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Bulgaria: Selected Issues and Statistical Appendix

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BULGARIA

Selected Issues and Statistical Appendix

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Approved by European Department

July 18, 2006

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I. Is Bulgaria's Current Account Sustainable?[1]

A. Introduction

1. In 2005 Bulgaria's current account deficit reached nearly 12 percent of GDP, up sharply from the 5-6 percent range experienced in the two years immediately preceding. Deficits of such magnitude have traditionally been considered large, and thus reason to undertake policy action to correct the imbalances. However, in recent years, with the increasing integration of capital markets and the rapid development of emerging economies, a number of countries have experienced very large current account deficits that, in many instances, can be expected to persist into the future. Increasingly, research to evaluate whether such deficits are sustainable, and indeed whether they are desirable, has questioned the validity of the conventional wisdom. In Bulgaria, the speed and extent of the deterioration of the current account deficit makes such an evaluation especially timely.

2. This chapter will seek to answer these questions based on three approaches. As previously done in Leigh (2005), an estimated model of regional income convergence due to Blanchard and Giavazzi (2002) will be used to determine how much of Bulgaria's current account deficit may be explained by a long-term catch-up process with the European Union (EU), based on the historical experience of the OECD countries, the new member states, as well as Bulgaria and Romania. Second, the implications for debt sustainability of the projected path of the current account, and the composition of its financing between foreign direct investment and debt creating flows, will be discussed. Finally, following Lane and Milesi-Ferretti (2005, 2006) the chapter will discuss the implications of the medium-term projections for the evolution of Bulgaria's international investment position (IIP) and, thereby, for the sustainability of its current account.

3. The chapter finds that even after the recent expansion in Bulgaria's current account deficit, its level is broadly consistent with income convergence behavior for a country with its relative GDP per capita. Similarly, with FDI at its present levels, double digit current account deficits are consistent with stable debt ratios, but given its high level, external debt will remain a not inconsiderable source of vulnerability. To offset the impact of high debt Bulgaria must continue to maintain strong policies and ample liquidity buffers. A moderately ambitious adjustment scenario could see the debt ratio fall, but remain above a level that could generally be considered "safe" for a country like Bulgaria. The adoption of the euro would alter the picture, and in this setting the projected medium-term debt levels under a broad range of scenarios could be considered "safe." However, even under such circumstances, Bulgaria's net IIP would deteriorate significantly, generating increasingly

[1] Prepared by Bhaswar Mukhopadhyay.

larger pressures on the income account. Still more ambitious adjustment will be necessary to achieve a current account position that stabilizes the net IIP.

4. The rest of this chapter is organized as follows. Section B lays out the model and discusses the results of the income convergence approach. Section C discusses the implications of Bulgaria's large current account deficit for debt sustainability, while section D discusses the implications for the net IIP. Section E concludes.

B. Regional Income Convergence and the Current Account

5. In a world of integrated capital markets, large current account deficits are to be expected during an income convergence process. It is widely accepted that investment in lower income countries enjoys relatively higher rates of return, and in a country such as Bulgaria this is especially true in light of its sound policy framework and its imminent accession to the European Union. In this situation, economic theory suggests that capital flows to such countries help finance an increase in investment, while consumption smoothing behavior, prompted by perceived increases in future income, lead to a rise in consumption ratios. Both of these factors contribute to a deterioration of the current account deficit. Bulgaria's experience appears to be consistent with these predictions. Nevertheless, the magnitude of the deterioration in Bulgaria's current account deficit begs the question whether its level is at present excessive.

