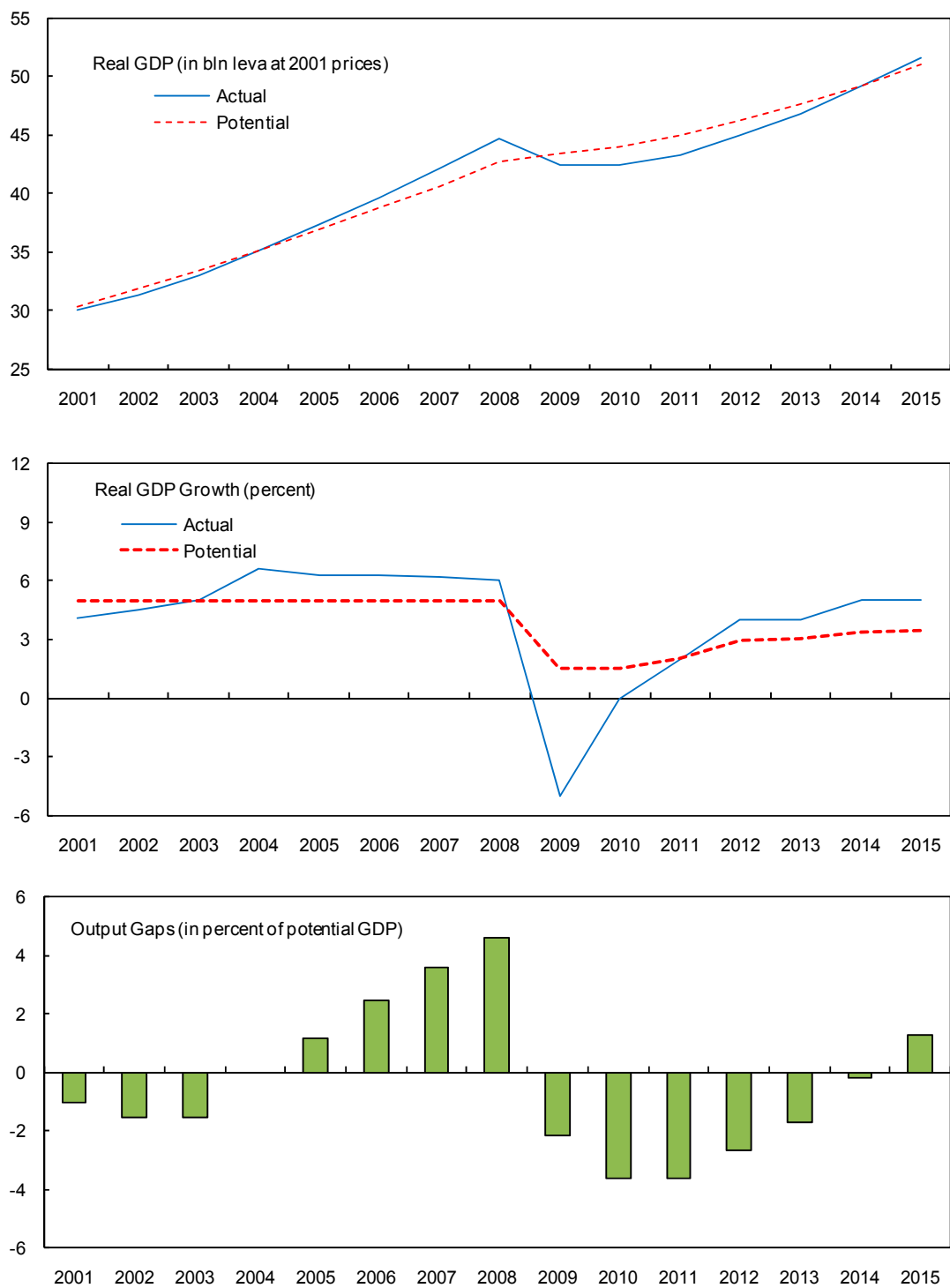
Source: Staff Estimates.

Figure 3. Bulgaria: Potential Output, Growth, and Output Gaps
(Based on output gap = 0 in 2005)



Source: NSI; and IMF staff estimates.

Figure 4. Bulgaria: Potential Output, Growth, and Output Gaps
(Based on output gap = 0 in 2004)



Source: NSI; and IMF staff estimates.

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II. BULGARIA: FISCAL POLICY CHALLENGES¹

A. INTRODUCTION

1. **As recognized by the government, Bulgaria's fiscal situation is challenging, as the revenue boom has come to an end, while expenditure pressures are considerable.** Its pre-crisis revenue boom, which was fuelled by higher receipts on goods and services on the back of Bulgaria's rapid domestic demand growth, has halted. Returning to pre-crisis revenue ratios will be a major challenge, not only because the economy is expected to recover slowly but also because the growth pattern will need to shift, with less contribution from domestic demand and more contribution from the external sector, which will result in lower tax revenues. At the same time, financing pressures on the social security system have risen, reflecting sharp pension increases in recent years, cuts in social security contribution rates, and structural problems in the health care system. The pressures are projected to mount over the long run as a result of the impact of aging. Moreover, sluggish absorption of EU funds has left the large agenda to upgrade Bulgaria's public infrastructure unfinished, with much need for public investment going forward.

2. **In this environment, fiscal policy has to make difficult choices between sometimes conflicting objectives.** These goals include boosting competitiveness, lowering the size of government and level of taxation, ensuring the sustainability of the security systems, maintaining medium-term structural budgetary surpluses, improving the quality of public services, and the efficiency of their provision. Bulgaria's past prudent stance of fiscal policy has put it in a relatively comfortable position to address these challenges.

3. **This paper highlights these fiscal policy challenges, their trade-offs, and discusses policy options.** Section II analyses Bulgaria's revenue boom and bust and the challenges with maintaining the revenue ratios. Section III reviews the developments and pressures having emerged in the social security systems. Section IV highlights areas for possible expenditure cuts but identifies also new pressures. Section V discusses the fiscal policy options for supporting competitiveness. And lastly, Section VI brings these challenges together with a view to back the currency board arrangement and provides options for institutional fiscal arrangements in its support. Section VII concludes.

¹ Prepared by Andrea Schaechter.

B. POLICY CHALLENGE 1: MAINTAINING REVENUES

Developments

4. **During the economic booms years, Bulgaria's public finances benefited from a sharp increase in revenue.** Real total revenue surged by about 51 percent from end-2002 to 2007 (Figure 1). While this fell short of the even sharper increases in the Baltics and Romania, Bulgaria experienced the strongest rise in its revenue-to-GDP ratio among the new EU member states of about 4½ percent of GDP. Tax revenue rose rapidly, in particular tax receipts on goods and services, reflecting the strong domestic demand as well as increases in excise rates on tobacco and fuel in line with EU requirements. About a third of additional revenue came from higher grants in light of EU membership. Part of the revenue increase was offset, however, by lower social security contributions as rates were cut by 6 percentage points from 2002 to 2007 (for the pension and unemployment funds) and a further 2.4 percentage points in 2009.²

5. **In 2009, revenues slumped.** The drop in tax and nontax revenues (by 8.2 percent) was partly compensated by higher grants (20 percent).³ Most of the revenue losses came from tax-intensive activities and sectors, in particular, lower VAT on imports and consumption as well as reduced profit taxes. Only the Baltics experienced higher real and nominal losses in revenue in 2009 than Bulgaria.

6. **Bulgaria relies heavily on indirect taxes.** With 55 percent of total taxation (including social security contributions) it has not only the highest share of indirect taxes in the new member states but also in the EU (Figure 2). The reliance on this type of tax has sharply increased in the pre-crisis years. The VAT (standard rate of 20 percent) is applied to a broad tax base with fewer exceptions than in other EU countries and a reduced VAT rate (7 percent) was not introduced until 2007 (and applies to a narrow tax base only).⁴ As a result, Bulgaria has a high VAT C-efficiency, i.e. a high share of VAT revenue collection in relation to consumption (Figure 3).

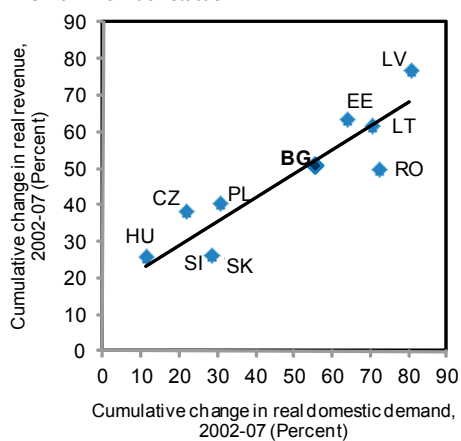
² In 2009 the rates were: 18 percent Pension Fund (Pillar I); 5 percent Additional Obligatory Pension Insurance for those born after 1959 (Pillar II); 8 percent National Health Insurance Fund; 3.5 percent General Disease and Maternity Fund; 1 percent Unemployment Fund; 0.4 to 1.1 percent Accidents at Work and Occupational Disease Fund; 4.3 percent Teacher's Pension Fund and 0.1 percent Guaranteed Receivables Fund.

³ In the Baltics, GDP collapsed even more than revenues, so that the revenue (including grants)-to-GDP ratios increased in 2009.

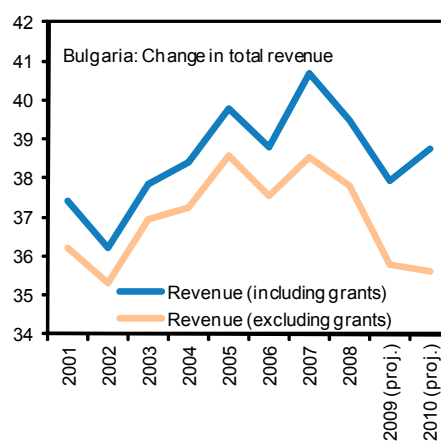
⁴ The reduced VAT rate of 7 percent applies only to hotel services (when they form part of a tourist package); and the zero rate is applicable to exports, intra-community deliveries and international transportation, and exemptions apply for financial, health, educational, religious, cultural, and postal services.

Figure 1. Revenue Developments in Bulgaria and the EU New Member States

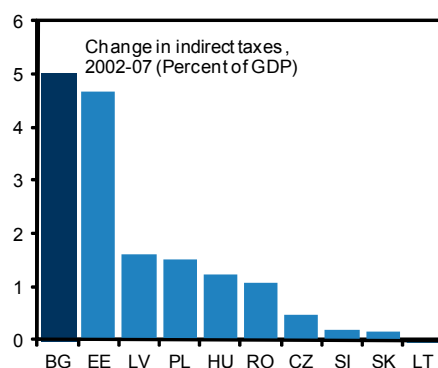
Bulgaria experienced a revenue boom like many EU new member states ...



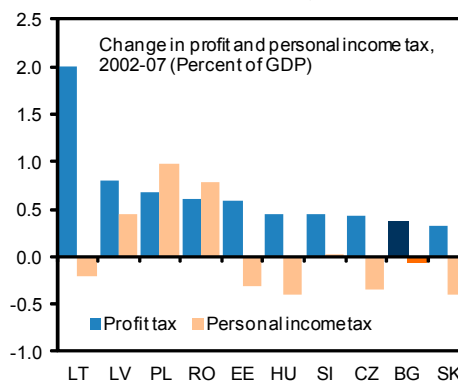
... even when accounting for the increase in grants linked to its 2007 EU accession.



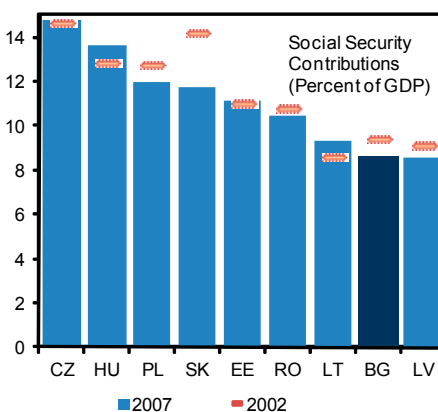
Most of its revenue surge was from indirect taxes as domestic demand boomed ...



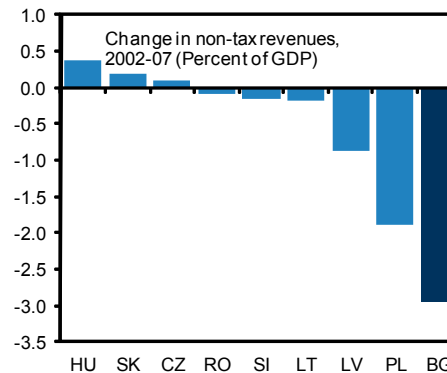
... while profit and personal income tax revenue was rather flat, as it was in many other NMS.



Due to reduced SSC rates, revenue from this source fell in Bulgaria below most other NMS ...

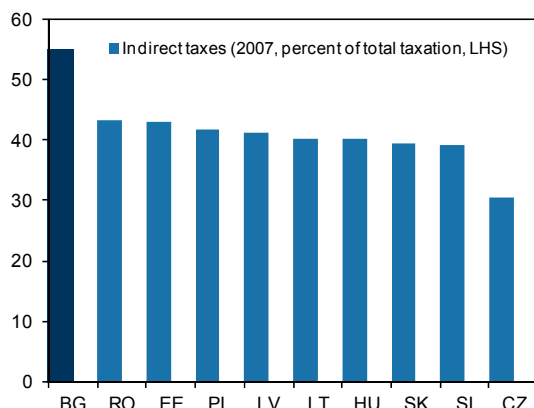


... and non-tax revenues also dropped strongly.



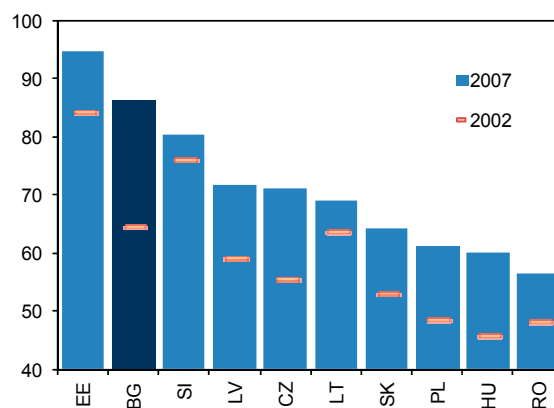
Sources: Bulgarian Ministry of Finance; IMF World Economic Outlook; and IMF Government Finance Statistics.

Figure 2. The Role of Indirect Taxation



Source: European Commission, DG TAXUD, *Taxation Trends in the European Union*, 2009 edition.

Figure 3. VAT C-Efficiency (Percent) 1/



Source: Sancak, Velloso and Xing (2010).
 1/ VAT C-efficiency = (Revenue from VAT / Consumption) / Standard rate * 100

7. **Tax compliance continues to be low despite substantial tax reforms.** Bulgaria still suffers from large tax avoidance which is in part linked to its large shadow economy. While difficult to capture, a few indicators reflect the degree of tax avoidance (Center for the Study of Democracy, 2009): about 28½ percent of employees surveyed in September 2009 indicated that their social security contributions were based on a lower official remuneration than they were actually paid (this is up from 21¾ percent in March 2004; e.g. in the agricultural sector about 90 percent of employees pay social security contributions based on the minimum social security threshold);⁵ and 13 percent indicated that they receive a higher remuneration in their primary employment than stated in their contract. On the other hand, the simplification in the tax system, including the introduction of the flat taxes for corporate and personal income (at tax rates of 10 percent from January 1, 2007 and 2008, respectively) appears to have brought some money “out of the shadow.” The corporate income tax-to-GDP ratio increased by 0.6 percentage points during 2007–08 despite a reduction in the tax rate, in an environment of relatively stable economic growth.⁶ Moreover, the number of registered tax payers increased (by 33 percent for VAT between 2007–09 and 14 percent for profit tax).

8. **Reforms have aimed to improve tax compliance.** Long-standing revenue administration reforms have improved the efficiency of revenue collection. As the number of

⁵ The threshold is even lower with agricultural (tobacco) producers paying contributions based on one half (one quarter) of the minimum insurance threshold. This practice was introduced in 2002; before they paid social security contributions as self-employed.

⁶ The impact of introducing the flat tax on personal income is more difficult to judge given not even two full years of observations under “normal circumstance” (as the economy and wage growth slowed rapidly in 2009). However, it seems that the lowering of the average personal income tax rate has, at a minimum, outweighed any better tax compliance as the tax-to-GDP ratio dropped by 0.2 percentage points in 2008 despite an acceleration of wage growth.

field offices was reduced from 340 in 2002 to 27 in 2009 and staff reduced by 25 percent over the same period, revenue per staff tripled and collection costs (0.8 percent of revenue) were kept at the lowest level among EU new member states (see World Bank, 2009a).⁷ Most recent steps toward better tax compliance include intensified onsite controls particularly of large taxpayers, the restructuring of the National Revenue Agency and the customs agency as well as the linking of their information systems. Moreover, in the 2010 budget the minimum insurance income for self-insured and agricultural and tobacco producers was raised as the vast majority paid social security contributions at the minimum level despite strong indications of higher incomes.

Policy Options

9. **How can Bulgaria sustain its relatively high revenue ratio?** The downturn has affected to a large degree tax-intensive activities and sectors, in particular imports and consumption, and reversed the pre-crisis windfall revenues. As Bulgaria emerges from the crisis, its composition of growth is likely to change with a shift toward more export-led growth. Thus, its great reliance on indirect taxes and low tax compliance will be key challenges.

10. **Strengthening further tax administration and bringing economic activities out of the shadow are long-term requirements.** A number of structural measures have been proposed of which many are in the process of being implemented.⁸ They include a greater focus on large taxpayers using a more flexible risk-based approach and covering more large tax payers in the specific directorate.⁹ Resources for such a refocus could be freed, for example, by moving away from the 100 percent of VAT refund checks. At the beginning of 2010, the NRA changed the criteria for large taxpayers, which would more than double the number of enterprises to be considered in that category compared to 2009.¹⁰ Eventually a shift toward greater voluntary compliance is needed, which includes improving the customer service and reducing the compliance costs of those who are willing to pay. More generally, intensifying efforts to reduce the large share of the shadow economy will be key to create a sustainable revenue base.

⁷ The revenue administration reforms were co-financed by the World Bank and included simplified tax laws and procedures, integrated revenue collection for taxes and social security contributions, improved taxpayer/contributor services, increased use of e-filing and e-payment, more focus on large and medium-size taxpayers and contributors (see World Bank, 2009a). The IMF also provided technical assistance.

⁸ The IMF's Fiscal Affairs Department provided technical assistance.

⁹ Under the current definition large tax payers dealt with by the directorate accounted only for 28 percent (2009) of total revenue, while typically large taxpayer offices capture between 60-80 percent of revenues.

¹⁰ The criteria are: (i) more than BGN 20 million sales income (previously BGN 30 million), (ii) at least 120 employees (before 250), (iii) more than BGN 2 million of paid taxes and insurance payments, and (iv) more than BGN 2 million refunded taxes. To be considered a large taxpayer two of the above criteria need to be met. These changes put 1,430 companies in the category of large taxpayers compared to 680 in 2009 providing about 40 percent of revenues.

11. The room to induce better tax compliance through lower rates appears low.

Bulgaria's corporate and personal income tax rates are already the lowest in the EU and there is little space to lower them further without reducing tax receipts. Experience with the cuts in the rates for social security contributions (in 2006 and 2007)¹¹ and personal income tax (in 2008) are indicative that they have not been self-financing, neither through better compliance nor greater economic activity. The two percentage point cut in the contribution rate to the pension fund in 2010 is expected to create revenue shortfalls of at least BGN 300 million. Lowering the VAT rate would likewise lower tax receipts.

12. Thus, maintaining the revenue ratio calls for reassessing the tax rates and tax structure also in light of other policy objectives. As lower VAT and SSC rates would not be revenue neutral and would not be consistent with the government's medium-term structural budget surplus target, offsetting adjustments would have to be considered on the expenditure side (see Section III), in particular as regards entitlement reform to ensure the sustainability of the social security systems. An alternative option would be in principal to change the tax structure in a revenue neutral way. Economic theory and model simulations indicate that a revenue neutral shift from direct to indirect taxes (or a shift from labor to consumption taxes) can be growth and employment-enhancing, in particular when the tax burden on labor is relatively high and hinders competitiveness and a large share of work is undeclared.¹² This is the case for Bulgaria. Moreover, consumption taxes seem to be better complied with than social security contributions and tend to provide a more stable tax basis over the medium term. However, a shift toward indirect taxation, while at the same time lowering direct taxation, would further raise Bulgaria's reliance on indirect taxes and it is unclear whether such a shift would still have the envisaged effects. Model simulations by the European Commission for Bulgaria (D'Auria et al., 2009) indicate that the effect is relatively small. A reduction in labor taxes by 1 percent of GDP and an increase in consumption taxes by the same amount (under the assumption of benefit and transfer indexation to consumer prices) is estimated to raise GDP in Bulgaria by about 0.35 percent over 20 years. This compares to up to about 0.9 to 1.1 percent in other countries where labor taxes are much higher (France, Italy, and Poland) (see also Section IV for the role of tax policy for Bulgaria's competitiveness).¹³ Against this backdrop, Bulgaria may need to consider an increase in tax rates (VAT, income or profit) if no sufficient adjustment on the expenditure side can be realized.

¹¹ Social security contribution rates were lowered by 6 percentage points in 2006 and another 3 percentage points in 2007. As a result, social security revenues declined compared to 2005 by 1.1 percentage point of GDP.