6. The empirical specification to address this question follows the methodology proposed in Blanchard and Giavazzi (2002).[2] In particular, the current account balance (as a ratio to GDP) in country i at time t is modeled as a function of its real per capita GDP y_{it}, relative to the average real per capita GDP for the sample as a whole, measured in logarithms. The empirical model also includes the control vector X_{it}, including two variables: (i) the dependency ratio, measured as the ratio of the total population to the labor force; and (ii) the real GDP growth rate. All else equal, a higher dependency ratio should lead to a worse current account balance, because of the higher share of dissavers in the economy, while the rate of growth of real GDP is included to control for the impact of cyclical factors on the current account balance. Specifically, the regression equation is as follows:[3]

$$ca_{it} = \alpha_t + \beta_t\{y_{it} - y_t\} + \gamma X_{it} + \varepsilon_{it} \qquad (1)$$

7. While the empirical specification is largely standard, the use of a time varying coefficient for the relative income variable follows Blanchard and Giavazzi (2002). They argue that financial integration has varied significantly over the last 15 years, leading to

[2] Leigh (2005) applies the same methodology, among others, to determine the appropriate level of the current account deficit for Lithuania.

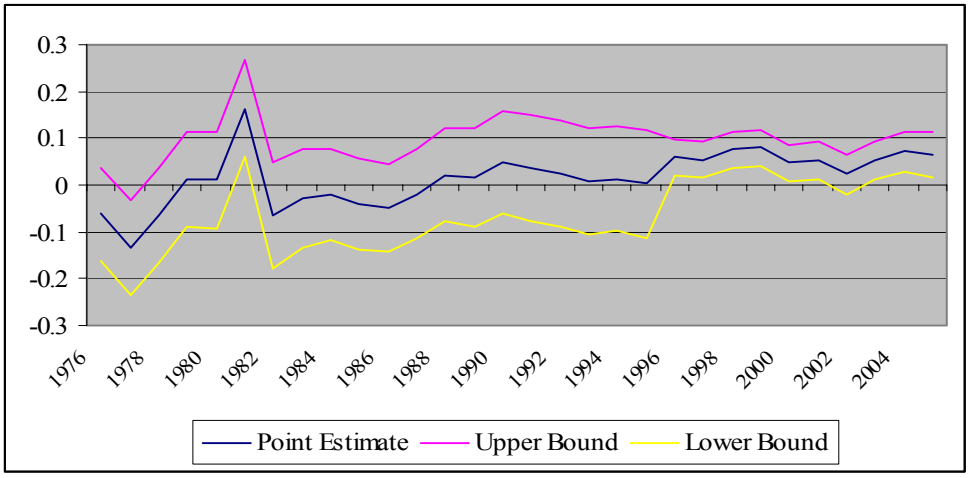
[3] Lagged values of the current account are also included in the right hand side of the equation to control for autocorrelation.

much larger movements in capital to poorer countries to finance investment and consumption. Thus, economic theory would predict that the impact of relative income differentials on the current account balance increased in recent years.

8. The sample consists of all the OECD countries (except Korea, Mexico, Turkey and Luxembourg), all the remaining new EU member countries, and Bulgaria and Romania.[4] The sample period runs from 1975 to 2005, except for the recent EU accession countries, and in Bulgaria and Romania, where the sample begins in 1995.[5] All of the data are sourced from the World Economic Outlook, except for real per capita GDP. For the latter, we use Heston, Summers and Aten (2002) data on PPP per capita GDP in 1996 dollars for 1975-2000, and then extrapolate the remaining years using real GDP growth rates.

9. The impact of the change in the relative income variable on the current account is plotted in Figure 1 below. The coefficients β_t are statistically not significantly different from zero until the mid-1990s, but thereafter, show a marked upward shift and remain positive through the remainder of the sample. This pattern follows economic theory, inasmuch as this is a period of increasing financial integration, especially of the transition countries. The impact of differences in relative GDP on the current account deficit are also not small; the estimation results indicate that in 2005, such differences would contribute about 9 percentage points of GDP to Bulgaria's current account deficit.[6]

Figure 1. Impact of Relative per capita Income on the Current Account, 1976-2005



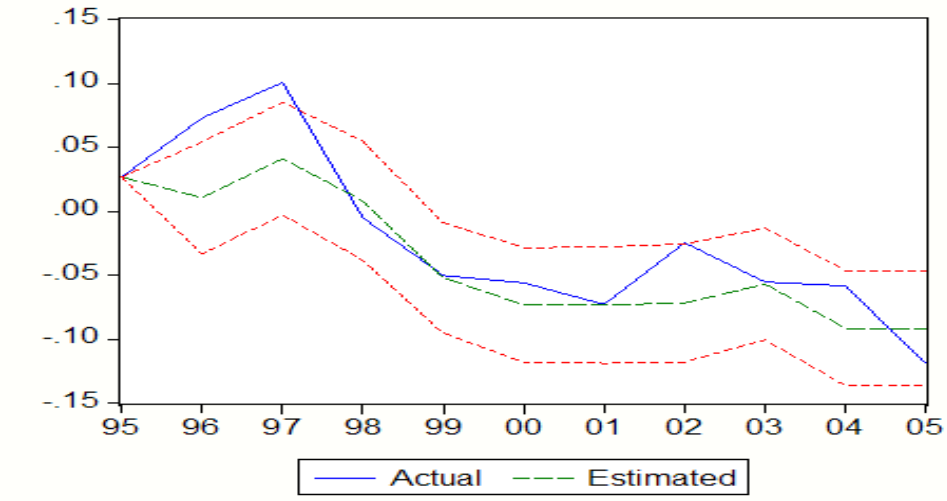
[4] As explained in Blanchard and Giavazzi (2002), the impact of their respective financial crises on the current account dynamics in Korea, Mexico and Turkey probably swamp the impact of the income convergence process. In Luxembourg, persistently large measured current account surpluses, in the range of 10-15 percent, appear to be highly idiosyncratic.

[5] The equation is estimated using least squares for an unbalanced panel.

[6] Since the set of regressors includes the lagged dependent variable, the current account is affected by both, the contemporaneous and the lagged values of relative GDP.

10. The estimated current account deficit from the income convergence model that also includes the control variables indicates that an appropriate current account deficit for Bulgaria in 2005 would have been 9.2 percent of GDP, below the actual 2005 current account deficit of 11.8 percent of GDP. However, because of the significant macroeconomic shocks in 2005, the results indicate that actual current account may not be out of line with the predictions of the model.[7] [8]

Figure 2. Bulgaria: Predicted vs. Actual Current Account (in percent of GDP)



11. These results are also consistent with those obtained by Hermann and Jochem (2005) in their study of the impact of relative GDP on current account deficits in the new member states of Central and Eastern Europe.[9] Their model includes, in addition to relative real per capita GDP, the investment to GDP ratio and other relevant macroeconomic variables. By considering separately investment and relative income, the coefficient on the latter only picks up the impact of different consumption rates resulting from the convergence process. An analysis of the contribution to the current account deficits indicates that relative income (or different consumption rates) contributes on average about 3 percentage points to the current account deficit, while the investment rate contributes about 5 to 8 percentage points of GDP. It is also noteworthy that Bulgaria's experience is also consistent with this result. Inspection of non-energy imports reveals that the sharp increase in recent years is, in large measure, on account of investment imports.

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[7] See Bulgaria—Second Review Under the Stand-by Arrangement and Requests for Waiver of Performance Criteria and Postponement of Third Review (EBS/06/39).

[8] The estimated current account balance also lies within the 95 percent confidence interval, although in light of the rather wide bands, the implications of this should be considered with caution.

[9] They consider GDP relative to Germany.

C. External Debt Sustainability Analysis

12. The analysis above, while useful in providing a benchmark for the level of the current account, offers few insights regarding its medium-term sustainability. The latter requires a formal debt sustainability analysis, especially important in Bulgaria where the external debt ratio (67.7 percent of GDP at end-2005) is already high in relation to internationally accepted benchmarks. This section approaches the question of debt sustainability from two different perspectives. First, it asks whether current account deficits near their present levels are consistent with a stable debt ratio in Bulgaria under different scenarios. Recognizing, however, that the present level of external debt is a significant vulnerability, it then discusses what a "safe" level of debt might be for a country in Bulgaria's circumstances and the prospects for entering that safe zone in the medium term.