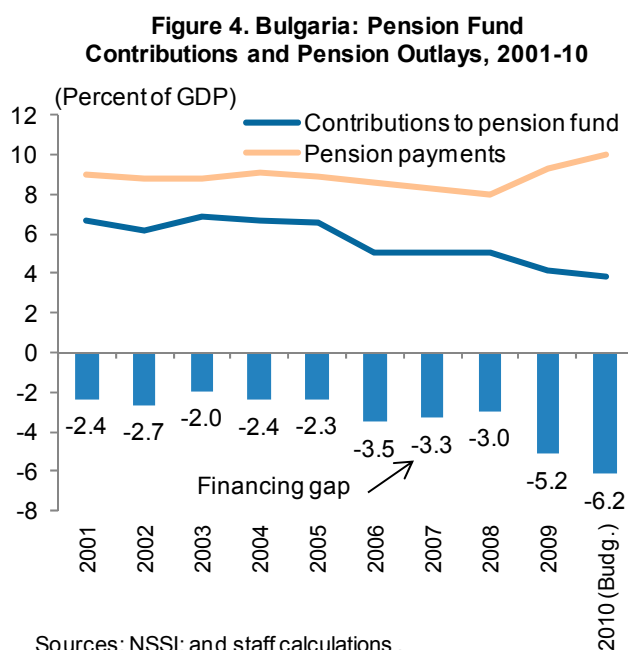
¹² A shift from labor taxation to VAT affects the economy through several channels. It broadens the tax base which allows lower tax rates to obtain the same amount of revenues. Moreover, an increase in VAT that is translated into consumer prices reduces transfer payments and could encourage greater labor supply. At the same time lower labor taxation reduces real labor cost in the presence of nominal rigidities. The latter effects are only temporary, however, until nominal wages and transfer payments adjust.

¹³ Over the medium term also other revenue sources should be contemplated, including a "green tax."

C. POLICY CHALLENGE 2: ENSURING THE SUSTAINABILITY OF THE SOCIAL SECURITY SYSTEM

Pension System

13. **Recent changes in pension system parameters have put significant pressure on Bulgaria's pension finances.**¹⁴ Until 2008 budget transfers to close the financing gap of the pension fund had averaged about 3 percent of GDP. This increased to about 5 percent of GDP in 2009 and for 2010 the budget foresees a transfer of more than 6 percent of GDP (Figure 4).¹⁵ While this is partly a result of the recession, it also reflects a number of policy changes. First, pensions were increased strongly. In addition to the increase by 9 percent under the Swiss indexation rule from July 1, 2009 the minimum pension was raised by 10 percent from January 1, 2009, the weight of each year of insurance contribution in the pension formula was raised from 1 percent to 1.1 percent as of April 1, 2009, and the maximum pension was raised by about 40 percent as of April 1, 2009. These measures are estimated by the NSSI to have raised pension payments by about 17 percent in 2009. At the same time, the compulsory pension contribution rate was lowered from 22 percent to 18 percent. In combination with the economic downturn this has reduced pension contributions by over 11 percent.



14. **The policy changes will have a medium-term impact.** With the pension contribution rate lowered by another 2 percentage points in 2010, the financing gap is expected to widen even with a general pension freeze in 2010 (and a 0.5 percent of GDP increase in special pensions). The budget foresees a gap of 6.2 percent of GDP in 2010. Estimates by the National Social Security Institute (NSSI) indicate that this gap would

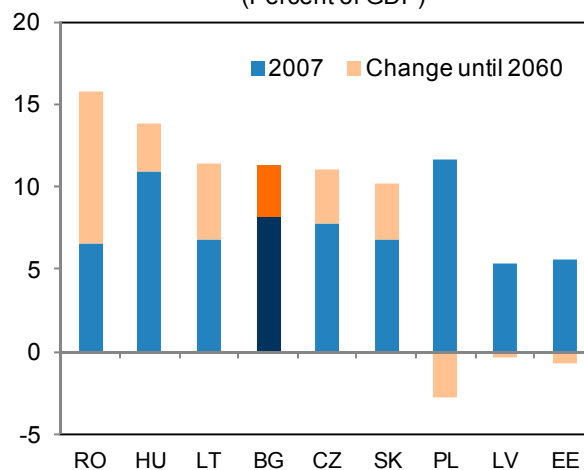
¹⁴ For a description of the Bulgarian pension system see Vassilev et al. (2009).

¹⁵ Since 2009, the central budget is required to transfer 12 percent of the insurable income of all insured pension to the pension fund. It also covers the deficit through budgetary transfers. Until 2009, the pension fund had relied only on the latter. As long as the pension fund runs deficits, there is de facto no change for its finances. However, it is assured the 12 percent transfer also for times when less would be needed for its finances allowing it to build up reserves.

remain broadly unchanged until 2012, if pension increases return to the indexation rule for 2011-12. This development is creating trade-offs with other policy targets of the government, notably to lower the tax burden, support other spending priorities, and maintain a balanced budget.

15. **Before these recent changes were made, Bulgaria's pension system had in the past received generally good marks as regards its long-term sustainability.** The NSSI projected, based on the commonly-agreed assumptions by the European Commission, until 2060 an increase of pension outlays by 3 percent of GDP compared to 2007. The impact of an ageing society would raise pension expenditure particularly during 2030-50 (see Vassilev et al., 2009, and European Commission, 2009 a,c). The projected change and the level of pension expenditure for Bulgaria are at about the average of the new member states and the EU (Figure 5). Given its low public debt and favorable budgetary position such an increase was considered sustainable.¹⁶ One concern was that the relatively low benefit ratio (i.e., average pension in percent of average wage) would drop even further. But when accounting also for Bulgaria's second and third pillar of the pension system the drop is projected to be contained at 3 percentage points, keeping the benefit ratio above most new member states.

Figure 5. Projected Pension Expenditure
(Percent of GDP)



Source: European Commission (2009c), Pension Schemes and Pension Projections in the EU-27 Member States .

16. **However, as a result of the revisions the outlook over the long run has become much less rosy.** By end-2010, the pension-to-GDP ratio is expected to have risen already by 2.3 percentage points compared to 2007 (more than two thirds of the estimated long-term increase). Moreover, the economic crisis has substantially reduced the level of output and it may take a while to return to the pre-crisis growth path. Simulations by the European Commission (2009a) for a “lost decade” scenario show that this could raise pension spending by an additional 1 percent of GDP until 2020 and 1.6 percent until 2060.¹⁷ Also, the Commission estimates do not explicitly consider the financing side of the pension system. As mentioned above, the cuts in social security contributions rates have substantially raised the financing gap and put pressure on the general government.

¹⁶ See the assessment in the European Commission's Sustainability Report (2009b).

¹⁷ The scenario assumes that it takes until 2020 to get back to the projected GDP growth path. The above reported impact on pension expenditure is for the EU average (no country-specific estimates are reported).

17. **The financing gaps need to be contained through revenue and/or expenditure measures.** Freezing public pensions, as envisaged by the government, is recommended for 2010. On the revenue side there is no room for further rate reductions. Rather, raising the rates could help stabilize the public pension finances though a trade-off with other government objectives would arise (such as boosting competitiveness; see Section V).

18. **Moreover, parametric adjustments and structural reforms are called for to address the sharp increase in the dependency ratio.** Most of the additional pension spending is projected to come from an increase in the dependency ratio (i.e., the ratio of pensioners to contributors), which would rise to one of the highest levels across the new member states and the EU (only for Lithuania and Romania is such a level estimated) (Figure 6). Raising the retirement age,

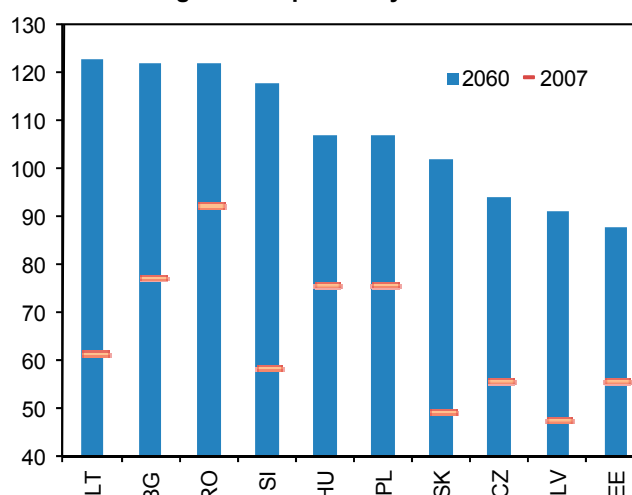
in particular bringing the retirement age for women (60 years) at par with that of men (63 years) and eventually raising it further for both groups should therefore be considered. Also, the system of disability and early retirement pensions needs to be reviewed¹⁸ and be part of pension reforms for which options are currently being discussed by an advisory council of experts set up by the government. Other policies should aim at further raising Bulgaria's labor market participation rate which is still somewhat below the new member states' average. Another issue is how

to strengthen contributions. At present, wages and tax liabilities are frequently underreported, in particular from self-employed and agricultural workers (see Section II). The increase in the minimum insurance income for self-insured, agricultural, and tobacco producers to pay social security contributions in 2010 is one step taken that aims to correct this but more efforts are needed to raise the contribution base over the long run.

Health Care System

19. **Health care output indicators for Bulgaria indicate that a gap remains with the EU and its new member states, to some extent reflecting its economic catch-up space.** Output indicators, such as life expectancy and infant mortality, are still below the new

Figure 6. Dependency Ratio 1/

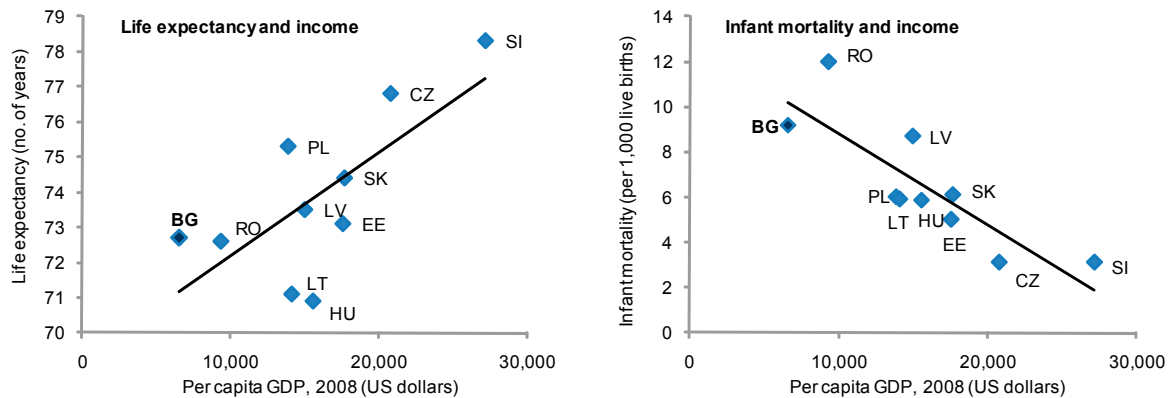


Source: European Commission, 2009 Ageing Report.
1/ Ratio of pensioners to contributors.

¹⁸ The number of disability pensions more than doubled since the comprehensive pension reform in 2000 to about 423,000.

member states' average. But accounting for Bulgaria's lower per capita income, as one of the factors generally associated with better health outcomes, it fares above average (Figure 7). Nevertheless, only one third of Bulgarian citizens are satisfied with the availability of quality health care in Bulgaria (compared to about one half in the new member states and two thirds in the EU).

Figure 7. Health Outcome Indicators



Sources: Eurostat and IMF World Economic Outlook.

20. **Public health expenditure is low and reliance on private health spending is high in Bulgaria.** At about 3 percent of GDP public health care spending in Bulgaria was less than two thirds of the new member states and half of the EU average in 2007 (Table 1).¹⁹ When accounting also for private health outlays, Bulgaria still spends less than most other EU countries on health care, but at 40 percent the share of private spending is one of the highest in the EU.²⁰ This is also reflected in the significant share of out-of-pocket spending in Bulgaria of 38 percent (Table 1). In addition to the compulsory health insurance system, there are also private insurers constituting a second pillar of the health insurance system. At less than 1 percent of spending of health care services their role is still small, however.

¹⁹ The data on public health care spending are from Eurostat to allow for international comparisons. Bulgaria's national data indicate somewhat higher public spending on healthcare of 4.2 percent of GDP in 2007 and 2008.

²⁰ It is higher only in Greece and Latvia.

Table 1. Selected Indicators of Health Care Financing

	General government expenditure on health (Percent of GDP), 2007	General government expenditure on health (Percent of total government expenditure), 2007	Private expenditure on health (Percent of total expenditure on health), 2006	Private households' out-of-pocket expenditure (Percent of private expenditure on health), 2005
Bulgaria	3.1	7.5	40.2	38.0
Czech Republic	7.1	16.6	12.1	10.9
Estonia	4.4	12.7	25.8	20.5
Hungary	4.9	9.8	29.2	25.3
Latvia	4.5	12.5	36.8	38.6
Lithuania	4.4	13.2	30.0	32.2
Poland	4.5	10.8	30.1	26.1
Romania	4.3	11.8	29.0	25.3
Slovakia	6.5	18.7	26.1	22.6
Slovenia	5.8	13.7	27.0	12.4
Average	5.0	12.7	28.6	25.2

Sources: Eurostat and World Health Organization, Statistical Information System.

21. **An area in which costs have surged over the past years is the hospital sector.** The number of hospitals has risen sharply from 308 in 2004 to 430 in 2009. During 2002–07, the number of hospitalizations rose by 33 percent and average costs per case surged by 44 percent in real terms. As a result Bulgaria has one of the highest numbers of hospitals and an above average number of hospital beds per capita in the EU as well as longer hospital stays, lower bed occupancy rates, and an above average share of non-wage spending. Moreover, Bulgarian hospitals spent a much higher share of their budget on medication than in other EU countries. Distorted incentives have led to this proliferation of hospitals, including the requirement by the National Health Insurance Fund to contract all new providers, no ceilings on reimbursement, mispriced procedures and medications, the high hospital-to-hospital referral rates, and weaknesses in the primary care sector (see Smith, 2009 and Georgieva et al., 2007).

22. **Another risk factor for rising costs derives from the spending on medication.** In 2009 costs for the NHIF increased by 10 percent, which was partly due to a positive drug list introduced in June 2009 and which includes new and expensive drugs. For 2010 the NHIF budget foresees, however, a reversal in this trend with a reduction in payments for medicine by about 2 percent. This is aimed to be achieved by capping prices for medication as of April 1, 2010.

23. **Rising financing pressures are a risk for the National Health Insurance Fund (NHIF) and the general government.** Public health care spending in Bulgaria is financed primarily from compulsory insurance contributions but also from taxation (see Georgieva et al., 2007). Financing gaps of the NHIF, which pools the resources for purchasing health services, had opened up in 2005 and were plugged over the next years with government budgetary transfers. To put the financing on a more sustainable footing, in 2009 the compulsory contribution rate was raised from 6 to 8 percent and was split between employers

and employees at a rate of 60:40.²¹ Health insurance for pensioners, unemployed, children, and socially vulnerable are covered by the state and accounted for about one third of total NHIF revenues. In 2009, the NHIF realized a surplus, however, much lower than budgeted. Similarly, for 2010 a surplus is projected but this assumes a rising share of government transfers (to reach 37 percent of total NHIF revenue) and a sharp reduction in health care costs (see Table 2). The NHIF budget includes a drop of health insurance payments by 11 percent, including a cut by 27 percent in payments for hospitals.²² However, if these cuts do not materialize, even higher transfers from the government may be needed.

Table 2. Bulgaria: National Health Insurance Fund (NHIF): Financial Operations

	2005	2006	2007	2008	2009 (Proj.)	2010 (Budget)	2005	2006	2007	2008	2009 (Proj.)	2010 (Budget)
	(In billions of leva)						(In percent of GDP)					
Revenue and transfers	971.7	1,065.9	1,551.2	1,793.8	2,207.5	2,519.2	2.3	2.2	2.7	2.7	3.4	3.8
Health insurance contributions	683.1	757.1	894.1	1,107.9	1,515.1	1,560.0	1.6	1.5	1.6	1.7	2.3	2.4
Health insurance transfers 1/	258.2	275.3	291.9	452.8	664.6	941.1	0.6	0.6	0.5	0.7	1.0	1.4
Other	30.4	33.5	365.2	233.2	27.7	18.1	0.1	0.1	0.6	0.3	0.0	0.0
o/w: General budget transfers	0.0	0.0	338.7	206.4	0.0	0.0	0.0	0.0	0.6	0.3	0.0	0.0
Expenditure and transfers	1,070.7	1,352.8	1,541.7	1,747.8	1,752.8	1,689.4	2.5	2.7	2.7	2.6	2.7	2.6
Health insurance payments	1,039.9	1,323.9	1,507.8	1,705.7	1,696.7	1,511.9	2.4	2.7	2.7	2.6	2.6	2.3
Reserve	0.0	0.0	0.0	0.0	0.0	125.1	0.0	0.0	0.0	0.0	0.0	0.2
Other	30.7	29.0	33.9	42.1	56.1	52.4	0.1	0.1	0.1	0.1	0.1	0.1
Balance	-99.0	-286.9	9.5	46.0	454.7	829.8	-0.2	-0.6	0.0	0.1	0.7	1.3

Source: National Health Insurance Fund.

1/ Health insurance for pensioners, unemployed, children, and socially vulnerable are covered by the state.

24. Over the long term, pressures from age-related health care spending are projected to rise further. In the 2009 Ageing Report, the European Commission estimates nine scenarios for the development of public health care spending until 2060 using assumptions and methodologies agreed among the EU member states. For Bulgaria, under unchanged health care policies the pressures could be substantial (see Table 3), including from demographic factors but mostly from cost convergence and technological impact of medical developments. The recently introduced positive drug list, which includes new and expensive drugs, is one example of the technological impact that could impinge on future costs already in the short term. When developing the government's medium-term budgetary strategy, which aims for a balanced budget while reducing the tax and social security contribution rates, these additional spending pressures need to be considered.

²¹ During the crisis, lower compliance with compulsory contribution has emerged as a problem. With more than three payments overdue over the past twelve months, the insured lose their right for health care payments. To increase the collection rate, this was tightened with effect as of January 1, 2010 to the past 36 months. The NRA indicated that as a consequence 380,000 persons risk being without insurance coverage.

²² The consolidated budget, however, includes a contingency of BGN 125 million for the health care sector that would broadly keep health care spending in 2010 at par with the outlays in 2009.

Table 3. Bulgaria: Projections on Public Health Spending by the European Commission and Agency for Economic Forecasting (AEAF)

Change in Public Health Spending, 2007-2060 (Percent of GDP)			
1. Pure demographic scenario	0.7	6. Labor intensity scenario 4/	1.6
2. High life expectancy scenario	1.0	7. Cost convergence scenario 5/	3.4
3. Constant health scenario 1/	0.0	8. Technology scenario 6/	2.8
4. Death-related cost scenario 2/	0.6	9. Baseline scenario 7/	0.7
5. Income elasticity scenario 3/	1.2	10. AEAF scenario 8/	2.0

Sources: European Commission, 2009 Ageing Report; and Bulgaria Convergence Programme 2008-11.

1/ Assumes constant number of years spent in bad health.

2/ Uses an average profile of death-related costs by age.

3/ Uses an income elasticity of 1.1 in the base year that converges to 1.0 in 2060 (based on the demographic scenario).

4/ Assumes costs evolving in line with labor productivity.

5/ Assumes convergence toward health care provision per person (expressed in percent of GDP per capita spending) of the EU-15.

6/ Includes the impact of technological change on per capita health care spending.

7/ This is the reference scenario of the European Commission's Working Group on Ageing. It combines demographic factors, an income effect, and the development of the health status but does not include the technological impact.

8/ Change between 2010-60 as shown in Bulgaria's Convergence Programme for 2008-10. Does not account for the technological impact.

25. **Completing the comprehensive health care sector reform should become a policy priority.** The health care sector in Bulgaria has undergone substantial reforms since the late 1990s but in recent years additional financial pressures have emerged, partly because of distorted incentives created by earlier changes. Comprehensive reform plans have therefore been drawn up with a view to raise the system's efficiency while improving quality of care and should soon be realized to achieve the financial and other targets of the National Health Care Strategy.²³

26. **A number of areas require particular attention.**²⁴ This includes first rationalizing the hospital sector to undo the proliferation of hospitals and reduce in-patient cases and costs. Measures already taken by the government include the tightening of eligibility criteria for hospitals to receive funds from the NHIF (in particular, defining the number of clinical pathways for each hospital). As a result, the NHIF expects a great number of small underutilized hospitals to close in 2010 due to lack of funding. Second, and complementary to rationalizing the in-patient care, the primary care sector needs to be strengthened. The share of spending on this sector in Bulgaria is far below that in the EU. Thus, a shift from in-

²³ The National Health Care Strategy for 2008–13 spells out key strategic objectives for the health care sector while a recent joint memorandum by the Ministries of Finance and Health as well as the NHIF (January 2010) focuses on key priorities to improve the finances. This includes changing the payment methods to health care providers, setting criteria for hospitalization, introducing medical audits, strengthening overall governance, and monitoring the quality of medical services.

²⁴ These proposals follow the recommendations by the World Bank on the health sector (see World Bank, 2009b; Smith, 2009).

patient to out-patient care would contribute to greater efficiency of the overall health system while improving the health status of the population. Third, consideration should be given to a medium-term pharmaceutical reform agenda to address inappropriate prescribing patterns, weaknesses in the oversight of the procurement of drugs by hospitals, and pricing policies. Fourth, the organizational and legal model of negotiating the National Framework Contract can be strengthened. And finally, options for a multiple insurer model (i.e., a greater role for private insurers) should be considered only within a comprehensive reform package that tackles the above mentioned issues. Discussions about reforms in all of these areas are currently on-going within the government.

D. POLICY CHALLENGE 3: FINDING ROOM FOR OTHER EXPENDITURE CUTS

27. With upward pressure on social security spending, expenditure rationalization, efficiency gains, and reprioritization in other spending areas need to be sought.

Analysis, for example by the World Bank (2006, 2009b) and the European Commission (2009d, see also Box 1), has identified areas of spending inefficiencies and shortcomings that could create future bottlenecks. This includes, in addition to the social security systems discussed above, public administration, public infrastructure, and the education system.²⁵ The government's Action Plan provides an opportunity to address those reform needs in a comprehensive way in support of Bulgaria's economic recovery and putting growth on a sustainable and more balanced path, i.e. shifting the focus toward more export-led growth.