13. In what follows, it is argued that in light of the very large FDI inflows, Bulgaria can sustain current account deficits of the magnitude seen in 2005 without jeopardizing debt stability, and even with FDI at its projected medium-term level the adjustment to achieve a debt stabilizing current account balance is manageable. Over the medium term, in both the ambitious baseline scenario and an alternative scenario with little adjustment, the debt ratio declines, but stays well above "safe" levels of debt, thus raising questions about the usefulness of standard debt sustainability analysis which assume uninterrupted market access.[10] In this regard, it should be noted that a key insight of the recent debt literature is that safe levels of debt are country specific. A review of the factors identified as being important in determining such a safe external debt level, and of Bulgaria's recent record of managing its debt, its impending EU accession and eventual euro adoption, suggests that with the adoption of the euro, vulnerabilities would diminish. In turn, debt ratios under a broad range of scenarios would be consistent with notions of what might be considered safe. In the interim period, however, the high debt ratios will remain a significant vulnerability, to mitigate which Bulgaria will need to continue maintaining a high reserve cover, a low net debt ratio and strong fiscal policies.

14. The dynamics of external debt (as a percentage of GDP) are governed by the standard debt accounting equation below. It expresses the change in the external debt ratio in terms of the non-interest current account balance (tb), the real GDP growth rate (g), the rate of inflation in euro terms (ρ), the share of external debt denominated in domestic currency (α)

[10] Reinhart, Rogoff, Savastano (2003) argue that a safe level of debt should not exceed 35 percent of GDP, with nearly half the countries in their sample with debt ratios below this level having sound credit histories. Using an entirely different methodology, IMF (2002) suggests that an external debt-to-GDP ratio of about 40 percent is a useful benchmark. For countries with debt ratios below this level, the conditional probability of a crisis is 2 percent, rising to 15-20 percent for ratios above this level. However, the probability of default declines sharply after conditioning for exports as a ratio to GDP; for such ratios exceeding 40 percent, the conditional probability of default is found to be 5 percent even when the gross external debt ratio exceeds 65 percent of GDP, albeit based on a very small sample that limits the robustness of this conclusion. In Bulgaria, the ratio of exports of goods and services to GDP averaged nearly 56 percent over 2002-05, a testament to its open economy, even after noting that a number of important exports (textiles, metals, and fuels) have significant import requirements.

and the nominal appreciation of the domestic currency (ε).

$$d_t - d_{t-1} = \frac{1}{1 + g_t + \rho_t + g_t \rho_t}(r_t - g_t - \rho_t(1 + g_t) + \varepsilon_t \alpha_t (1 + r_t))d_t - tb_{t-1} \qquad (2)$$

15. The standard equation does not consider the role of non-debt creating inflows, which have been very important in Bulgaria during the last few years. Indeed, inflows of net non-debt creating FDI have averaged nearly 7¼ percent of GDP per year over 2003-05, and have been an important driving force behind the increase in the current account deficit, and recent indicators point to such inflows accelerating to nearly 9½ percent of GDP in 2006.[11] Assuming no additions to reserves or other asset accumulation, and continued stability of the exchange rate for the leva against the euro, the baseline scenario in Table 1 indicates that Bulgaria's non-interest current account deficit could reach 13¼ percent of GDP without adding to its external debt.[12] A higher interest rate scenario shows that Bulgaria could still sustain a non-interest current account deficit of nearly 11¼ percent of GDP and still not see an increase in its debt. The "permissible" level of the current account deficit in both of these scenarios is well within the range of the realized current account deficit in 2005.

Table 1. Debt Stabilizing Current Account Balance

	2006		Growth scenarios	
	Baseline	High interest rate	High growth	Low growth
	(annual percentage change)			
Interest rate	5.0	8.0	5.0	5.0
Real GDP growth	5.6	5.6	6.0	3.0
Change in GDP deflator	5.2	5.2	3.0	2.5
	(in percent of GDP)			
Debt level	69.9	69.9	70.0	70.0
Automatic debt dynamics	-3.8	-1.9	-2.7	-0.4
Foreign direct investment	9.4	9.4	6.0	3.0
Debt stabilizing non-interest current account balance	-13.2	-11.3	-8.7	-3.4

[11] The average for 2003-05 excludes the impact of a single large transaction that raised debt by nearly 5 percentage points of GDP and lowered net FDI by 3 percentage points of GDP.