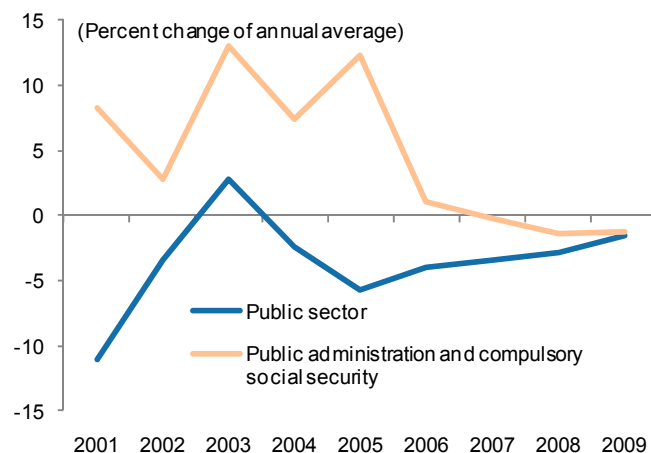
Public Administration

28. Strengthening the capacity and raising the efficiency of Bulgaria's public administration is one key reform area. Bulgaria spends more than most new EU member states on general services as well as public order, safety, and defense (see Table 4), with a particular surge of outlays on general services occurring in 2007.²⁶ At the same time, the number of employees in public administration increased significantly until 2007 which stood in contrast to the overall reduction of public sector employees (Figure 8). Nevertheless, provision of public services is considered to be weak, including the administrative capacity to absorb EU funds. More generally, there is a perception of a high waste of public resources (Figure 9) and corruption, notably in the judiciary, police, and health care system (Figure 10).

²⁵ The analysis below focuses on public administration and public infrastructure. As regards the education system, Bulgaria has recently introduced sweeping reforms of its secondary education system with a view of promoting more autonomy and accountability of schools for better learning outcomes and improved efficiency of public spending. This has led to the closure of a number of schools and reduction in the number of teachers which has helped to contain Bulgaria's spending on education, which is one of the lowest among the new EU member states at about 4 percent of GDP (see Table 4). The reforms still have to show results as regards the quality of education, however. Going forward further reforms should focus on the vocational training and education as well as the tertiary education system (World Bank, 2009b).

²⁶ Public spending on general services rose from 4.5 percent of GDP in 2006 to 8.2 percent in 2007 according to Eurostat data. This is surpassed only by Hungary with 9.3 percent in 2007.

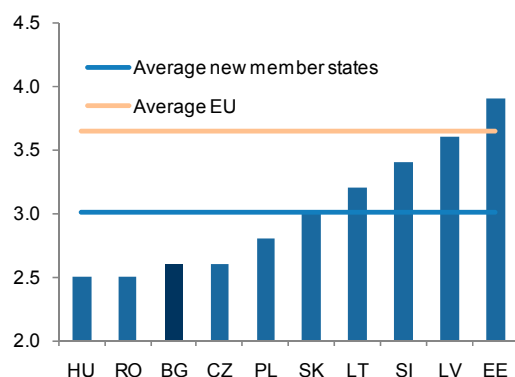
Figure 8. Bulgaria: Number of Employees in the Public Sector and Public Administration 1/



1/ Jan.-Sep. for 2009.

Source: Bulgarian National Statistical Institute.

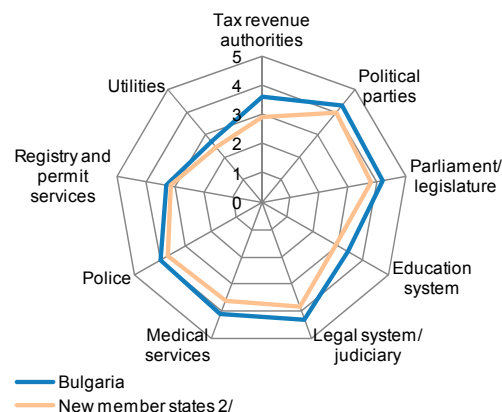
Figure 9. Wastefulness of Government Spending 1/



1/ Survey with index ranging from 1 to 7 with lower values indicating higher wastefulness.

Source: World Economic Forum, "Global Competitiveness Report 2007-08".

Figure 10. Bulgaria: Corruption Impact on Public Services 1/, 2007



1/ The Global Corruption Barometer is a public opinion survey that assesses the general public's perceptions and experience of corruption. The index ranges from 1 to 5 (1: not at all corrupt; 5: extremely corrupt).

2/ Available only for BG, CZ, EE, LT, LV, PL, RO.

Source: Transparency International, Global Corruption Barometer 2007.

29. **Public administration reform has stalled and a comprehensive strategy is lacking.** Reform efforts in 2008 aimed for an across-the-board cut in public employees by 12 percent by end-2008. The reduction by about 3 percent in the public sector and about 1½ percent in the public administration was much lower, however (Figure 8). Nevertheless, this contributed to stabilizing the public wage bill at 5.7 percent of GDP in 2008 (despite sharp public wage increases) after it had risen by 1.2 percent of GDP since 2003. Similarly, the new government announced to further reduce overcapacity in the public sector by reducing staff by another 3 percent in 2010 with cuts of 15 percent within ministries and state agencies. While the government's objective for staff cuts is warranted, ad hoc across-the-board cuts could undermine the long-term effectiveness of public services. It is thus

advisable to develop a comprehensive reform strategy for the public sector, including the public administration, and spell out sector-specific targets and timelines. Carrying-out the originally envisaged, but now delayed, public expenditure review by the World Bank would be a useful supportive tool in this respect.

Table 4. General Government Expenditure by Function (Percent of GDP), average 2005-2007

	General government expenditure	Social protection	Health	Education	General services	Economic affairs	Public order, safety, and defense	Other
	(Percent of GDP)							
Bulgaria	39.1	12.1	4.7	4.0	6.1	4.8	4.7	2.8
Czech Republic	43.8	12.8	7.2	4.8	4.7	7.0	3.5	3.8
Estonia	34.6	9.8	4.3	6.2	3.0	4.4	3.5	3.4
Hungary	50.6	17.3	5.4	5.7	9.4	6.2	3.4	3.2
Latvia	36.3	9.3	4.1	5.6	6.2	4.1	4.1	2.9
Lithuania	34.0	10.3	4.7	5.4	4.1	4.2	3.4	2.0
Poland	43.0	16.5	4.5	5.9	5.9	4.2	3.0	2.9
Romania	35.1	9.8	3.9	4.0	3.5	6.3	4.9	2.8
Slovakia	36.6	12.1	5.8	4.0	4.9	4.0	3.6	2.2
Slovenia	44.1	16.6	6.0	6.2	6.2	4.0	3.0	2.2
Average	39.7	12.7	5.1	5.2	5.4	4.9	3.7	2.8
	(Percent of total general government expenditure)							
Bulgaria	100.0	31.0	11.9	10.1	15.5	12.3	11.9	7.2
Czech Republic	100.0	29.2	16.4	11.0	10.8	15.9	8.1	8.7
Estonia	100.0	28.3	12.4	17.8	8.8	12.6	10.1	9.9
Hungary	100.0	34.2	10.6	11.2	18.6	12.3	6.8	6.3
Latvia	100.0	25.7	11.4	15.3	17.0	11.4	11.3	8.0
Lithuania	100.0	30.3	13.8	15.8	12.0	12.2	10.0	5.9
Poland	100.0	38.4	10.5	13.8	13.8	9.8	7.0	6.7
Romania	100.0	27.9	11.1	11.3	9.9	18.0	13.9	7.9
Slovakia	100.0	33.0	15.9	10.8	13.3	10.9	9.9	6.1
Slovenia	100.0	37.6	13.6	14.0	14.1	9.0	6.7	4.9
Average	100.0	31.6	12.8	13.1	13.4	12.5	9.6	7.1

Source: Eurostat.

Box 1: The EU's Recommendations on Structural Fiscal Issues for Bulgaria

EU Council Opinion on Bulgaria's Convergence Programme (March 2009) 1/

- Further strengthen the efficiency of public spending, in particular through full implementation of program budgeting, reinforced administrative capacity and reforming the areas of labor and product markets, education and healthcare in order to increase productivity.

EC Council Recommendations on the Implementation of the Lisbon Strategy (January 2009) 2/

(...), it is recommended that Bulgaria:

- urgently further strengthens the efficiency and the effectiveness of the public administration, in particular by focusing on key government functions, including the competition, supervisory and regulatory authorities, and the judiciary, and continues taking all measures necessary to ensure effective financial controls and sound management of structural funds;
- maintains a tight fiscal policy, improves the quality and efficiency of public expenditure, keeps wage developments in line with productivity gains, and enhances effective competition; (...)
- as part of an integrated flexicurity approach, focuses on increasing the quality of labor supply and the employment rate by improving the efficiency, effectiveness and targeting of active labor market policies and by further modernizing and adapting the way education is governed to raise skills to levels that better match labor market needs, and reducing early school leaving.

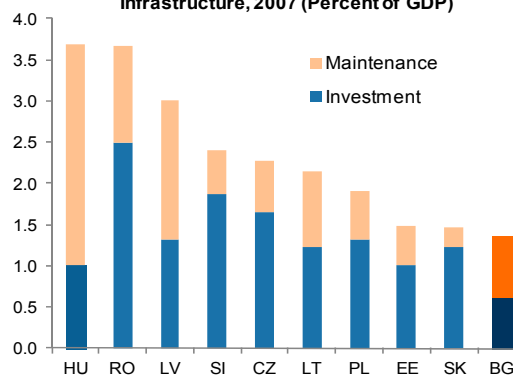
1/ European Commission, Council Opinion of 10 March 2009 on the Updated Convergence Programme of Bulgaria, 2008-2011 (2009/C 62/01) (http://ec.europa.eu/economy_finance/sgp/convergence/programmes/2008-09_en.htm).

2/ European Commission, Council Recommendation on the 2009 Up-Date of the Broad Guidelines for the Economic Policies of the Member States and on the Implementation of Member States' Employment Policies, COM(2009) 34 final, (January 28, 2009) (http://ec.europa.eu/growthandjobs/documentation/index_en.htm#annual).

Public Transportation

30. **Completing the upgrades of Bulgaria's public transportation infrastructure is one of the key requirements for shifting to more export-led growth.** While progress has been achieved in the Bulgarian transportation infrastructure sector (see World Bank, 2009b), a number of challenges remain. Completion of highway construction, largely financed by EU funds, has stalled.²⁷ National roads are in poor

Figure 11. Spending on Road and Rail Transport Infrastructure, 2007 (Percent of GDP)



Source: International Transport Forum.

²⁷ A prominent example is the delays in the construction of the Lyulin highway linking Sofia and Pernik. The government envisages completion of this highway as well as the Trakiya and Martiza highways and tangible progress on the Struma and Black Sea highways by the end of its term in office in 2013. Delays in infrastructure projects also impact transportation on the Danube.

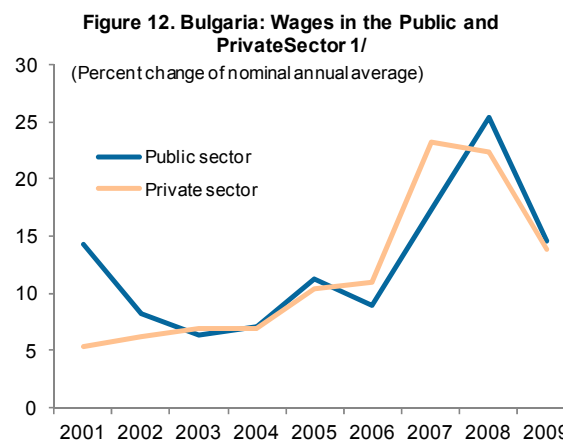
condition and require maintenance or rehabilitation.²⁸ Governance and management of the National Road Infrastructure Agency (NRIA) need to be strengthened. Despite massive reforms and staff reductions in the railway sector, productivity levels still compare unfavorably with the EU and the infrastructure requires substantial investment to be upgraded (see World Bank, 2009b and Nikolova, 2008). Thus, in addition to EU funds, which also need to be co-financed, pressures are emerging for additional public investment in the sector to avoid that transportation becomes a bottleneck to long-term economic growth. According to data from the International Transport Forum, Bulgaria's has spent less on road and railway infrastructure than other new EU member states reflecting the stalled investment process.

F. POLICY CHALLENGE 4: STAYING COMPETITIVE

Developments

31. Private and public sector wage developments in the past two years have contributed to the recent sharp real effective exchange rate appreciation.

Since 2006, the unit labor cost-based real effective exchange rate appreciated by 37 percent; the CPI-based REER appreciated by 20 percent. While public nominal wages grew annually at 8.4 percent on average between 2002 and 2006, since then they surged by over 19 percent annually (Figure 12).



1/ Jan.-Sep. for 2009.

Source: Bulgarian National Statistical Institute.

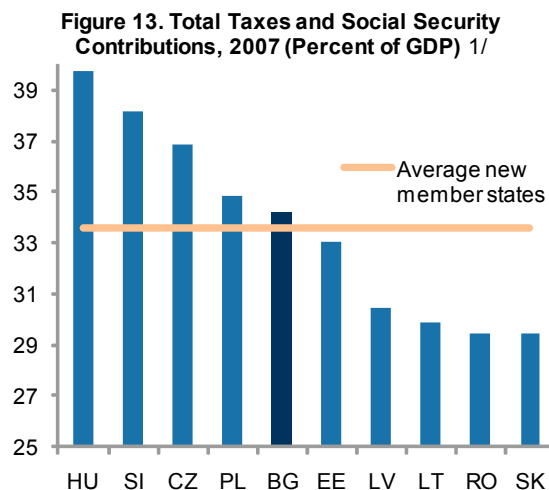
32. The reduction in tax and social security contribution rates has helped Bulgaria's competitiveness. Rate

reductions included those from the introduction of flat taxes on corporate profit and personal income with tax rates of 10 percent as well as the lowering of social security contribution rate by 10½ percentage points since 2002 (see Sections II and III for more details). At the same time the VAT rate was held constant at 20 percent since 1999.

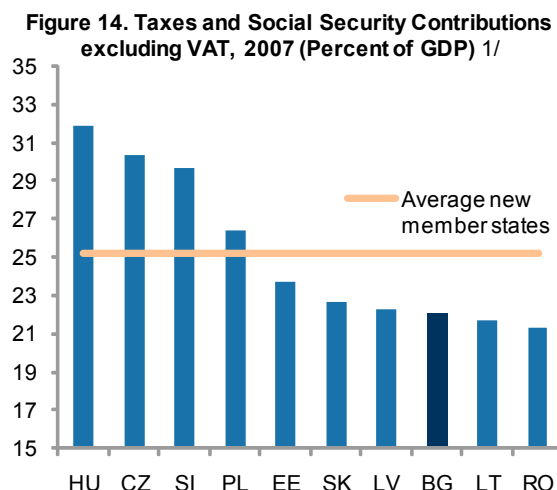
33. The tax to GDP ratio is relatively low in Bulgaria. Bulgaria finds itself above but close to the average of new member states as regards the tax-to-GDP ratio (including social security contributions) (Figure 13). Importantly, most of Bulgaria's revenues are collected from VAT which accounted for the recent surge (see Section II). Abstracting from those, the tax burden in Bulgaria is below that of most EU transition economies (Figure 14). Since

²⁸ Nearly 30-40 percent of Class I-III roads are in poor condition (World Bank, 2009b). The cut of maintenance spending by the NRIA by two thirds in 2009 compared to 2008 further postpones addressing the problem.

VAT plays less of a role for competitiveness (as a zero rate is applied to exports) there is no indication that Bulgaria's tax policy has contributed to the deterioration of competitiveness in the past.



Source: European Commission, DGTAXUD, *Taxation Trends in the European Union, 2009*



Source: European Commission, DGTAXUD, *Taxation Trends in the European Union, 2009*

Policy Options

34. **Wage growth needs to slow to preserve competitiveness and public wage policy can play an important role in this.** With the nominal exchange rate fixed, adjustment will have to come through domestic wages and prices. The wage increases in the public and private sector have been clearly unsustainable and the proposed public wage freeze for 2010 is welcome as it should have a signaling effect for lower private sector wage growth, including in the tradable sector.

35. **Fiscal policy making should put greater focus on how to strengthen the supply conditions of the Bulgarian economy.** As laid out in Section IV, there is a need to strengthen the public infrastructure to ensure that it does not become a bottleneck for economic growth. Similar considerations regard the education system. The expenditure needs that may arise in those areas, in particular for more public investment, would also counterbalance the pro-cyclical tightening that would result from a tight public wage policy and thus ease concerns about undermining the economic recovery with wage moderation.

36. **Further lowering social security contributions with a view to boost competitiveness is not advisable at this stage.** As indicated above, social security rates in Bulgaria have already been lowered substantially. The burden from social security contribution (measured in percent of GDP) is one of the lowest in the EU. At the same time, cost pressures have emerged for the social security systems and financing gaps would rise

further without also revising entitlements. Thus, reducing social security rates should only be considered as part of an overall reform package of social security systems.

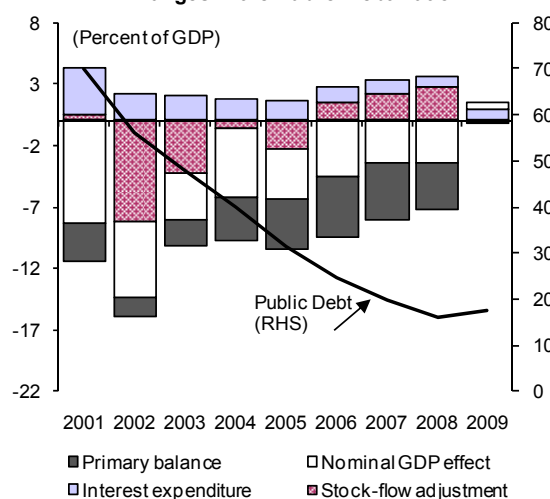
G. POLICY CHALLENGE 5: SUPPORTING THE CURRENCY BOARD ARRANGEMENT²⁹

Developments

37. **Since its introduction in 1997, the currency board arrangement in Bulgaria has been supported by prudent fiscal policy.**

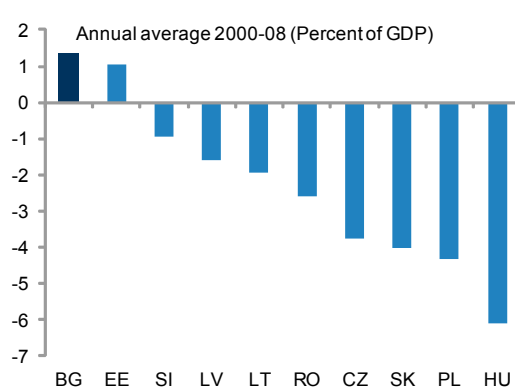
Bulgaria's fiscal position averaged annual surpluses of 1.4 percent between 2000–08, was nearly unprecedented among EU transition economies; only Estonia followed a similar tight stance (Figure 16). As a result, Bulgaria's public debt-to-GDP ratio fell from 77 percent in 2000 to 17 percent in 2009 (Figure 17) which was the second lowest of the EU new member states (after Estonia). While rapid catch-up growth also helped this reduction, the fiscal contribution was significant (Figure 15).

Figure 15. Bulgaria: Contributions to Changes in the Public Debt Ratio



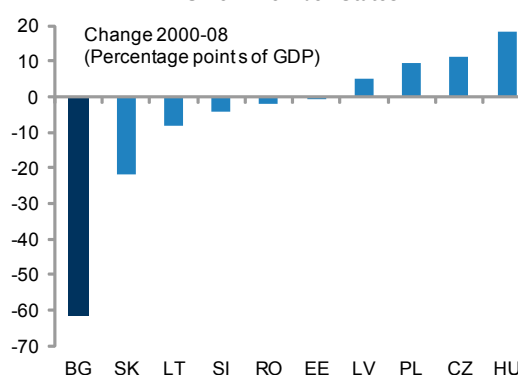
Sources: Bulgarian Ministry of Finance; and staff calculations.

Figure 16. General Government Balance in the EU New Member States



Source: IMF World Economic Outlook.

Figure 17. Change in Public Debt in the EU New Member States



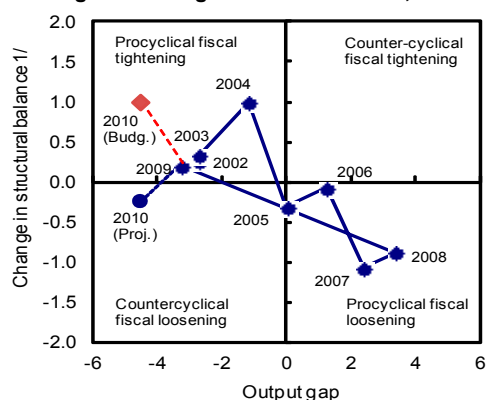
Source: IMF World Economic Outlook.

38. **But fiscal policy has at times been pro-cyclical.** Until 2004, the fiscal stance was tightened despite negative output gaps (Figure 18), with a view to consolidate the budgetary

²⁹ This section focuses only on how the fiscal stance has and can support the currency board arrangement. What role revenue and expenditure policies play in this respect has been discussed in Section II-IV with the contribution of fiscal policy to competitiveness analyzed in Section V.

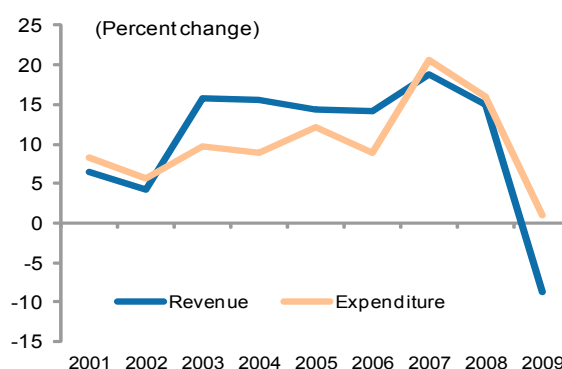
position, drive down public debt, and support the credibility of the currency board. During 2006–08 however, fiscal policy contributed to fuelling the demand boom, despite the significant nominal fiscal surpluses as revenue surges were mirrored by significant expenditure increases (Figure 19).³⁰ In 2009, fiscal policy was tightened in the second half of the year to close the widening financing gap and to adhere to the constraints of the currency board in an environment of high risk of contagion of balance of payment crises in the region. However, much of the tightening was achieved through ad hoc expenditure cuts, sharp reductions in capital spending as well as the build-up of arrears.

Figure 18. Bulgaria's Fiscal Stance, 2002-2010



Sources: Bulgarian Ministry of Finance; and staff calculations and projections.
1/ Actual fiscal balance adjusted for the automatic effects of internal imbalance (output gap) and external imbalance (absorption gap) on fiscal position.

Figure 19. Bulgaria: Revenue and Expenditure Growth, 2001-09



Sources: Bulgarian Ministry of Finance; and staff calculations and projections.

39. Bulgaria's fiscal rules have not played an important role in guiding policy making. Two fiscal rules are in place: a debt rule, in force since 2003 and an expenditure rule, in force since 2006. The debt rule, enshrined in law, sets a ceiling of general government debt at 60 percent of GDP.³¹ Its adoption reflected the commitment to comply with the Stability and Growth Pact and the Maastricht criteria. The expenditure rule defines a ceiling for general government expenditure, excluding contributions to the EU budget, at 40 percent of GDP. This rule was motivated largely by a desire to streamline the government sector and strengthen fiscal discipline. In fact, when it first took effect in 2006, the real expenditure growth was contained and the expenditure ratio dropped by 1 percentage point of

³⁰ While measuring the cyclicity of fiscal policy is complicated by determining the output / absorption gap especially in a country that is still undergoing structural changes, expenditure increases in 2006-08 were large (52 percent) nearly matching those of revenue increases (55 percent).

³¹ The rule was drawn up during 2002 when the debt ratio was still above 60 percent. In principle, it requires that the general government debt-to-GDP ratio cannot exceed that of the previous year until a ratio of 60 percent has been reached.

GDP compared to 2005. However, none of the rules has been binding and they have not played a specific role in fiscal policy decisions since.³²

40. **Similarly, the medium-term fiscal framework has only to a small extent served as a guidepost for fiscal policy.** With its EU membership, Bulgaria has prepared annually three year budgetary projections which have been extended to a four-year horizon under the new government. While the macro projections and fiscal policy assumptions have in the past been prepared before the budget discussions, the detailed fiscal projections were produced at a later time and fed into Bulgaria's Convergence Programme provided to the European Commission. Medium-term targets have been revised annually, reflecting changes in policy priorities as well as macroeconomic projections. Thus, except for certain structural changes in the social security system the medium-term orientation provided by this framework has been limited. This is a weakness shared with many other EU member states.³³

Policy Options

41. **Going forward fiscal policy making could be aided by a greater focus on fiscal rules and medium-term budgetary frameworks (MTBFs).**³⁴

- A greater medium-term orientation of fiscal policy would help reduce the large ad hoc adjustments of the past that also went along with high intra-year volatility, complicating the planning process in particular for capital spending. With a greater medium-term perspective policies could then focus on structural adjustment needs and reforms, such as a public administration reform, reforms of the social security systems, and investment in public infrastructure projects.
- Stronger institutional arrangements may also ease the potential trade-off between the constraints from the currency board on the one hand and the quest to support short-

³² Expenditure under the expenditure rule is defined to include the contributions of the government to the social security fund (i.e., expenditure is defined in gross rather than net terms; the latter is the methodology used for data presented in this paper).

³³ See for an assessment of medium-term budgetary frameworks in the EU, European Commission (2007a). In cases where the ceilings are fixed over the medium term they have tended to be more binding. One example is the Dutch framework with fixed expenditure ceilings for four years; another is Sweden's rolling framework, which adds a new third year annually (without adjusting the previous targets). For more details of these cases see Box 3 and, for example, Ljungman (2008).

³⁴ A fiscal rule is defined as a permanent constraint on fiscal policy through simple numerical limits on budgetary aggregates (Kopits and Symansky, 1998). A medium-term budgetary framework (MTBF) provides a mechanism for operationalizing medium-term fiscal objectives or rules by translating them into a credible and detailed plan for the evolution of expenditure and revenue. Thus, the main difference between fiscal rules and MTBFs lies in the degree of permanence and level of detail. In practice, however the delineation may not be clear cut. For a recent paper on the experience with fiscal rules around the world and the role that they can play in anchoring expectations see Kumar et al. (2009). For the EU member states, the ECOFIN council has repeatedly highlighted the importance of national fiscal rules and institutions.

and long-term growth, on the other hand, by providing a transparent path of fiscal policy making and encouraging fiscal reforms.

42. **Fiscal rules have different properties as regards economic objectives.** As elaborated in Box 2, it depends on the budgetary aggregate that is targeted, how close the link is with economic objectives, such as debt sustainability, economic stabilization, or government size. For Bulgaria the key challenges that have emerged are maintaining credibility about prudent fiscal performance while limiting pro-cyclicality and a proliferation of government spending.

43. **Fiscal challenges in Bulgaria could be addressed by a greater focus on expenditure targets, either in the form of fiscal rules or MTBFs.** Setting real spending growth in line with cautious estimates of potential GDP would contribute to containing the overall spending envelope while allowing for cyclical adjustments: if real GDP grows faster than potential, public expenditure growth would help dampen domestic demand; if real GDP growth lags behind potential growth expenditure growth would contribute to stimulating the economy. Such a framework would also provide some clear-cut multi-annual guidance for fiscal policy without annual revisions as under the current framework.³⁵ An operational challenge, however, is to determine potential growth as the Bulgarian economy is still undergoing structural adjustments, but comprehensive work has been undertaken on this at the AEA, the Bulgarian National Bank and the European Commission.

44. **A medium-term expenditure orientation could be reinforced through budget balance targets.** Limiting real expenditure growth to potential output growth by itself should already contribute to prudent fiscal policy making, reduce the deficit bias, and ensure debt sustainability. For example, revenue windfalls could only be spent to the extent that real expenditure growth is in line with potential growth. However, when for structural reasons revenues fall permanently short of expenditure, such an expenditure rule alone would not prevent the build-up of fiscal deficits. Thus, an additional budget balance rule could help debt sustainability.

45. **A potential trade-off between transparency and responsibility to shocks needs to be taken into account when considering the type of budget balance targets.** Targets on the headline budget balance are easy to understand and monitor, would be in line with the EU's Stability and Growth Pact and Maastricht requirements, and are particularly a focus of financial markets—an important consideration under Bulgaria's currency board. Budget balance targets, however, when defined in headline figures have no good economic stabilization property. In times of economic downturns, they would require pro-cyclical tightening when the budget balance limit has been breached and in good economic times,

³⁵ For examples of multi-year expenditure rules see Box 3; for an overview of national fiscal rule in place in the EU see Appendix I.

they would not prevent pro-cyclical fiscal loosening. Economic shocks can be taken into account when the budget balance is defined in structural terms. This is the case of Bulgaria's medium-term budgetary objectives (MTOs) that it sets under the requirements of the EU's fiscal framework.

Box 2: Fiscal Rules and Their Key Properties

Budget balance rules can help ensure that the debt-to-GDP ratio converges to a finite level. Primary balance rules are less linked to debt sustainability as increases in interest payments would not require an adjustment even if they affect the budget balance and public debt, but they allow for interest rate fluctuations. The “golden rule,” which targets the overall balance net of capital expenditures, is even less linked to debt. With regard to output shocks, budget balance rules defined in terms of headline balances do not allow for cyclical flexibility. However, a cyclically adjusted or structural balance rule allows the full operation of automatic stabilizers, though it does not provide room for discretionary fiscal stimulus. Rules defined “over the cycle” leave room for both discretionary and cyclical adjustments but they are harder to monitor.

Debt rules set an explicit limit or target for public debt in percent of GDP. This type of rule is, by definition, the most effective in terms of ensuring convergence to a debt target. However, it does not provide sufficient guidance for fiscal policy when debt is well below its ceiling.

Expenditure rules usually set permanent limits on total, primary, or current spending in absolute terms, growth rates, or in percent of GDP. As such, these rules are not linked directly to the debt sustainability objective since they do not constrain the revenue side. They can provide, however, an operational tool to trigger the required fiscal consolidation consistent with sustainability when they are accompanied by debt or budget balance rules. Expenditure rules also allow for cyclical flexibility as they are consistent with cyclical and discretionary reductions in tax revenues, but they do not normally permit discretionary expenditure stimulus. Containing the size of government can also be a key function of expenditure rules.

Revenue rules set ceilings or floors on revenues and are aimed at boosting revenue collection and/or preventing an excessive tax burden. These rules are also not directly linked to the control of public debt, as they do not constrain spending. Revenue rules do not generally account for the operation of automatic stabilizers on the revenue side in a downturn (or in an upturn for revenue ceilings). As automatic stabilizers are stronger on the revenue side, these rules per se tend to result in procyclical fiscal policy. However, revenue ceilings can contain the size of government. Revenue rules have also been introduced to limit spending of revenue windfalls or help protect priority spending by earmarking funds for specific sectors (e.g., health and education).

Properties of Different Types of Fiscal Rules Against Key Objectives 1/

Type of fiscal rule	Objectives		
	Debt sustainability	Economic stabilization	Government size
Overall balance	++	-	0
Primary balance	+	-	0
Cyclically adjusted balance	++	++	0
Balanced budget over the cycle	++	+++	0
Public debt-to-GDP ratio	+++	-	-
Expenditure	+	++	++
Revenue			
Revenue ceilings	-	-	++
Revenue floors	+	+	-
Limits on revenue windfalls	+	++	++

Source: Kumar et al. (2009).

1/ Positive signs (+) indicate stronger property, negative signs (-) indicate weaker property, zeros (0) indicate neutral property with regard to objective.

46. Giving greater prominence to the MTO in policy making should be considered.

Bulgaria's MTO of a 0.5 percent of GDP structural fiscal surplus would ensure long-term debt sustainability when accounting for the impact of population ageing.³⁶ But in the public debate or in the budget discussions the MTO has not featured prominently. This may be due to the difficulty of determining and communicating the concept of the structural balance, which requires assessing the cyclical position of the economy and the budget elasticity, and/or the fact that the budget process and the determination of Bulgaria's medium-term fiscal policy under the EU's fiscal framework are delinked. The budget has to be submitted by end-October and adopted by end-December, while Bulgaria's Convergence Programme for the EU is typically prepared by end-January. Also, the Convergence Programme is not presented to or discussed in parliament. Considering better linking the two and strengthening the communication on the MTO could usefully give fiscal policy an additional anchor role.³⁷

³⁶ According to the EU's fiscal framework, for euro-area and ERM II members MTOs cannot be less than -1 percent of GDP. Currently, MTOs vary between -1 percent of GDP and +2 percent of GDP (Finland). If countries deviate from their MTOs, the Stability and Growth Pact foresees an annual adjustment effort (defined in structural terms) of 0.5 percent of GDP as a benchmark for euro-area and ERM II members but there is no sanction mechanism for non-compliance.

³⁷ See European Commission (2007b). In its Communication to the 2007 Public Finance Report it proposes measures along these lines for EU member states with a view to better adhere to medium-term fiscal plans, in particular in good economic times, as a way to strengthen the preventive arm of the SGP.

Box 3: Expenditure Ceilings in Finland, the Netherlands and Sweden

Finland, the Netherlands, and Sweden all set expenditure ceilings. The frameworks have been regarded broadly successful in ensuring prudent fiscal policy making with a medium-term orientation in those countries. Nevertheless, they are not free from shortcomings. For example, tax expenditure has been used at times to circumvent ceilings. The main features of the frameworks are summarized in the table below.

Main Elements of Expenditure Rules in Finland, the Netherlands and Sweden

	Time Horizon	Statutory Basis	Items excluded from Expenditure Ceiling	Inflation Adjustment	Flexibility Instruments
Finland	Four year fixed ceiling for the government term	Coalition agreement	Interest expenditure, unemployment benefits, and some non-employment benefits	Real ceiling converted with a government expenditure deflator	Possibility to carry over an ex post budget margin
The Netherlands	Four year fixed ceiling for the government term	Coalition agreement	Interest expenditure	Real ceiling converted with a national income deflator	Small contingency margin
Sweden	Three-year rolling ceiling	Political commitment, parliamentary decision	Interest expenditure	Nominal ceiling	Contingency margin

Source: Based on Ljungman (2008).

H. CONCLUSIONS

47. **Bulgaria's public finances face a number of challenges.** The end of the revenue boom has added a further constraint to fiscal policy making in the pursuit of the government's short and medium-term policy objectives. These goals include boosting competitiveness, lowering the size of government and level of taxation, ensuring the sustainability of the security systems, maintaining medium-term structural budgetary surpluses, improving the quality of public services, and the efficiency of their provision. Bulgaria's past prudent stance of fiscal policy has put it in a relatively comfortable position to address these challenges. However, some of the envisaged policy measures imply trade-offs as regards the various objectives, but there are policy options that would alleviate them.

48. **What are the main trade-offs?** A key conflict derives from the government's objective to boost Bulgaria's competitiveness and economic growth by reducing social security contribution and VAT rates. If not accompanied by other measures, however, such a step would widen the fiscal deficit, undermine the public finances of the social security systems, and would not be coherent with the medium-term objectives of a structural budget surplus and support of the currency board system. These risks result from the strong reliance of Bulgaria on VAT receipts which surged under the unsustainable domestic demand boom and the recently emerged financing gaps of the social security systems due to a proliferation of costs in the health care system sharp pension increases and social security contribution reductions. The trade-off is further accentuated by the need for public investment to ensure that the public infrastructure does not become a bottleneck for long-term economic growth, in particular toward more export orientation.

49. **What are the policy options?**

- A fiscal policy alternative in support of competitiveness, without creating budgetary pressures, is a moderate public wage policy with wage freezes in the short run and increases in line with productivity over the medium term.
- In part, such financing pressures could be compensated by measures that strengthen tax compliance and help lift parts of the economy from the shadow thereby creating a larger tax base. However, such policies and effects take time, especially when implemented during a difficult economic situation, and the size of the impact is difficult to judge. They should therefore be treated as complementary and not be viewed as fully compensating revenue shortfalls from rate cuts.
- Similarly, efforts to boost absorption of EU funds could create room for much needed additional expenditure for upgrading Bulgaria's public infrastructure and for other investment needs to ensure that the supply conditions are conducive for long-term economic growth.

- More generally, public administration needs not only to become more effective but there is also room for streamlining, as Bulgaria spends more on general public services than most other EU new member states. Savings should come from a comprehensive public administration reform (rather than ad hoc across-the-board cuts).
- Financial pressures on the social security systems, which are bound to increase over time as a result of the aging population, also need to be urgently addressed. A comprehensive reform of the health care system is needed as distorted incentives have resulted in a surge of spending while satisfaction with the quality of services remains low. As regards the pension system, freezing public pensions—as envisaged by the government—is recommended for 2010. Moreover, gradually raising the retirement age—in particular, bringing the retirement age for women at par with that of men—should be considered as well as reviewing and reforming disability and early retirement pensions.
- Framing fiscal policy more strongly within a set of fiscal rules and a medium-term budgetary framework is an option to support the above objectives. Greater medium-term orientation could help avoid large ad hoc adjustments and pro-cyclicality of fiscal policy, and partly ease the constraints from the currency board by providing a transparent path of fiscal policy making. In particular, setting fiscal expenditure targets complemented by a greater role of the government's structural balance objective should be considered.

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Appendix 1. National Fiscal Rules in the EU Member States, 2008 1/

Country	Type of National Rules (Start Date) 2/	Statutory Base	Coverage 3/	Time Frame	Other Features of Rules
Austria	BBR (1999)	Statutory	GG, CG	Multiyear (ER), Annual (BBR,DR)	BBR: Deficit targets for the CG, RG (Länder), and LG contained in a National Stability Pact within a multiyear budgetary setting. Formal enforcement procedures. ER: An expenditure rule was adopted in 2007 and took effect with the 2009 budget.
Bulgaria	ER (2006), DR (2003)	Political commitment; Statutory	GG	Annual	ER: Ceiling on the expenditure-to-GDP ratio of 40 percent. DR: Ceiling on the public debt-to-GDP ratio of 60 percent.
Czech Republic	ER (2005)	Statutory	GG, CG	Multiyear for ER	ER: Expenditure limits inserted in a medium term expenditure framework (MTEF), covering 2 years beyond the budget year. The government may change the MTEF for the originally second and third years when a state budget bill is introduced. Nevertheless, this is possible only in defined cases. The government has to provide reasons in case of deviations from the approved MTEF to the parliament, and have these approved.
Denmark	ER (1994), RR (2001), BBR, DR (1992)	Political commitment	GG	CA or Multiyear	BBR: At least balance on the structural budget balance in 2015. ER: Real public consumption on a national account basis must not increase by more than certain amounts per year. Besides, total ceiling of 26.5 percent of cyclically adjusted GDP in 2015. RR: Direct and indirect taxes cannot be raised.
Estonia	BBR (1993)	Political commitment	GG	Annual	BBR: Balanced budget for GG.
France	ER (1998), RR (2006), DR (2008)	Statutory; Political commitment	GG, CG	Multiyear for ER	ER: Targeted increase of CG expenditure in real terms. RR: CG to define the allocation of higher than expected tax revenues ex ante. DR: Each increase in the Social Security debt has to be matched by an increase in revenues.
Finland	ER (1999), BBR (1999)	Political commitment	GG, CG	Multiyear for ER	ER: Spending limits in the Spending Limits Decision 2010-2013 from March 2009. Unemployment-related appropriations and similar automatic stabilizers are outside the spending limits (about ¼ of total spending). BBR: Target of structural surplus of 1 percent of potential GDP. Cyclical or other short-term deviations allowed, if they do not jeopardise the reduction of the CG debt ratio. CG deficit must not exceed 2.5 percent of of GDP. The government decided in Feb, 2009 that it can temporarily deviate from the CG deficit target if structural reforms are undertaken to improve general government finances (in the medium or longer term).
Germany	BBR (1972), ER (1982)	International Treaty; Constitutional	GG, CG	Multiyear for ER	National rules: BBR: "Golden rule" which limits net borrowing to the level of investment except in times of a "disturbance of the overall economic equilibrium." A new structural balance rule was enshrined in the constitution in June 2009. After a transition period, starting in 2011, it will take full effect in 2016 for the Federal government and 2020 for the states. The rule calls for a structural deficit of no more than 0.35% of GDP for the Federal government and structurally balanced budgets for the Laender.
Hungary	BBR (2007)	Statutory	GG	Annual	BBR: Primary budget surplus balance target. BBR, DR: In November 2008, Hungary adopted a primary budget balance rule and a real debt rule, which will take effect in 2012. Transition rules call for a reduction of the budget deficit (in percent of GDP) and limit real expenditure growth in 2010 and 2011.
Lithuania	ER, RR (2008), DR (1997)	Statutory	GG, CG	Annual	ER: If the GG budgets recorded a deficit on average over the past 5 years, the annual growth of the budget appropriations may not exceed 0.5 percent of the average growth rate of the budget revenue of those 5 years. RR: The deficit of the budget shall be reduced by excess revenue of the current year. DR: Limits set on CG net borrowing.

Country	Type of National Rules (Start Date) 2/	Statutory Base	Coverage 3/	Time Frame	Other Features of Rules
Luxembourg	ER (1990), DR (1990)	Political Commitment, International Treaty	GG, CG	Multiyear for ER	<u>ER</u> : In the course of the legislative period, public expenditure growth is maintained at a rate compatible with the medium-term economic growth prospects (quantified). Independent body sets budget assumptions. Some rules exclude public investment or other priority items from ceiling. Major changes to DR in 2004.
Netherlands	ER, RR (1994)	Coalition agreement	GG	Multiyear for ER	<u>ER</u> : Real expenditure ceilings are fixed for total and sectoral expenditure for each year of government's four-year office term. Expenditure includes interest payments. If overruns are forecast, the Minister of Finance proposes corrective action. <u>RR</u> : At the beginning of the electoral period, the coalition agrees on the desired development of the tax base, and this multi-year path needs to be adhered to during the period. Additional tax increases are compensated through tax relief and vice versa. Independent body sets budget assumptions. Some rules exclude public investment or other priority items from ceiling.
Poland	DR (1997)	Constitutional	CG, GG	Annual	<u>DR</u> : Debt ceiling of 60 percent of GDP. The Public Finance Act includes triggers for corrective actions when the debt ratio reaches thresholds of 50, 55, and 60 percent of GDP. Rules exclude public investment or other priority items from ceiling at subnational levels.
Portugal	BBR (2002)	Statutory	CG, GG	Annual	<u>BBR</u> : Balanced budget rule for CG. Rules exclude public investment or other priority items from ceiling at subnational levels.
Spain	BBR (2003)	Statutory	GG	CA or Multiyear	<u>BBR</u> : In "normal" economic conditions, GG and its sub-sectors must show a balanced budget or a surplus. In downturns, the overall deficit must not exceed 1 percent of GDP. In addition, a deficit of up to 0.5 percent of GDP is allowed to finance public investment under certain conditions. Spain also has a FRL to support its rules. The "exceptional circumstances" and "special conditions" clauses have been activated during the current downturn and the provision to presenting plans to correct within 3 years have been put on hold without a specific time frame.
Sweden	ER (1996), BBR (2000)	Political commitment	GG, CG	Multiyear for ER; target government saving over the cycles	<u>BBR</u> : A surplus of 2 percent of GDP for the GG over the cycle targeted. <u>ER</u> : Nominal expenditure ceiling for CG and extra-budgetary old-age pension system targeted. Some rules exclude public investment or other priority items from ceiling.
United Kingdom	BBR, DR (1997)	Political commitment	GG	CA or Multiyear	<u>BBR</u> : Golden rule: GG borrowing only allowed for investment, not to fund current spending. Performance against the rule is measured by the average surplus on the current budget in percent of GDP over the economic cycle. <u>DR</u> : Sustainable investment rule: public sector net debt as a proportion of GDP should be held at a stable and prudent level over the economic cycle. Other things equal, net debt will be maintained below 40 percent of GDP over the economic cycle. There is a FRL to support these rules. Rules exclude public investment or other priority items from ceiling. Government will depart "temporarily" from the fiscal rules "until the global shocks have worked their way through the economy in full." Authorities have adopted a temporary operating rule: "to set policies to improve the cyclically adjusted current budget each year, once the economy emerges from the downturn, so it reaches balance and debt is falling as a proportion of GDP once the global shocks have worked their way through the economy in full."