[12] Additions to gross reserves or other external assets would lower the *gross* debt-stabilizing level of the current account balance, but have no impact on its *net* debt-stabilizing level. While the distinction between gross and net debt is meaningful in a discussion of sectoral vulnerabilities, and attendant balance sheet effects, they are not relevant in the present context.

16. The two other scenarios in Table 1 highlight the importance of growth to address external vulnerabilities. In the scenario with high growth, high FDI levels and inflation closer to its medium-term average, a noninterest current account deficit of 8¾ percent of GDP stabilizes the debt level. By contrast, a low-growth adjustment path does nothing to reduce Bulgaria's high external vulnerabilities. In such a path, an adjustment of the current account deficit associated with a significant slowdown in FDI inflows is to be expected. However, with commensurately slower real GDP growth and low inflation, the debt stabilizing noninterest current account deficit is also sharply lower at just under 3½ percent of GDP. This scenario is particularly troubling because, even an adjustment of such a magnitude does little to lower the level of external debt while, in the medium term, the country loses the beneficial effects that FDI has on productivity and growth. As noted above, Bulgaria's current account has been largely financed by FDI, and its recent expansion influenced significantly by the growth of investment goods imports, while real GDP growth has been good. This suggests that Bulgaria's experience largely corresponds to the "high growth" scenario in the foregoing analysis and, to that extent, mitigates concerns regarding the size of the current account deficit. It should also be noted that in Bulgaria, in light of its unfavorable demographic profile, FDI inflows are particularly important to improve total factor productivity, and hence the prospects for real GDP growth.[13]

17. As regards the medium term, two scenarios are considered below. In the baseline scenario, an ambitious adjustment allows the current account deficit to reach 6.9 percent of GDP by 2011.[14] Although FDI is projected to remain high, albeit somewhat lower than at recent levels, the external debt ratio declines only to about 61 percent of GDP, well above safe levels in comparison with international benchmarks. In an alternative scenario in which there is much less adjustment, the current account deficit declines only to 10½ percent of GDP, and the debt ratio rises modestly to 69 percent of GDP (Table 2). Stress tests of the baseline scenario, except the exchange rate shock, indicate somewhat higher debt ratios than in the baseline, but well within the range of their current levels (Figure 3). Thus, a broad range of scenarios is consistent with relative stability of debt levels, but none of these materially addresses the key vulnerability of a high debt ratio.

[13] The chapter on "Bulgaria's Growth and Convergence Prospects" discusses this issue in greater detail.

[14] The adjustment is aided by an increase in annual EU transfers of about 2½ percentage points of GDP.

Table 2. Bulgaria: Medium-term Debt Profiles in the Baseline and Alternative Scenarios

	2005	2011 Baseline	2011 Alternative
	(in percent of GDP)		
Current account	-11.8	-6.9	-10.4
Foreign direct investment	10.3	6.0	6.3
External debt	67.7	61.1	68.9
	(annual percentage change)		
Real GDP growth	5.5	6.0	6.0
GDP deflator	3.8	3.0	3.0