Source: Kumar et al. (2009).

1/ Includes only national rules at the general or central government level.

2/ Rules in effect in 2008. Start date of rules in bracket. ER = Expenditure rule; RR = Revenue rule; BBR = Budget balance rule; DR = Debt rule

3/ GG = General government; CG = Central government. CA = Cyclical adjustment. While some countries cover the (non-financial) public sector, in this table their coverage is captured as GG.

III. RECENT EVOLUTION AND SOUNDNESS OF THE BULGARIAN BANKING SECTOR

1. **This chapter provides a broad overview of the Bulgarian banking sector and the short-run challenges it currently faces as the economy starts to emerge from recession.** Section I discusses the sector's market structure. Section II documents the evolution of credit during the boom years of 2002–08 while Section III analyzes developments during the 2009 recession and its impact on the soundness of the banking sector. Section IV reviews how some of the policies implemented during the boom have been reversed during the crisis. Section V concludes by presenting an analysis of risks at the current juncture.

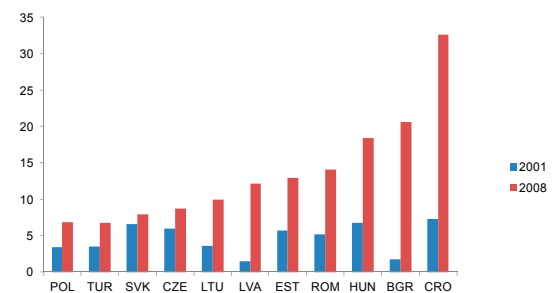
A. MARKET STRUCTURE

2. **The Bulgarian banking sector consists of 30 banks and is dominated by subsidiaries of large foreign banks.** Only seven banks are domestically-owned institutions while six foreign banks operate as branches. The largest five banks have a market share of 58 percent for both loans and assets as of end-Q4, 2009 (Table 1). This structure is the outcome of the restructuring and gradual liberalization of the banking sector that followed the country's financial crisis of 1996–97 (see Herderschee and Ong, 2006).

3. **Major foreign banks are all from other EU countries, most notably Greece, Italy, Austria and Hungary.** The five Greek banks together represent 30 percent of the market. Some of these banks entered the Bulgarian market relatively recently and have relied little on domestic deposits to fund their activity, as witnessed by their high loan-to-deposit ratios (see Table 1). The five private domestic institutions are typically controlled by a small number of individuals but four are listed on the Sofia stock exchange.

4. **The size of domestic nonbank credit institutions is still relatively small but cross-border loans are significant (Table 2).** The leasing sector's credit to corporations represents only 15 percent of the banking sector's while other credit institutions serve mostly households and have a 10 percent market share. These two types of institutions grew rapidly during the boom years, partly in response to constraints imposed by the BNB on banks to slow credit growth down, as discussed in Section IV below.¹ Thirty percent of loans to corporations are provided by foreign institutions.² External cross-border loans by

Figure 1. Ratio of Cross-Border Loans to the Non-Bank Sector to GDP, 2001-2008 ^{1/}



Source: BIS; IFS
1/ Loans to non-banks by BIS reporting banks

¹ Two leasing companies and one other credit institution have assets above 1 bn Leva as of end-2009. March 2009 amendments to the Law on Credit Institutions and BNB Ordinance No. 26 issued in April 2009 require that nonbank credit institutions be registered at the BNB and have a minimum capital of 250,000 Leva, and subject them to regular reporting to the BNB and its credit registry.

BIS-reporting banks to the non-bank sector have grown a lot and are the highest in the region, behind Croatia (Figure 1).

Table 1. Bulgaria: Banking Sector Overview
(as of end-Q4 2009)

Bank Name	Nationality of Controlling Shareholder	Total Assets (in billion leva)	Asset Market Share (in percent)	Loan-to-Deposit Ratio 4/ (in percent)
<i>Largest banks</i>				
Unicredit	Italy/Austria	11.5	16.3	147
DSK 1/	Hungary	8.7	12.3	126
United Bulgarian Bank 2/	Greece	8.2	11.5	156
Raiffeisen	Austria	6.6	9.4	124
Eurobank	Greece	6.0	8.5	112
First Investment Bank	Bulgaria	4.1	5.8	97
Piraeus	Greece	3.6	5.1	261
<i>Other Greek banks</i>				
Alpha 3/	Greece	2.2	3.2	235
Emporiki	Greece	0.5	0.7	319
Total banking system		70.9		133

Sources: BNB; and IMF staff calculations.

1/ Controlling shareholder is OTP.

2/ Controlling shareholder is National Bank of Greece.

3/ Branch (not subsidiary).

4/ Excludes deposits of financial corporations.

Table 2. Bulgaria: Distribution of Loans to Nonfinancial Domestic Corporations and Households by Type of Credit Institution

(As of end-Q3, 2009)

	Nonfinancial Corporations	Households	Total	Percent of 2008 GDP
	(in million levas)	(in million levas)	(in million levas)	
<i>Domestic institutions</i>				
Bulgarian banks	32,516	18,365	50,881	76.3
Leasing companies	4737	466	5,203	7.8
Corporations specialized in lending 1/	295	1,888	2,184	3.3
<i>Foreign institutions</i>	16046	823	16,869	25.3
Total	53,595	21,542	75,137	112.6

Sources: BNB; and IMF staff calculations.

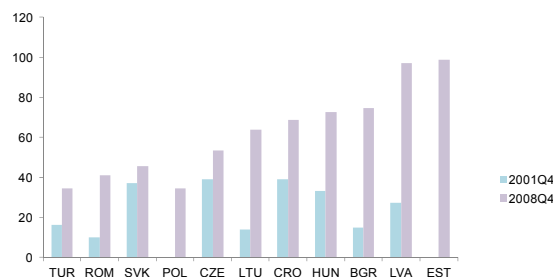
1/ Data collected from 18 institutions, representing 97 percent of the total assets of that category.

² This includes international organizations, foreign private financial institutions but also foreign private non-financial institutions that provide inter-company loans to local affiliates.

B. THE CREDIT BOOM OF 2002–08

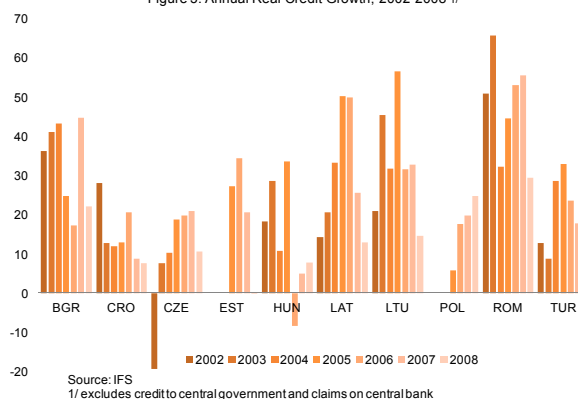
5. **Bulgaria's banking sector grew very rapidly since the turn of the century.** This is the result of fast growth of credit to the non-government sector (Figure 2). Growth of real credit has been among the strongest in the region during that period. Only Romania has had a consistently superior growth performance (Figure 3).

Figure 2. Credit to GDP ratio, 2001-2008 ^{1/}



Source: IFS and IMF staff calculations
^{1/} excludes claims on central government and claims on central bank

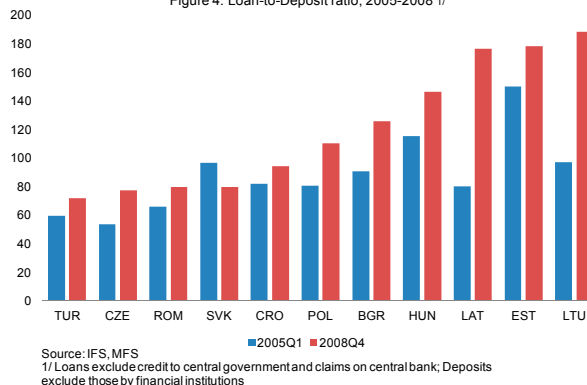
Figure 3. Annual Real Credit Growth, 2002-2008 ^{1/}



Source: IFS
^{1/} excludes credit to central government and claims on central bank

6. **Credit growth has to a large extent been financed from abroad, resulting in a notable rise of the loan-to-deposit ratio (Figure 4).** In terms of levels, the loan-to-deposit ratio is now close to the average of the region, behind the Baltic countries and Hungary, but well above 100. Loan-to-deposit ratios for individual banks vary between 100 percent and 315 percent, reflecting the diverse availability of funding from parent banks and the aggressiveness of each bank's expansion strategy during the boom years (see Table 1).

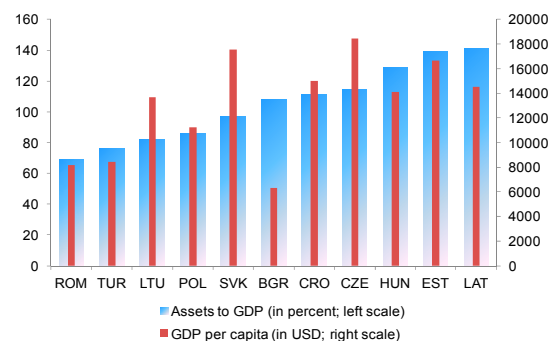
Figure 4. Loan-to-Deposit ratio, 2005-2008 ^{1/}



Source: IFS, MFS
^{1/} Loans exclude credit to central government and claims on central bank; Deposits exclude those by financial institutions

7. **Total banking sector assets represent more than 100 percent of GDP.** This is not as high as in Estonia and Latvia, but well above Romania and Turkey (Figure 5). In fact, the development of the Bulgarian banking sector is quite advanced in relation to the country's level of GDP per capita.

Figure 5. Total banking sector assets to GDP, 2008



Source: IFS; MFS

8. **Banks' loan portfolio is dominated by loans to corporations (Figure 6).** Banks diversified away from corporations in the first half of the past decade, but the share of loans to households (overdrafts, consumer loans and mortgages) has stabilized between 40 and 45 percent since 2005. This is modest relative to other countries in the region.

9. **The evolution of the sectoral allocation of credit within the corporate sector reflects a gradual shift towards construction as well as real estate and other services during the boom years.** This is true both for loans extended by the domestic banking system and cross-border loans (Figures 7 and 8). Available statistics do not provide a breakdown between real estate activities and other professional services (such as computer services) before 2009, but one can reasonably assume that loan growth in the real estate sector was extremely strong, mirroring its growth rate in value added.

Figure 6. Share of Household and Corporate Credit in Total Credit to the Economy, 2009 Q3 ^{1/}

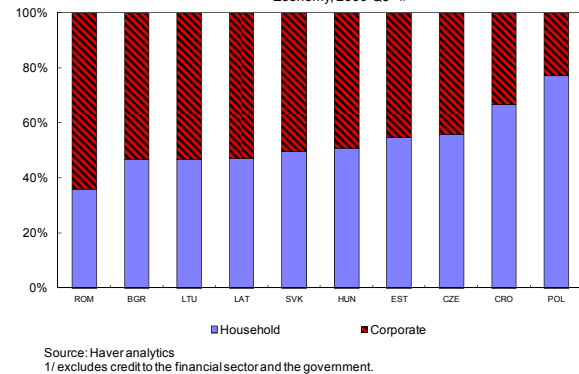


Figure 7. Bulgaria: Domestic Loans to Nonfinancial corporations (percent of GDP)

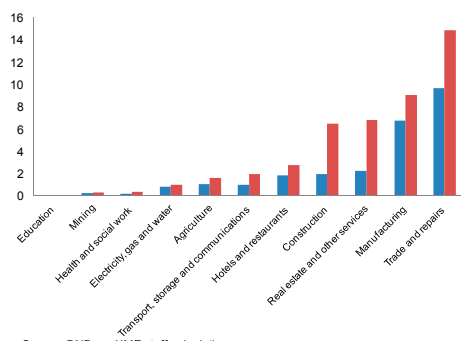
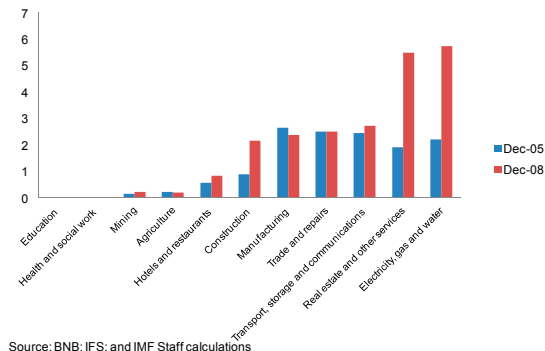
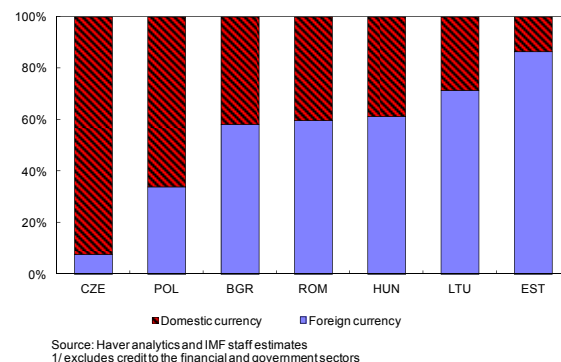


Figure 8. Bulgaria: External Loans to Nonfinancial corporations (percent of GDP)



10. **The share of loans denominated in foreign currency is in line with the regional average (Figure 9).** Direct cross-country comparisons of loan currency denomination can be hazardous, as loans indexed on a foreign currency are often classified together with standard loans in domestic currency. This is the reason why Croatia and Turkey are excluded from Figure 9. Moreover, Haver data do not provide a breakdown by foreign currency (in Bulgaria, FX loans are more than

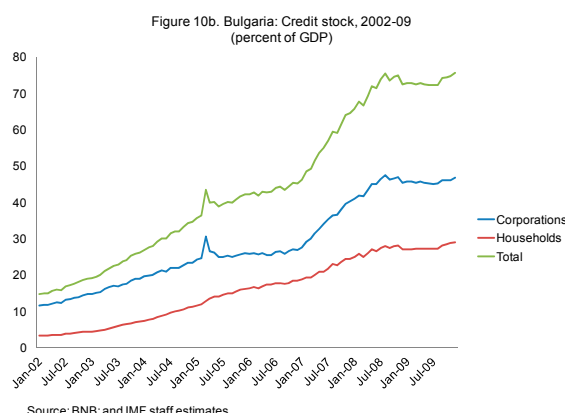
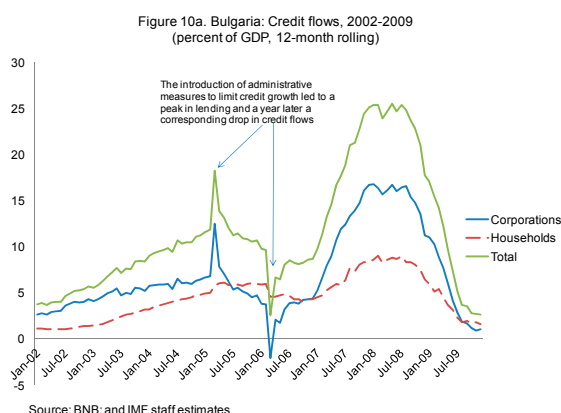
Figure 9. Share of Domestic and Foreign Currency Credit in Total Credit to the Economy, 2009 Q3 ^{1/}



96 percent denominated in euros).³ Nevertheless, available data suggest that the degree of loan euroization and dollarization is significantly less than in the Baltic region but higher than in countries such as Poland or the Czech Republic. Lending in foreign currency has been on an upward trend in recent years as integration with the rest of the EU has deepened, and as the average maturity of banks' portfolios has kept increasing—in part as a result of the development of the mortgage market—and there is a strong positive correlation between loan maturity and FX denomination.

C. THE 2009 CREDIT SLUMP AND ITS IMPACT ON BANKING SECTOR SOUNDNESS

11. **The credit slump of 2009 was as sharp as the latest surge during the credit boom.** Credit flows suddenly came to a halt in the last quarter of 2008, which affected corporations and households equally (Figure 10a-b).⁴ In the aggregate, credit growth remained positive for the year 2009 as a whole, in part because of some repurchases of loans from parent banks. Within the corporate sector, the stagnation of credit was broad-based. Within the household sector, the mortgage sector managed to expand slightly while the flow of consumer loans turned negative.



12. **While money market rates have started to normalize, deposit rates remain high.** Tension on money market rates became apparent since the beginning of the global financial

³ Bulgarian regulators make a distinction between euro- and lev-denominated loans, and loans denominated in other foreign currencies. Given the currency board arrangement, regulators see euro-denominated and lev-denominated loans as equally risky, and treat them in the same way. Loans in other currencies are seen as potentially more risky and over the period 2004-2009, the BNB's regulatory and supervisory policy has successfully discouraged banks to introduce credit products in foreign currencies different from the euro.

⁴ The spike in 2005 and corresponding fall in 2006 are the result of credit growth restrictions imposed by the BNB discussed in the next Section (see Herderschee (2007) for a thorough analysis).

crisis in the late summer of 2007, as witnessed by the increase in bid-ask spreads and in spreads over Euro area market rates (Figure 11). Spreads further increased following the collapse of Lehman Brothers and are still well above pre-crisis levels except for the overnight rate. At the same time, deposit rates (both corporate and household) crept up alongside market rates until late 2008 and stayed at a very high level during 2009 as the competition for local deposits intensified in a context where new funding from parent banks and international markets froze (Figure 12). Reflecting the gradual increase in deposit rates, the lending spread has been on a downward-sloping trend since early 2007, which the slump amplified somewhat (Figure 13).

Figure 11. Bulgaria: Interest Rate Spreads over Eonia and Euribor, 2007-2009 (in percentage points)

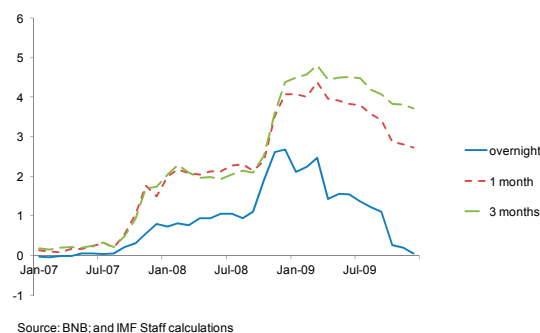


Figure 12. Bulgaria: Interest Rates on Deposits in Leva with Agreed Maturity, 2007-2009 (in percent)

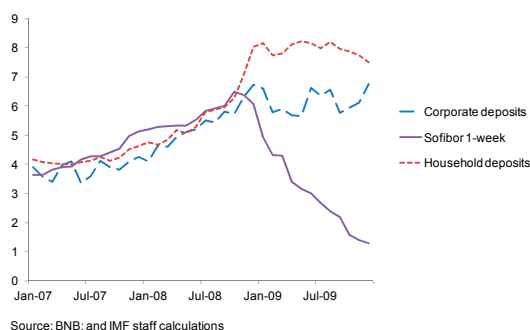
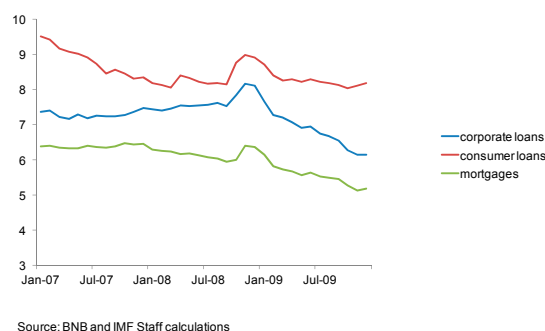


Figure 13. Bulgaria: Lending Spreads in Leva, 2007-2009 (in percentage points)



13. **The evolution of Financial Soundness Indicators suggests that the banking sector remains well capitalized and profitable in spite of the downturn (Table 3).** The capital adequacy ratio (CAR) remains strong after the banks followed the BNB's guidance to include all of their 2008 profits in their capital, and the Tier I ratio has increased significantly in part as a result of the conversion of Tier II capital. Banks entered the recession with a strong momentum in profitability, which has enabled them to remain comfortably profitable in 2009 in spite of the rapid deterioration of asset quality, even if the relaxation of provisioning rules in March 2009 helped lower impairment expenses. Even with decreasing lending spreads, banks were able to maintain a stable net interest margin in 2009 because of the combination of a higher average loan volume and a loan-to-deposit ratio well above 100, as well as lower cost of funding from foreign credit institutions.

14. **The Bulgarian banking system also has relatively stronger capital buffers than regional peers.** The level and change in level since end-2008 of the CAR, NPL ratio, coverage ratio and ROA all compare favorably to other banking systems in the region. Liquid assets appear to be more abundant in other countries, although this is likely to reflect partially a stricter definition of liquid assets in Bulgaria than in other countries (Figures 14–18).

15. Publicly available data point to a rather homogeneous increase in non-performing loans across sectors. The weakening of asset quality has followed the same pace in the corporate, consumer and mortgage sectors even if somewhat more pronounced in the latter two. Within the corporate sector, agriculture, mining, textile, manufacture of transport equipment, construction, real estate, hotels, recreation and health services appear to be deteriorating somewhat more severely.

Table 3. Bulgaria: Financial Soundness Indicators, 2006–09
(In percent)

	2006	2007	2008	2009 June	2009 December
Core indicators					
Capital adequacy					
Capital to risk-weighted assets	14.5	13.8	14.9	17.6	17.0
Tier 1 capital to risk-weighted assets	11.8	10.8	11.2	13.9	14.0
Asset quality					
Nonperforming loans to total gross loans	2.2	2.1	2.5	4.5	6.4
Nonperforming loans net of provisions to capital	2.5	2.4	4.3	10.1	15.1
Large exposures to capital	87.3	86.8	70.3	64.5	...
Earnings and profitability					
Return on assets	2.2	2.4	2.1	1.4	1.1
Return on equity 1/	25.0	24.8	23.1	13.4	10.2
Net interest income to gross income	69.4	70.3	75.1	75.2	75.1
Noninterest expense to gross income	56.0	47.8	49.9	49.5	50.0
Personnel expense to total income	18.8	17.5	19.0	18.8	18.4
Trading and fee income to total income	27.3	24.5	23.9	22.9	23.6
Liquidity					
Liquid assets to total assets	31.0	25.0	19.1	18.4	18.8
Liquid assets to total liabilities	35.7	29.2	22.6	21.1	21.8
Liquid assets to short-term liabilities	...	...	26.6	26.0	26.6
Encouraged indicators					
Deposit-taking institutions					
Capital to assets 2/	7.3	7.7	8.5	10.8	10.8
Trading income to total income	2.7	2.6	2.8	3.8	4.2
Personnel expenses to noninterest expenses	33.7	36.6	38.2	38.1	36.9
Customer deposits to total (non-interbank) loans	121.1	105.0	84.8	83.0	83.0
Foreign currency denominated loans to total loans	45.6	50.4	56.9	57.8	58.6
Foreign currency denominated liabilities to total liabilities	54.5	58.6	60.0	61.3	64.4
Net open foreign-exchange position 3/	...	...	...	...	...

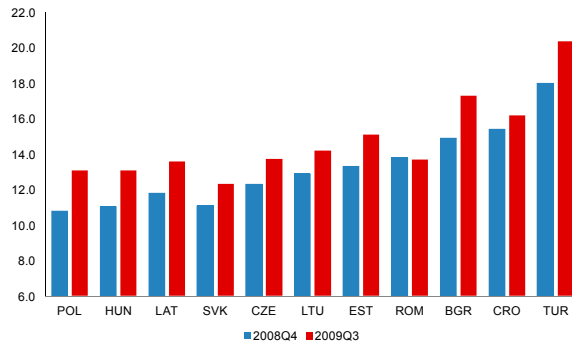
Source: BNB.

1/ Return on equity is calculated with Tier I as denominator

2/ Capital to assets is based on Tier I capital

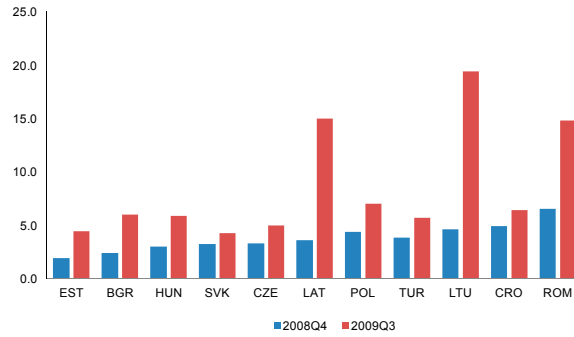
3/ The net open foreign-exchange position regulation was ended in 2005

Figure 14. Capital Adequacy Ratio 1/



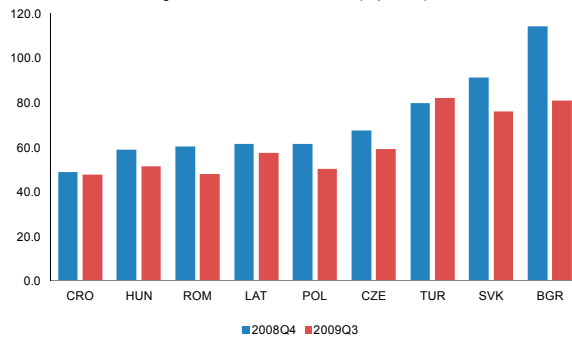
1/ 2009 data are for June in Estonia and October in Latvia and the Slovak Republic
Source: April 2010 GFSR

Figure 15. Non-performing Loans Ratio 1/



1/2009 data are for June in Estonia, October in Latvia, the Slovak Republic and Romania, November in Turkey, and December in Lithuania
Source: April 2010 GFSR

Figure 16. Provisions to NPL ratio (in percent) 1/



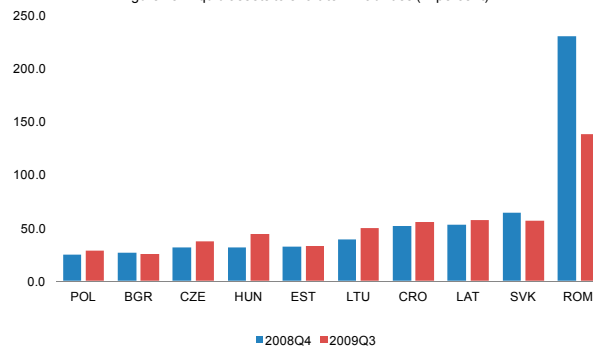
1/2009 data are for June in Croatia, October in Latvia, the Slovak Republic and Romania, and November in Turkey
Source: April 2010 GFSR

Figure 17. Return on Assets (in percent)



1/2009 data are for June in Estonia, October in Latvia, and the Slovak Republic, November in Romania and Turkey, and December in Lithuania
Source: April 2010 GFSR

Figure 18. Liquid assets to short-term liabilities (in percent) 1/



1/2009 data are for June in Estonia, October in Latvia, and the Slovak Republic, November in Romania, and December in Lithuania
Source: April 2010 GFSR

D. POLICIES TO MITIGATE THE BOOM-BUST CYCLE

16. **The BNB introduced in 2004–06 various policy measures to try to put limits on bank lending (see Table 4a).** First, the BNB tried to enhance information flows between banks and their customers so as to increase risk awareness, strengthened prudential supervision and withdrew liquidity. These measures were insufficient as banks were able to freely borrow from abroad and banks were keen to fight for their market share. In early 2005, the BNB introduced credit ceilings whereby banks were allowed to expand credit by up to 6 percent per quarter or faced a penalty in the form of marginal reserve requirements.

17. **The initial impact of the measures evaporated quickly.** Some banks observed the limits while others circumvented the new constraints or preferred to continue lending and pay the penalty. A form of circumvention was the selling of part of the loan portfolio to foreign banks or to Bulgarian nonbank financial institutions. After the credit ceiling measures lapsed at the end of 2006, some loan sales were reverted.

18. **However, the measures contributed to the building of capital and liquidity buffers.** By toughening loan classification and provisioning rules, changing the minimum capital requirements calculation, increasing reserve requirements, the banking sector built buffers which enabled the banking sector to enter the global recession from a position of relative strength.

19. **Since the onset of the global financial crisis, the BNB has relaxed or reversed policy measures taken during the boom.** In October 2008, it first reversed a measure taken in December 2004 by allowing 50 percent of cash in vault to count towards the fulfillment of reserve requirements. It also introduced some flexibility in the fulfillment of the requirements. In December 2008, it substantially decreased reserve requirements, in particular for funds attracted from abroad. In February 2009, it then changed the loan classification and provisioning requirement rules (see Box 1). The reclassification to the standard category was allowed after three standard installments, as opposed to up to six installments in the previous regulation (passed in April 2005). The loan classification was relaxed by increasing the number of days a loan can be overdue before moving to a worse category, as shown in Table 4b. Finally, an extension of the loan maturity for up to 2 years was allowed without the exposure being considered restructured. No maturity extension without reclassification was previously possible. Table 5 shows the evolution of the distribution of classified loans between end-Q1 and end-Q4 2009 as well as the associated provisions.

20. **Very recently, the Bulgarian authorities relaxed further their conservative regulatory standards on bank capital.** A 2009 survey by the European Commission of Bulgaria's fulfillment of its obligations under the EU's Capital Requirement Directive (CRD)⁵ found that the BNB's regulation was more conservative than the CRD for two main

⁵ Surveys for all member states can be found at http://ec.europa.eu/internal_market/bank/studies/index_en.htm

reasons. The first was the application of additional regulatory provisions as discussed further in Box 1. The second was the application of higher risk-weights under the standardized approach for credit risk for retail exposures (100 percent instead of 75 percent) and for mortgages (50 percent instead of 35 percent). This second deviation from the CRD has been eliminated in February 2010 and implies that the March 2010 CAR will automatically be boosted by a little less than 1 percentage point.

Box 1. Main aspects of Bulgaria's loan classification and specific provisioning rules

The BNB's Ordinance No 9 establishes the criteria for classifying risk exposures and the allocation of specific provisions for credit risk and applies to banks using Basel II's standardized approach for credit risk (i.e. all banks in Bulgaria currently). Specific provisions for credit risk are deducted from banks' own funds for the calculation of capital adequacy. This Ordinance was amended in February 2009.

Risk exposures are evaluated and classified based on the delay of amounts overdue, the assessment of debtors' financial state and the sources for repayment of debtors' obligations.

Specific provisions are calculated as the excess of the balance sheet value of an exposure over its *risk value*. The risk value is calculated by reducing contractually agreed cash flows by a percentage that depends on the classification group of the exposure and adding all or a fraction the value of recognized collaterals or guarantees (depending on the type of collateral). The classification was changed in February 2009 as described in Table 4a below.

Loan Classification as of March 31, 2009

Old classification		New classification	
Name of exposure	Overdue days	Name of exposure	Overdue days
Watch	31-60	Watch	31-90
Substandard	61-90	Nonperforming	91-180
Nonperforming	91+	Loss	181+

Source: Bulgarian National Bank.

The percentage reduction to compute the risk value is 10 percent for watch exposures, 50 percent for non-performing exposures, and 100 percent for loss exposures.

Other changes made to the ordinance in February 2009 include:

- Less restrictive criteria for reclassification as "standard"
- Greater room to extend loan maturity without triggering reclassification
- Extension of the list of recognized collateral

Table 4b. Measures Taken by the BNB During the Credit Boom and the Slump

Date	Details of Measures
June 2004	Transfer of MoF deposits from commercial banks to the BNB
July 2004	Increase in reserve requirement ratio to 4 percent on all liabilities except interbank deposits
September 2004	Transfer of Deposit Insurance Fund deposits from commercial banks to the BNB
October 2004	Cash-in-vault accepted to fulfill reserve requirements reduced to 50 percent
October 2004	Transfer of Government deposits from commercial banks to the BNB
December 2004	Increase in reserve requirement ratio to 8 percent on all liabilities except interbank deposits
December 2004	Cash-in-vault accepted to fulfill reserve requirements reduced to 0 percent
February 2005	Introduction of credit ceilings. A bank is subject to marginal reserve requirements of 200 percent if (i) it expands credit by more than 6 percent per quarter on average, taking end-Q1 2005 as the base period; and (ii) the sum of its loans and the risk-weighted off-balance sheet items converted into assets, reduced by the amount of own funds, exceeds 60 percent of all attracted funds (excluding those attracted from financial institutions). In parallel, the required reserves may be held only in domestic currency and in euro from April 1, 2005 onward.
April 2005	Introduction of daily reporting of the amount of extended credit, and of the data required for the computation of marginal reserve requirements. The quarterly growth rate set by the BNB is calculated as an increase of the average value of credit at the end of each business day during a quarter. The allowed average growth rates are: 5 percent for a quarter; 12.5 percent for 6 months; 17.5 percent for 9 months and 23 percent for 12 months.
April 2005	Regulatory minimum capital adequacy ratios (CARs) must be satisfied while excluding current profits from the capital base.
April 2005	Introduction of monthly reporting on capital adequacy. Loans overdue by more than 30 days, 60 days, or 90 days, have to remain classified as "watch," "substandard" and "non-performing," respectively, for a minimum of 6 months. Loans that are classified as such need to be provisioned in line with BNB regulations for these categories.
November 2005	Quarterly limits on the penalty-free growth of credit are extended beyond March 31, 2006 to end-2006.
November 2005	The penalty rate for breaching credit ceilings is temporarily increased for banks exceeding the limit by 1-2 percent, from 200 to 300 percent, and to 400 percent for excesses of more than 2 percent, effective Q1 2006.
November 2005	The provisioning requirements for impaired household credits is raised: from 10 percent to 20 percent for loans overdue by 30-60 days ("watch" category), and from 50 percent to 75 percent for loans overdue by 60-90 percent ("substandard" category)
December 2005 and June 2006	Banks are required to disclose effective interest rates on their consumer loans; this disclosure is extended to all household loans up to the amount of BGN 40,000 following the adoption of the new consumer protection law in June 2006.
February 2006	The excess of local non-government, non-bank sector bonds issued to banks over and above their stock outstanding on December 31, 2005, are brought under the credit limits starting from Q1 2006.

(Table 4b continued)

February 2006	The risk weighting for mortgage loans used in the calculation of the capital adequacy ratio is effectively raised, by lowering the loan-to-value ratio from 70 percent to 50 percent, from April 1, 2006.
February 2006	A recommendation is issued to banks not to extend credit to households which do not have disposable income of at least BGN100 per household member per month after taxes and all debt service (including that for the requested loan) have been deducted from officially declared income. Non-adherence to this recommendation could result in additional supervisory measures.
May 2006	Banks are required to report information on all loans to the credit registry including loans that have been sold or moved off balance sheet.
September 2007	Reserve requirements are increased from 8 to 12 percent.
October 2008	Relaxation of reserve requirements. 50 percent of commercial banks' cash on hand are recognized as reserve assets. Commercial banks' access to the reserves they keep with the BNB is made easier as banks are allowed a breach of 1 percentage point during the holding period.
November 2008	Relaxation of reserve requirements: (i) effective December 1, 2008, the minimum required reserves on all attracted funds of the banks are decreased from 12 percent to 10 percent; (ii) effective January 1, 2009, the minimum required reserves on funds attracted by the banks from abroad is decreased from 10 percent to 5 percent; and (iii) effective January 1, 2009, no minimum required reserves is imposed on funds attracted from the state and local government budgets.
February 2009	The interest rate on the BNB's LOLR window is reduced from 150 percent of the interbank rate to 120 percent.
February 2009	The loan classification and provisioning rules are loosened by increasing the number of days within each classification category. Loan restructuring through maturity extensions up to two years does not lead to reclassification.
February 2010	The requirement to hold a general shareholders' assembly for the recognition of current profit or profit from the previous year as a capital base element is dropped.
February 2010	For banks using the standardized approach to credit risk, the risk-weight for retail exposures is reduced from 100 percent to 75 percent, and the risk-weight for mortgage exposures is reduced from 50 percent to 35 percent.

Source: Bulgarian National Bank.

Table 5. Bulgaria: Distribution of Impaired Loans
(In thousand leva)

	Watch Exposures			Nonperforming Exposures			Exposures Lost		
	Value Before Impairment as per IAS 39	Impairment as per IAS 39	Specific Provisions for Credit Risk	Value before Impairment as per IAS 39	Impairment as per IAS 39	Specific Provisions for Credit Risk	Value Before Impairment as per IAS 39	Impairment as per IAS 39	Specific Provisions for Credit Risk
2009 Q1	1,756,206	84,574	41,894	528,511	101,706	38,171	1,071,225	705,277	161,819
2009 Q4	3,622,411	129,346	92,632	1,021,055	173,688	94,411	2,162,514	1,147,284	469,206

Source: BNB.

E. SHORT-TERM RISKS

21. **The main two risks currently are the continued weakening of asset quality and a reversal of parent funding to their Bulgarian subsidiaries.** As discussed above, classified

loans have increased significantly during 2009 and it is likely that this negative momentum will continue for several more quarters looking forward. During the first three quarters of 2009, many banks seem to have preferred rolling over and marginally restructuring loans until the economic prospects of their customers have become clearer. More resolute loan restructuring seems to have taken place during Q4 2009 and this trend could continue in the beginning of 2010. With many subsidiaries operating with a loan-to-deposit ratio well above 100, the banking system depends on parent funding for the extension of credit. Although all foreign-owned institutions appear adequately capitalized and sufficiently liquid at the current juncture, persistent financial tensions in a parent bank's country of origin (which could result from market concerns about sovereign debt sustainability) could spill over to Bulgaria.

Credit Risk

22. **This section presents a very simple top-down stress test, based on an estimated macro-credit risk equation.** We first estimate how the quality of banks' loan portfolio is likely to evolve over the next two years based on the historical relationship between classified loans and the macroeconomic environment. We then ask whether banks' profitability would be strong enough to maintain capital above the required minimum while absorbing the losses associated with the new classified assets.

23. **The estimates of the macro-credit risk model are presented in Table 6.** The BNB publishes monthly data on "bad and restructured" loans for the three main categories of loans: corporate loans, consumer loans and mortgage loans. The NPL series is not available at a disaggregated level and we thus decided to use the data on "bad and restructured" loans, which are defined as the sum of restructured loans and loans in the worse two categories of the classification shown in Table 4b.⁶ We thus estimate the relationship between the change in the "bad and restructured" loan ratio and the change in the output gap⁷. No other macroeconomic variable is found to be econometrically significant once the effect of the output gap is accounted for, except for loan growth during 1998-2002 which mechanically reduced the classified loan ratio of corporations as the share of legacy NPLs in that sector gradually shrank. An autoregressive term is included as it is strongly suggested by the data and three dummy variables are included to account for a change in the definition of the series in the third quarter of 2006 (with an effect spread over two quarters)⁸ and the loosening of loan classification rules in the first quarter of 2009. The sample period is 1998Q3-2009Q4.

⁶ As shown in Table 4b, the worse two categories are "substandard" and "non-performing" until February 2009 and "nonperforming" and "loss" afterwards.

⁷ The output gap series is constructed using the methodology used in chapter ZZZ of this paper. The choice of lag for the output gap variable is determined based on the Akaike information criterion.

⁸ Until Q2 2006, the data include only the overdue principal. Since then, the total amount of exposure (principal and interest) is included.

Table 6. Macro-Credit Risk Equations

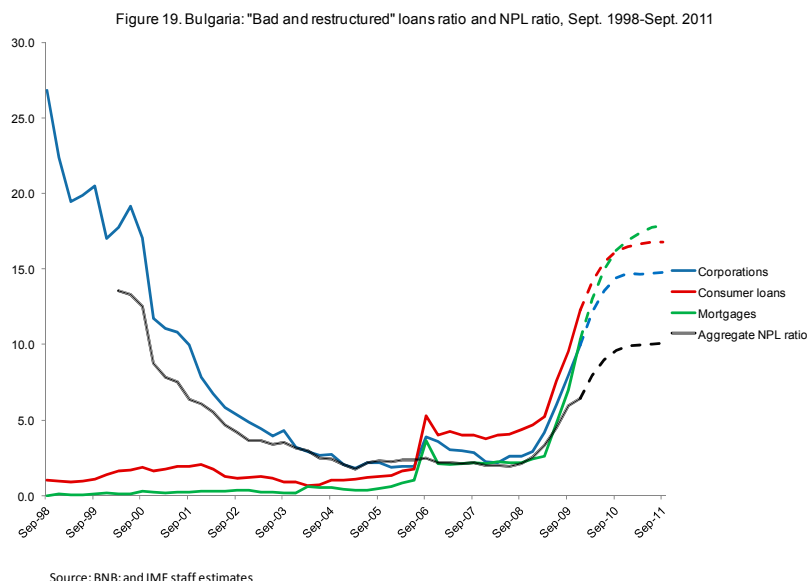
Variable	Corporate				Consumer				Mortgage			
	Coefficient	S.E.	p-value		Coefficient	S.E.	p-value		Coefficient	S.E.	p-value	
D(NPLRATIO(-1))	0.29 **	0.11	0.02		0.53 ***	0.14	0.00		0.63 ***	0.13	0.00	
D(OUTPUTGAP)					-0.50 ***	0.12	0.00		-0.56 ***	0.10	0.00	
D(OUTPUTGAP(-1))	-0.80 **	0.29	0.01									
DUMMY_Q3_2006	2.23 *	1.11	0.05		3.77 ***	0.40	0.00		2.90 ***	0.34	0.00	
DUMMY_Q4_2006	-0.28	1.15	0.80		-2.94 ***	0.64	0.00		-2.97 ***	0.50	0.00	
DUMMY_Q1_2009	0.96	1.11	0.39		-0.20	0.41	0.62		-0.67	0.35	0.13	
LOAN GROWTH * DUMMY_98-02	-0.14 ***	0.04	0.00									
R-squared	0.43				0.80				0.81			
Adjusted R-squared	0.36				0.78				0.79			
Log likelihood	-63.5				-18.41				-16.2			
Durbin-Watson stat	2.09				1.86				1.52			
Akaike info criterion	3.16				1.06				0.96			
Schwarz criterion	3.40				1.27				1.17			

Sources: IMF staff estimates.

24. **Results indicate that the “bad and restructured” loan ratio is forecast to increase by another 4–6.5 percentage points for all categories of loans in 2010 and 0-1 percentage point in 2011 (Figure 19) under staff’s baseline scenario.** The peak of the “bad and restructured” loan ratio is expected to be reached in the third quarter of 2011. By matching end-2009 supervisory and monetary data, one can estimate the share of restructured loans in total classified loans at 30 percent. Assuming that the flow of new “bad and restructured” loans is made for 30 percent of restructured loans and 70 percent of NPLs across categories, we would thus expect a further increase by about 3.5 percent of the NPL ratio during 2010 under the baseline scenario.

25. **Several caveats should be attached to these results.** In particular, our dataset includes only net flows of “bad and restructured” loans as opposed to gross flows. We are thus unable to account for write-offs or sales of classified loans. Also, the published series of “bad and restructured” loans we use mixes restructured loans (which could be performing) with non-performing loans, and the dynamics of these two series are probably somewhat different depending on the state of the business cycle and calendar effects. There are also uncertainties associated with the estimation of the output gap series and its projection over the next two years. Furthermore, the point estimates are very sensitive to the inclusion of the last few observations in the sample and the sample does not include a full economic cycle. It is quite possible that the impact of macroeconomic conditions on the evolution of the quality of banks’ loan portfolio be asymmetric during recessions and recoveries. Moreover, it is possible that, as suspected in other countries of the region, some banks are ever-greening

loans and under-reporting restructured loans. Thus, both the initial level of classified loans and the elasticity of the change of the classified loan ratio to the change in output gap could be underestimated. For all these reasons, our estimates are likely biased, our forecast of the classified loan ratio is subject to possibly significant margins of error, as is our forecast of associated impairment losses below.



26. **Nevertheless our forecast is in line with results obtained by a common rule of thumb established through cross-country studies.** The rule suggests that the NPL ratio increases by 0.7 times the difference between trend growth and actual growth during the two years following the onset of a downturn. This rule has recently been used in the context of the regional CESE stress-testing exercise. In the case of Bulgaria, assuming pre-recession trend growth of 5 percent, it suggests an increase in the NPL ratio of 7 percentage points during 2009 and 3.5 percentage points during 2010, which is a close match to the estimate based on our regression.