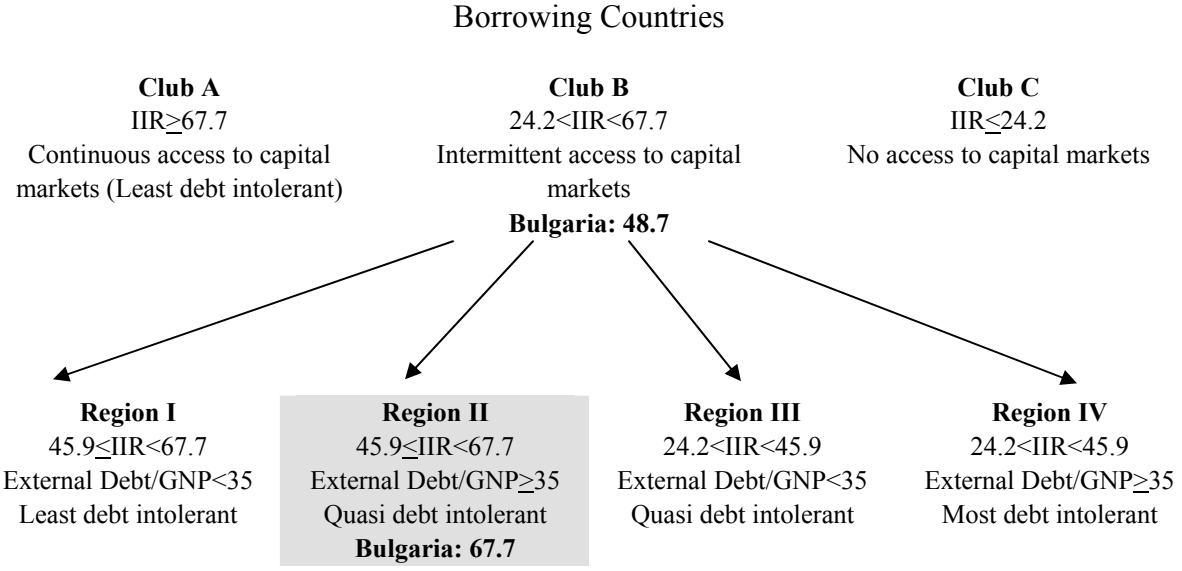
18. While international benchmarks provide useful "rules of thumb" for analyzing external debt vulnerabilities, recent studies of debt sustainability have emphasized country specific characteristics as being more important than overall debt burdens. Two key concepts identified in the literature, "debt intolerance" and "original sin," have been particularly influential in shaping the debate on debt issues. In particular, debt intolerant countries, or countries afflicted by original sin, may suffer frequent interruptions of their access to capital markets, leading to discrete jumps in interest rates or sharply higher debt ratios contingent on an exchange rate depreciation. In these circumstances, conclusions of simplistic debt sustainability exercises are not meaningful and, hence, a determination as to whether Bulgaria belongs to these categories is warranted.

19. Reinhart, Rogoff, and Savastano (2003), henceforth RRS, argue that a country's record of meeting its debt obligations and managing its macroeconomy in the past is relevant to forecasting its ability to sustain moderate to high levels of indebtedness, both domestic and external, many years into the future. Thus, they introduce the concept of debt intolerance, which manifests itself in the extreme duress that many emerging market economies experience at overall debt levels that would seem quite manageable by the standards of advanced industrial economies. These can be as low as 15-20 percent of GNP in many cases, and the thresholds depend heavily on the country's record of debt and inflation. Debt-intolerant countries tend to have weak fiscal structures and weak financial systems, and default tends to exacerbate these weaknesses. RRS suggest that a country's current level of debt intolerance can be approximated empirically as the ratio of the long-term average of its external debt (scaled by GNP or exports) to an index of default risk. They also note that debt intolerant countries very rarely achieve significant reductions in their debt burden without some kind of adverse credit event. In what follows, both of these factors are considered in trying to determine Bulgaria's level of debt intolerance.

20. An analysis of this nature for Bulgaria is complicated by the very short span of time in which it has been properly integrated into international capital markets. That said, the period before 1998 appears not to be very relevant to the analysis at hand, and even after that, a decision by the EU to announce a firm schedule for accession appears to have marked

a structural break in terms of the country's access to international capital markets.[15] Accordingly, data for the period 2003-05 are considered, noting however that RRS base their calculated benchmarks on data for the period 1979-2000.