27. **In the baseline scenario, aggregate banking sector profits should be able to generate enough capital to cover the increase in corresponding provisions in 2010.** We focus our analysis of the impact of the increase in classified loans on the 24 banks which are not branches of foreign banks. The stock of “bad and restructured” loans is forecast to increase by 2.4 billion leva during 2010, assuming a constant stock and distribution of loans across the corporate, consumer and mortgages categories. As explained above, we expect 70 percent of that amount to be either “non-performing” or “loss”. Then, assuming all new NPLs in fact turn into a “loss” during the course of the year and using reasonable loss given default (LGD) estimates⁹, the total provisioning charge would amount to 0.87 billion leva as

⁹ These LGD estimates were compiled during the 2008 FSAP Update mission based on a survey of commercial banks. A recent note by Moody’s (2009) indicates that Moody’s baseline LGD assumptions are 50 percent for
(continued)

per IAS 39 (see Table 6), which represents a provisioning rate of 52 percent, in line with the current provisioning rate for the “loss” loan category as per IAS 39 (see Table 5). Then, assuming a transition rate of 50 percent to the “loss” category for “non-performing” exposures at end-Q4 2009 would generate an additional provisioning expense of 180 million leva, applying current IFRS provisioning rates. Finally, we compute from BNB published data the flow of IFRS provisions in 2009 for loans in the “standard” and “watch” categories to be 400 million leva. Without any detailed information on the reason why such an amount was provisioned in 2009, we arbitrarily assume that the flow of impairment for these two categories in 2010 will be half of the 2009 amount, or 200 million leva. Total impairment expenses in 2010 would thus amount to 1.25 billion leva, or about 20 percent more than in 2009. The pre-tax pre-provisions profitability of the 24 banks has remained unchanged between 2008 and 2009 slightly below 1.9 billion leva and we expect this level of gross profitability to be maintained in the baseline. This means that banks should be able to generate enough profits to cover impairment charges in the aggregate during 2010. Impairment charges in 2011 are expected to be quite manageable as the classified loan ratio is not expected to increase significantly then.

Table 7. Loan Loss Projections from new NPLs in 2010 under the baseline scenario
(In bn leva)

Type of loan	Amount	NPL increase	LGD (in percent)	Loss Estimate
Corporate	30.7	1.01	55	0.56
Mortgages	8.6	0.395	30	0.12
Consumer	9.5	0.279	70	0.2
Total	48.8	1.68		0.87

28. **However this conclusion is subject to a number of qualifications.** First, it is obtained under staff’s baseline scenario. Should there be delays in output recovery, or should there be reversal of parent funding to their Bulgarian subsidiaries, credit losses would turn out higher and earning generation would turn out weaker than forecast under the baseline. Under a downside scenario where real GDP growth in 2010 would be -2 percent (the lowest current private sector public forecast) instead of 0.2 percent as projected by IMF staff, the NPL ratio at end-2010 would be one percentage point higher. Assuming LGDs and provisioning rates for the “loss” category 5 percentage points higher than in the baseline, total impairment expenses in 2010 would then reach 1.7 billion leva, which would then bring pre-tax profit to about 200 million leva. Second, given the drop in the value of real estate prices and the tightness of the market for foreclosed assets, banks may still be relying on too optimistic assessments of collateral and thus may not have provisioned to the extent necessary.

29. **The net impact on the end-2010 aggregate regulatory capital adequacy ratio should be close to zero or slightly positive.** As explained above in Box 1, the BNB requires

corporate, 60 percent for SMEs, 60 percent for commercial real estate, 90 percent for consumer loans and 15 percent for mortgages.

banks to set aside “specific” provisions in addition to IFRS provisions, which provides the banking sector with an additional buffer. These are not treated as an accounting expense in the profit and loss statement but are taken into account in the computation of regulatory capital. The flow of these “specific” provisions amounted to 439 million leva in 2009. A flow of 1.68 billion leva of new “loss” loans and the transition of 500 million leva of loans from “non-performing” to “loss” during 2010 would likely generate the need for an additional 430 million leva of specific provisions, assuming the same provisioning ratio as at end-2009 shown in Table 5. As this is a little smaller than our baseline forecast pre-tax IFRS profit, we would expect aggregate regulatory capital to remain about flat or to increase slightly at a high and comfortable level.¹⁰

30. Still, the situation of some individual banks may be less comfortable.

Profitability in 2009 was negative overall for two medium-sized banks (including one branch) and on a downward quarter-on-quarter trend for several others. Moreover, the rate of provisioning was close to zero or even negative in several medium-sized banks and one large bank, which may suggest under-provisioning. In the absence of publicly available data on individual banks’ capital adequacy ratio, one can nevertheless speculate that credit losses would require recapitalization in a small number of institutions under the current regulatory requirements.

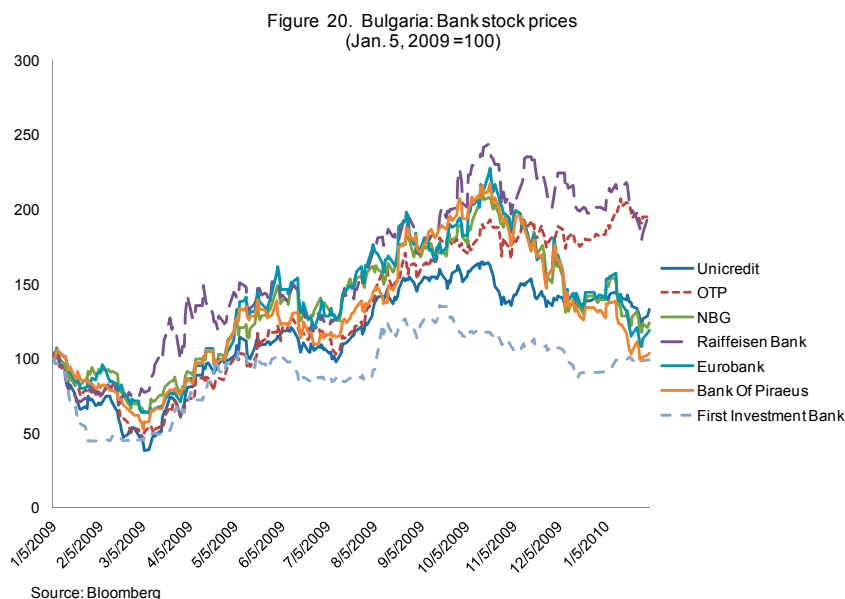
31. The Bulgarian authorities still have room to relax their conservative regulatory standards on bank capital in case of need. The rules for the calculation of additional regulatory provisions discussed in Box 1 were amended in February 2009 and could be loosened again. In addition, Bulgaria has chosen not to include unaudited current profits in the calculation of regulatory capital, as this is left to the discretion of national authorities by the CRD, but could decide to do so in the future. Also, the minimum regulatory capital is set at 12 percent in Bulgaria, compared to 8 percent at the EU level. Therefore the BNB still has several instruments to implement further a counter-cyclical macro-prudential policy within the confines of EU regulation.

Funding and Liquidity Risk

32. Another source of risk is a stagnation of reversal of parent bank funding to their Bulgarian subsidiaries. As discussed above, the banking system crucially depends on parent funding for the extension of credit. A particular source of concern in this respect are Greek banks who have recently come under market pressure (Figure 20) as all major Greek banks were downgraded by rating agencies in December 2009. The action was prompted by a weakening of the banks’ stand-alone financial strength, combined with the rating agencies’

¹⁰ Of course, this is excluding the one-time positive impact of the reduction in risk-weights on the CAR described in paragraph 20 and the inclusion of 2009 profits into the capital base, both of which are expected to take effect at end-Q1 2010. The combined effect of these measures should be to raise the aggregate CAR by about 2 percentage points.

reassessment of Greece's ability to support its banking system, following the lowering of the national government debt rating amidst concern over Greek public debt sustainability. Moreover, Greek banks have relied a lot on the ECB to obtain liquidity and the withdrawal of the ECB's exceptional liquidity supply operations by the end of 2010, including the tightening of collateral requirements, could signify that Greek banks would have to scale back their funding to their SEE subsidiaries over the course of 2010 and 2011.



33. Should severe liquidity tensions emerge in a small or medium-size institution, the Bulgarian authorities' emergency liquidity assistance framework should be able to provide the necessary support. The BNB is restricted by law to provide LOLR assistance only to solvent banks experiencing an acute need of liquidity that cannot be satisfied from other sources, and for a maximum of three months (LBNB Article 33 and BNB Ordinance No. 6). Eligible collateral is limited to monetary gold, some foreign currencies (euro, US dollar and Swiss franc) and liquid securities issued or guaranteed by the Bulgarian government or by some foreign governments and central banks. In addition, the government could also act as a lender of last resort by drawing on the fiscal reserve (i.e. the large central government deposits at the BNB). The Treasury mainly uses the BNB as its bank, but it can also place deposits with commercial banks provided they have eligible collateral, which comprises cash, domestic government securities and some foreign government securities.

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IV. CAPITAL-INFLOWS AND CURRENT ACCOUNT DEFICITS IN REGIONAL PERSPECTIVE¹

A. INTRODUCTION

1. **As in other countries in Emerging Europe, Bulgaria received large capital inflows and experienced a significant increase in credit between 2003 and 2008.** This led to a surge in imports and a sharp increase of the current account deficit as domestic demand outgrew gross domestic product in the context of rising wages and a shift of resources toward non-tradable activities.

2. **This fact-finding note puts these developments in a regional context to show that they were not unique to Bulgaria.** Several other countries in Emerging Europe also received large capital inflows and experienced high current account deficits. The note looks at simple trends and co movements in key variables to identify key macroeconomic developments.² Section II focuses on capital flows and domestic demand. Section III looks into exports, the real exchange rate and the share of non-tradable activities in output. Section IV shows developments in foreign direct investment, and section V concludes.

B. CAPITAL INFLOWS AND DOMESTIC DEMAND

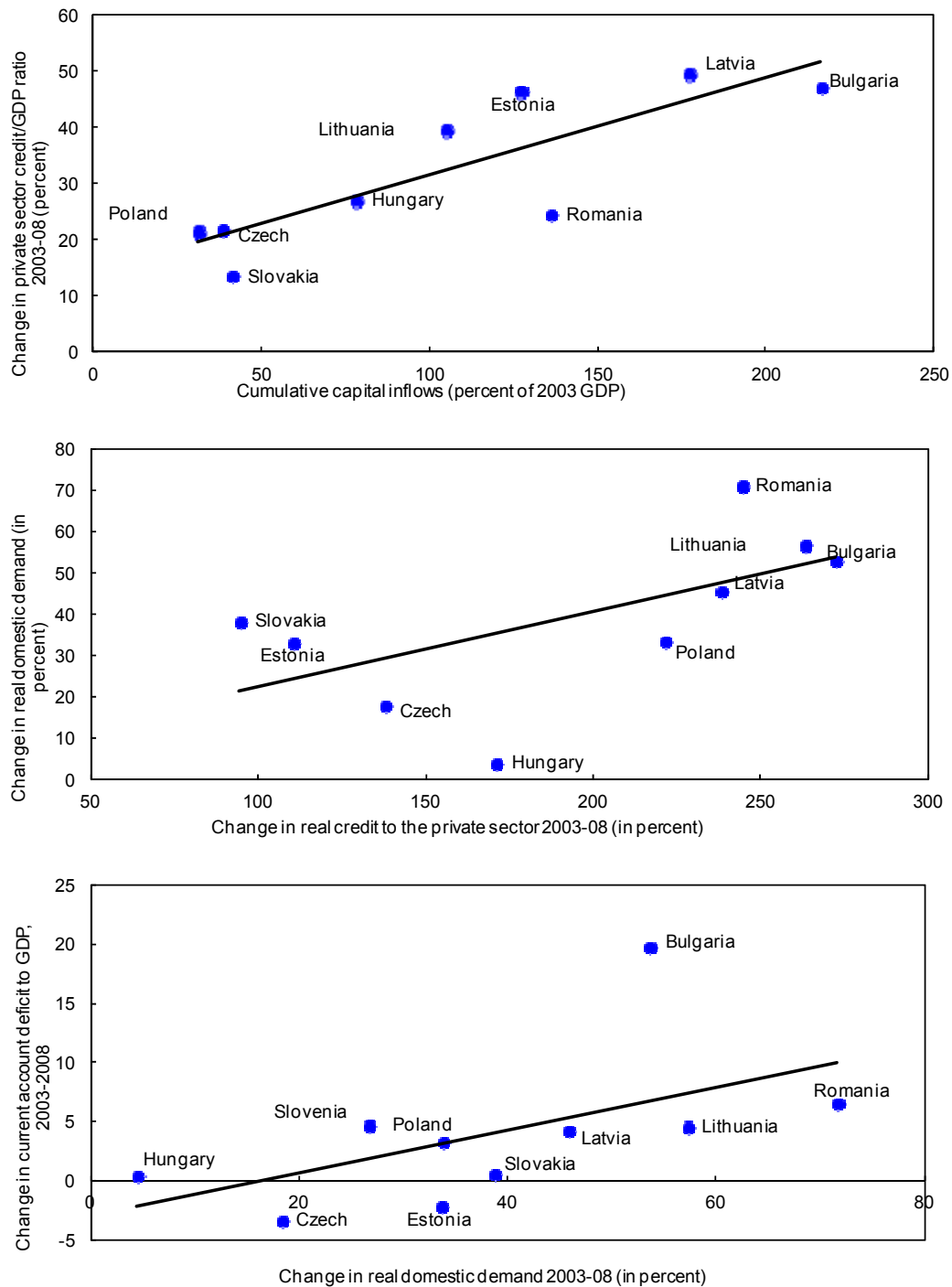
3. **Between 2003 and 2008, large capital inflows in Emerging Europe fueled an increase in private sector credit.** Cumulative inflows between 2003 and 2008 ranged from 30 percent of 2003 GDP in Poland to 215 percent in Bulgaria. These fed into private sector credit—the larger the capital inflows, the more pronounced credit growth (Figure 1). The latter was particularly high in the Baltic countries and Bulgaria, where the credit to GDP ratio increased by more than 40 percentage points. Credit growth was more moderate in Slovakia, Poland, and the Czech Republic.³

¹ Prepared by Esteban Vesperoni.

² The note aims at motivating further study from the identification of stylized facts. More definitive conclusions involving causality and relative contributions to macroeconomic developments would require further analysis.

³ Data on capital inflows and credit to the private sector was obtained from the IMF's World Economic Outlook database.

Figure 1. Emerging Europe: Capital Inflows, Credit and Domestic Demand



Source: World Economic Outlook.

4. **Credit growth was associated with an increase in domestic demand and rising current account deficits.** More rapid credit growth was linked to higher real domestic demand growth (see Figure 1). Bulgaria, Latvia, Lithuania, and Romania experienced the largest increase in domestic demand between 2003 and 2008, and also showed the strongest deterioration in their current account, between 5 and 20 percentage points of GDP (see Figure 1).⁴ Bulgaria had a particularly large deterioration of its current account balance, most likely because of higher FDI inflows compared with other economies in Emerging Europe (see Section IV).⁵

5. **Wages also increased rapidly, resulting in a significant appreciation of the real exchange rate.** Pressures on labor markets were reflected in strong growth in domestic demand and a rapid increase in wages in most economies in Emerging Europe (Figure 2).⁶ In fact, countries that experienced larger increases in domestic demand showed a stronger appreciation in their manufacturing unit labor cost (ULC) based real exchange rate (see Figure 2).⁷ In the case of Bulgaria, though, wages are low both compared to productivity levels and to other countries in the region (Figure 3).⁸

⁴ Changes in the current account are measured as the change in the current account deficit to GDP ratio between 2003 and 2008.

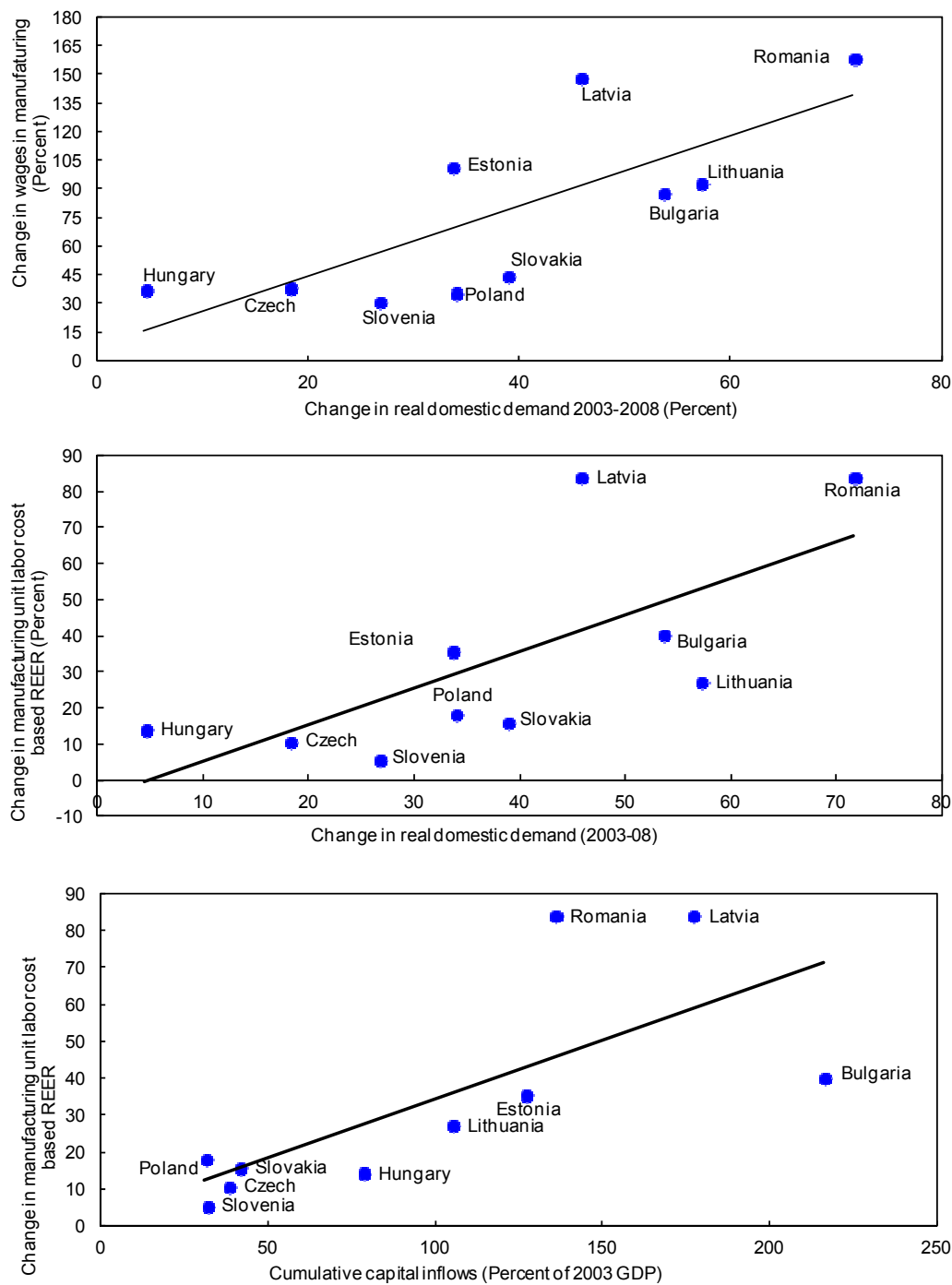
⁵ Data on domestic demand and current account deficits come from the IMF's World Economic Outlook database.

⁶ Data on wages come from Haver Analytics.

⁷ Data on real exchange rate come from the European Commission, Economic and Financial Affairs. This exchange rate deflates the relative movements in the nominal exchange rate by the increase of wages in the manufacturing sector in relation to the country's trade partners.

⁸ The staff report compares wages in Bulgaria against an even broader set of countries in Europe, and the same picture arises.

Figure 2. Emerging Europe: Domestic Demand, Wages, and the Real Exchange Rate

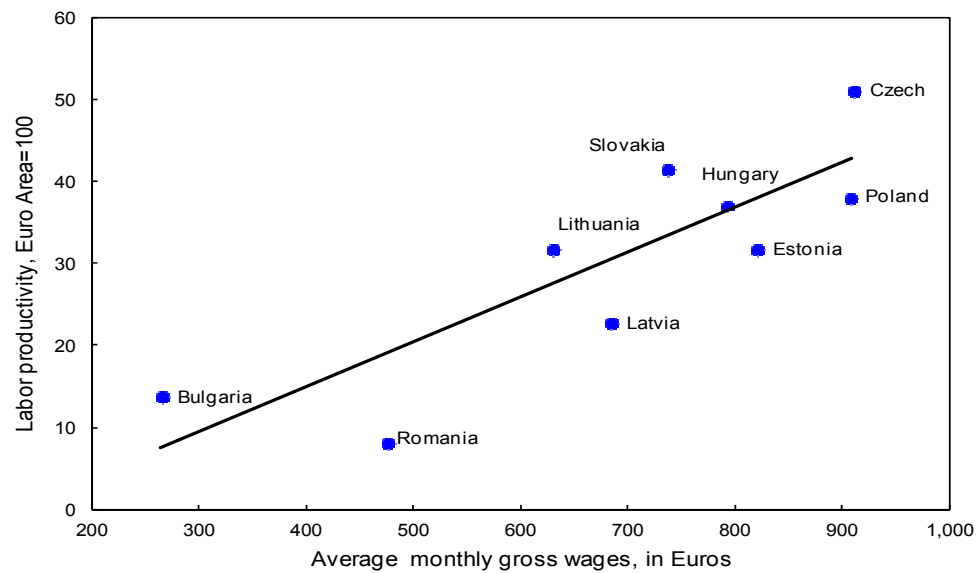


Source: World Economic Outlook, European Commission, and Haver Analytics.

Figure 3. Emerging Europe: Wages

Hourly Labor Costs, 2008
(Euros)

Bulgaria	2.42
Latvia	5.71
Lithuania	5.86
Slovakia	7.17
Estonia	7.61
Hungary	7.61
Poland	7.89



Source: Eurostat, Haver, and IMF staff estimates

6. **Countries that received more capital inflows experienced larger real exchange rate appreciations.** The increase of the manufacturing ULC based real exchange rate was the highest in Latvia and Romania. Real exchange rate appreciations have been milder in countries receiving relatively modest inflows—Poland, the Czech Republic, Slovenia, and Slovakia (see Figure 2). In the case of Bulgaria, the real exchange rate appreciation experienced between 2003 and 2008 was relatively mild if analyzed in light of the large amount of capital inflows received during the same period, i.e. its appreciation is similar to the one in countries that received about half the capital inflows in Bulgaria (measured as percent of gross domestic product) over the same period.⁹

C. EXPORTS GROWTH AND THE SHIFT TOWARD THE NON-TRADABLE SECTOR

7. **Exports growth in Emerging Europe slowed down after 2005.** Except for Lithuania and Slovakia, exports growth peaked for all new members in 2005. However, it decelerated since then in most countries, most sharply in the cases of Latvia and Estonia (Figure 4). In this context, there were some countries—Latvia, Lithuania, Romania, the Czech Republic, and to a lesser extent Bulgaria, Poland and Hungary—that managed to keep higher growth rates in 2008 compared with 2003. Exports growth rates in 2008 for Estonia and Slovakia were lower than the ones in 2003. In the case of Bulgaria, while exports growth fell since it peaked in 2005—at almost 15 percent—it did so only slightly (see Figure 4).¹⁰

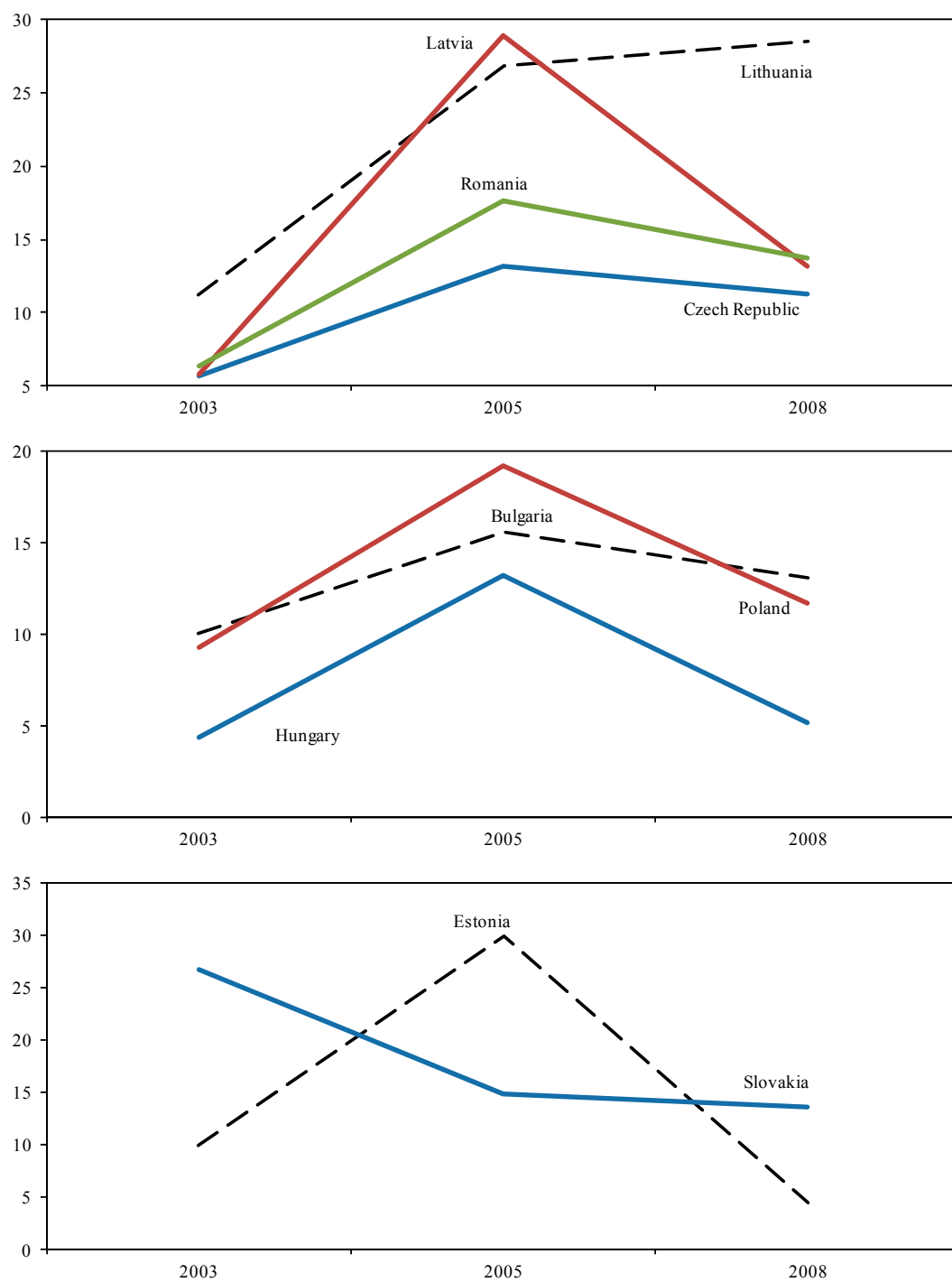
8. **While export to GDP ratios increased in most countries in 2003–08, the increase was less pronounced in countries that experienced larger real exchange rate appreciations.** The exports to GDP ratio in the Czech Republic, Slovenia and Hungary increased by 15–20 percentage points, while the ratio in Latvia increased only modestly; and in Romania it actually declined (Figure 5). This mirrors different developments in the manufacturing ULC based real exchange rate. In the case of Bulgaria, the exports to GDP ratio increased by almost 10 percentage points between 2003 and 2008, more than in some countries that experienced milder real exchange rate appreciations.¹¹

⁹ Preliminary research at the National Bank of Bulgaria argues that the real exchange rate appreciations in Emerging Europe are mainly driven by fundamentals and economic convergence. This work suggests that appreciations usually respond to higher rates of labor productivity in the relevant country compared to the trade-weighted increase in productivity in its partners.

¹⁰ Data for exports comes from the IMF's World Economic Outlook database.

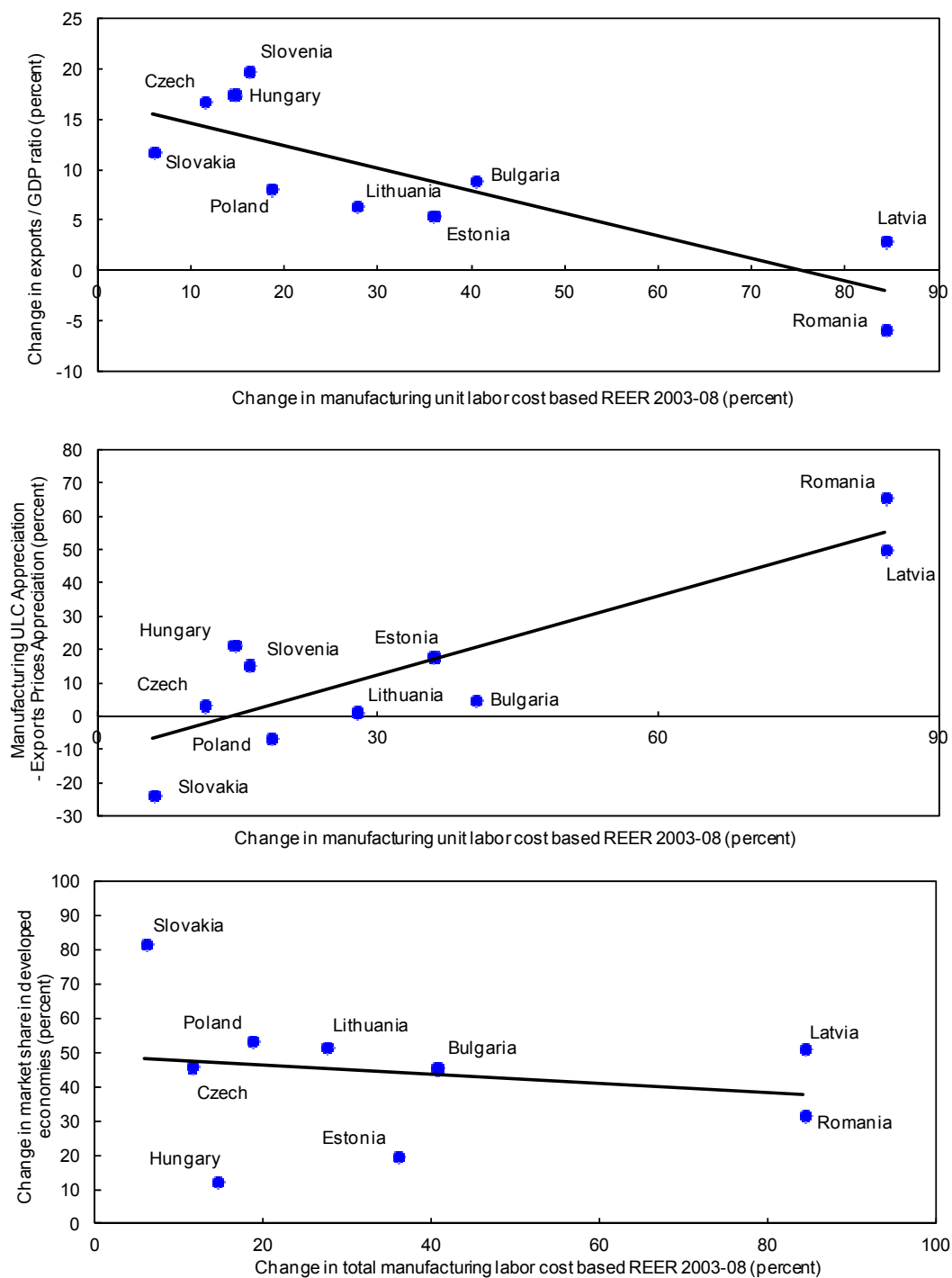
¹¹ Ongoing empirical research at the Bulgarian National Bank suggests that the exchange rate appreciation in Bulgaria does not have a significant impact on export developments, which are mostly explained by trends in external demand. The BNB study argues that most of the recent appreciation of the Bulgarian real exchange rate responds to fundamentals and does not reflect a loss in competitiveness.

Figure 4. Emerging Europe: Exports Growth Rates



Source: World Economic Outlook.

Figure 5. Emerging Europe: Exports



Source: BNB, European Commission, Eurostat, and World Economic Outlook.

9. **The real exchange rate appreciation may have affected export growth through declining profit margins.** In countries where the manufacturing ULC based real exchange rate has increased the most, the difference between the latter and the export price based real exchange rate has increased as well—suggesting that higher unit labor costs have not been compensated by higher export prices (see Figure 5). The evidence on market shares is less clear cut. All new member countries have increased their market share on imports in countries in the European Union, and it is not clear that in economies that experienced a larger real exchange rate appreciation market shares have lagged in relation to other countries (see Figure 5).

10. **Countries that experienced a larger real exchange rate appreciation also showed a more pronounced resource reallocation toward non-tradable activities.** The increase in the share of non-tradables (defined as the increase in the share of financial and real estate services on GDP net of the increase in the share of manufacturing) was more pronounced in countries that experienced the sharpest ULC real exchange rate appreciations and the higher current account deficits (Figure 6).¹² This is to a large extent explained by a drop in the share of manufacturing in GDP. Latvia and Romania, which experienced the largest real exchange rate appreciations, showed a fall in the shares of manufacturing activities between 1 and 2½ percentage points between 2003 and 2008. On the other hand, countries showing relatively mild real exchange rate appreciations—the Czech Republic, Slovenia and Poland—experienced an increase in the share of manufacturing activities on GDP (see Figure 6). Sharper increases in house prices during the last years were also coupled with larger real exchange rate appreciations (see Figure 6).¹³

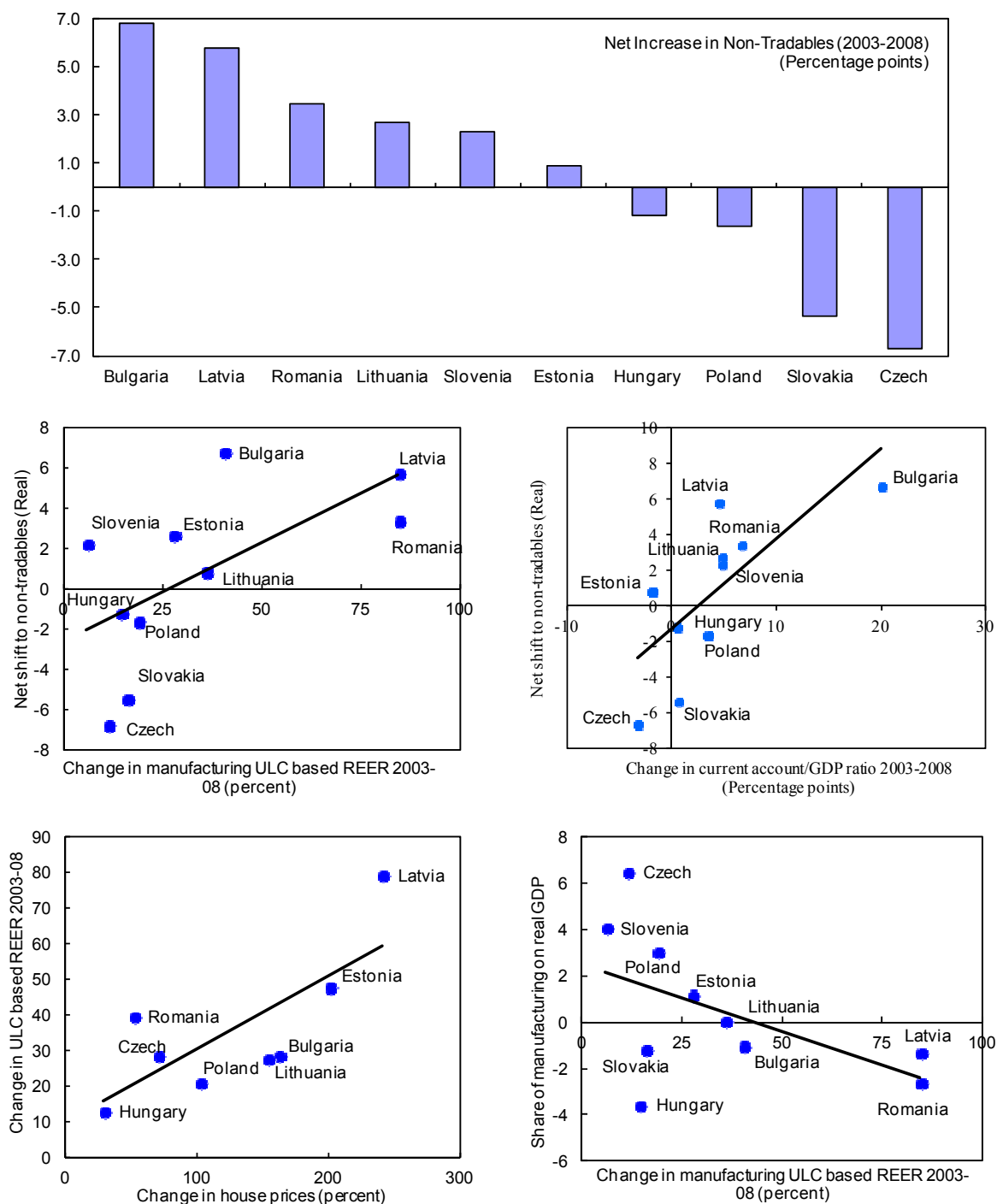
D. FDI INFLOWS

11. **Bulgaria was by far the main recipient of foreign direct investment between 2003 and 2008.** Average annual FDI inflows in Bulgaria reached almost 28 percent of 2003 GDP during the period, to total 165 percent of GDP (Figure 7). A second group of countries—Estonia and Lithuania—received on average between 10 and 15 percent of 2003 GDP each year during the period. The rest of new member countries received between 5 and 10 percent of GDP annually on average.

¹² A caveat to this finding is that most economies in Emerging Europe have experienced a significant increase in output per capita, and the services sector usually becomes larger in richer economies.

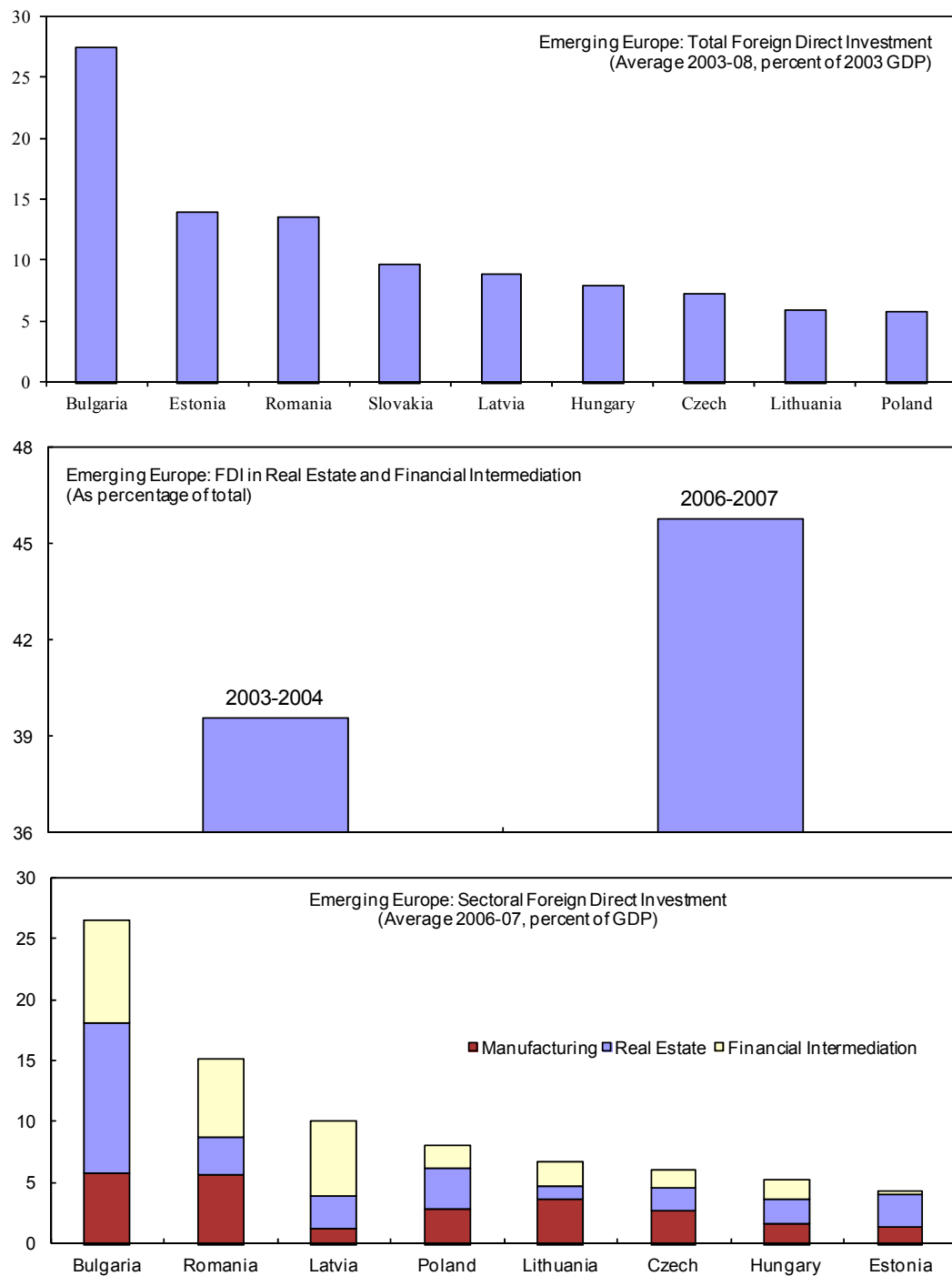
¹³ Data for sectoral GDP come from Haver Analytics. Data for housing prices come from IMF country desks, based on central bank and real estate reports.

Figure 6. Emerging Europe: Real Exchange Rate and Sectoral GDP



Source: World Economic Outlook, European Commission, Haver Analytics.

Figure 7. Emerging Europe: Foreign Direct Investment



Source: IMF, based on authorities' data.

12. **A large part of FDI in Emerging Europe has gone to the non-tradable sector.**

FDI in real estate and financial intermediation activities increased from less than 40 percent of the total in 2003–04 to 46 percent in 2006–07 (see Figure 7).¹⁴ At 5½ percent of GDP, Bulgaria shows the highest ratios in foreign direct investment in manufacturing activities. At 12 and 8 percent of GDP respectively, it also received the highest ratios of foreign direct investment in real estate and financial intermediation activities in the region (see Figure 7), followed by Romania and Poland.

E. CONCLUSIONS

13. **During 2003–08, many countries in Emerging Europe, including Bulgaria, received large capital inflows.**

These inflows contributed to rapid growth in domestic demand and significant real exchange rates appreciations. Countries that experienced larger real exchange rate appreciations have witnessed larger current account deficits, less buoyant exports, a decline in exports profit margins, and a shift in resources from the tradable to the non-tradable sector.

14. **The real exchange rate appreciation in Bulgaria was not unique.** Several countries in Emerging Europe experienced real exchange rate appreciations between 2003 and 2008. In the case of Bulgaria, it reached 40 percent. It was not as high as in Latvia and Romania, but it was higher than in other countries.

15. **Now that the capital-inflows driven boom has ended, it is likely that the real exchange rate appreciation will stop.** Indeed, several countries in the region have already experienced a depreciation of their real exchange rate, as labor markets are adjusting rapidly.

16. **Despite the real exchange rate appreciation of the past few years, the wage level in Bulgaria is still low compared to other countries.** This suggests that the wage level may not be a problem in shifting activities towards the tradable sector.

¹⁴ Data for foreign direct investment come from IMF's country desks, based on country authorities' data, mainly central banks. FDI in real estate refers to "real estate and business activities" in central banks' data on foreign direct investment, as most countries in the sample do not disentangle between these two activities. Given that other business activities (like tourism, financial services, public services, transport, retail services) are shown separately, it is natural to assume that business activities in that line are mostly associated to real estate services.