21. The methodology proposed by RRS proceeds in two steps: (1) classifying a country into a debt intolerance club based on its International Investor Rating; and (2) further partitioning the club of countries with intermittent access to capital markets, based on their level of debt intolerance. As indicated below, Bulgaria would be classified as a Region II "quasi debt intolerant" country under this scheme.[16]



22. RRS also propose an indicator to measure a country's debt intolerance along a continuum, namely the average level of external debt, scaled by GNP or exports, as a ratio of the average IIR. Comparing this indicator for Bulgaria with emerging market countries identified in RRS as being the least debt intolerant (i.e. no recorded default) and others with at least one default suggests that Bulgaria may lie somewhere between these groups. This is especially the case when debt is scaled by exports. On these bases, Bulgaria would be classified as a Region II country.

23. Many studies have emphasized that credit ratings are unpredictable and can change without warning. Thus, the short history of ratings that the foregoing analysis relies on is an obvious weakness and warrants investigating whether Bulgaria's recent ratings reflect idiosyncrasies of financial markets, or if there are more fundamental factors that might

[15] The discussion on original sin below provides some indications how the anchor of EU accession can influence access to capital markets.

[16] The Regions I-IV are graded according to the level of debt intolerance from relatively "safe" countries (region I) to more precarious countries (regions III and IV).

reflect the shift in market sentiment. In what follows below, it is suggested that Bulgaria's recent record of debt reduction and impending EU accession are factors that have offset the effect of a high external debt ratio on its debt intolerance.

24. RRS note that debt intolerant countries rarely achieve a significant reduction of their debt burden outside of an adverse credit event, and following such an event, governments in emerging market countries often quickly amass debt once again, leading to the re-emergence of the symptoms of debt intolerance. They define large debt reversals as episodes where countries were able to lower their external debt burden by 25 percentage points of GNP or more. Moreover, they restrict their sample to cases where over the 3-year period, average growth was at least 5 percent, or where the nominal dollar value of debt declined by at least 10 percent. Of the 22 such episodes they identify during 1970-2000, only 7 debt reductions were achieved outside of an adverse credit event, and in 6 of these cases the reduction was aided by large repayments, although output growth also contributed in 5 of these cases. In only one case, Swaziland, was a country able to achieve a large debt reduction only on account of growth. In recent years, strong macroeconomic policies have allowed Bulgaria to achieve a "significant debt reduction" along the lines defined by RRS.[17] Over the period 2001-03, Bulgaria's gross external debt declined by 26 percentage points of GDP, including a reduction in euro denominated debt by 10½ percent, while average real GDP growth averaged 4½ percent, also close to the threshold identified by RRS (Table 3).

Table 3. Bulgaria: Record of Debt Reduction

	1999	2000	2001	2002	2003	2004
			(in percent of GDP)			
Gross external debt ratio	89.2	86.9	78.6	65.1	60.2	64.7
Debt reduction	...	-2.3	-8.3	-13.4	-4.9	4.4
3-year average	...	...	...	-24.0	-26.6	-13.9
			(in percent)			
Real GDP growth	...	5.4	4.1	4.9	4.5	5.7
3-year average	...	...	...	4.8	4.5	5.0
3-year reduction in gross external debt	...	...	...	-0.7	-10.5	5.3

Source: Bulgarian authorities; and Fund staff estimates

[17] The analysis here is in terms of ratios to GDP and euro denominated gross debt, rather than ratios to GNP and dollar denominated debt in RRS.

25. Impending EU accession is also probably an important factor influencing favorably market perceptions of Bulgaria. While not a formal part of their investigation, RRS recognize that external political anchors such as the EU help countries shed debt intolerance faster than they may otherwise have done. Indeed, they cite the examples of Greece and Portugal as the frontrunners among the possible candidates to graduate from Club B to Club A. Based on data averaged over 1992-2000, their regressions predict both countries to be in Region IV, whereas their actual ratings over this period place them in Region II. The evolution of the IIR ratings for Bulgaria and Romania also show a distinct jump in 2004, roughly the period when the parameters, including possible timing of EU accession, were finalized, thus supporting the hypothesis regarding the importance of such an external anchor.

26. In addition, Bulgaria's liquidity indicators are very strong. In particular, it has ample reserves, and such reserves are expected to more than fully cover the stock of short-term debt over the medium term.[18] Bulgaria's strong reserves are also reflected in its low net external debt ratio. Finally, Bulgaria has adopted a very strong fiscal policy stance that has permitted a continual reduction of its public debt ratio (Tables 4 and 5).[19]

Table 4. Bulgaria: Key Vulnerability Indicators

	2005	2011 Baseline	2011 Alternate
Gross international reserves			
In percent of short-term debt at remaining maturity	156.4	138.1	116.2
Excess international reserves			
In percent of short-term debt at original maturity	87.0	40.0	33.6
Net external debt			
In percent of annual GDP	22.2	22.8	30.6

27. Nevertheless, the level of Bulgaria's external debt is beyond most conventional estimates of a "safe" debt threshold, and although recent research has increasingly sought to identify combinations of factors that increase the risk of crises, the vulnerability from this source should not be discounted, at least not until Bulgaria is granted entry into the eurozone. How a development such as euro adoption would help reduce vulnerabilities is discussed in the debt literature on "original sin."

[18] Many studies conclude that the ratio of reserves to short-term debt external may be the single most useful indicator of whether a given size current account deficit or external debt may be a cause for concern. The Guidotti "rule (of thumb)" says that the probability of a crisis rises when the ratio of short term external debt to reserves exceeds one. Frankel and Wei (2004) discusses some of these issues in a useful review of the literature on macroeconomic crises.

[19] RRS especially note the importance of maintaining low public debt levels for debt intolerant countries.

28. Eichengreen, Hausmann and Panizza (2003), hereafter EHP, define original sin as a country's inability to issue debt in its own currency. They note that while original sin may be related to other factors such as institutional or policy weaknesses, in too many instances, even with strong policies and institutions, emerging markets suffer from original sin. EHP take issue with RRS's conclusions that the history of debt service is critical to determining whether developing countries are less able to manage debts that are manageable for advanced economies. While EHP accept the basic insight that history matters, their empirical work demonstrates that when the models studied by RRS are modified to include measures of original sin, the impact of debt ratios on credit worthiness ratings are no longer different for advanced and emerging market countries. They conclude that while debt ratios are an important determinant of credit worthiness, it is original sin that distinguishes advanced economies from emerging markets.

29. This finding has important implications for Bulgaria. At present nearly 75 percent of Bulgaria's external debt is denominated in euros, with most of the balance in US dollars. While the currency composition of its debt is a significant vulnerability at present, on euro adoption Bulgaria will have shed original sin. Moreover, the expectation that this will happen is an important component in containing the risk associated with its high debt ratio or, in RRS terminology, making it less debt intolerant. This intuition is also confirmed by the stress tests shown in Figure 3 (at the end of the chapter). As noted above, they indicate a modest impact on debt levels for all of the shocks, except that related to the exchange rate, under which debt levels would climb sharply to nearly 90 percent of GDP, making untenable the assumption of uninterrupted access to capital markets underlying the debt sustainability analysis.

30. The discussion above is silent on what level of external debt would be safe for a country like Bulgaria once it has shed original sin. As mentioned earlier, recent research seeks to identify combinations of factors that influence the potential for crises, and application of such regression tree analyses point to a low risk of a crisis in Bulgaria even in the period prior to euro adoption.[20] Additionally, as noted above, Bulgaria's high export-GDP ratio, averaging nearly 56 percent over 2002-05, also helps lower its risks. In light of these factors, especially when taken in conjunction with the strong observed connection between currency crises and defaults in emerging markets, the present external debt ratio in Bulgaria would be manageable in a post euro adoption phase.[21]

31. The results in EHP also downplay the likely importance of the external debt ratio following formal euro adoption. EHP's analysis suggests that after controlling for original sin, it is public debt (as a ratio to GDP or to revenues), and not the external debt ratio, that is

[20] Application of the tree in Manasse and Roubini (2005) to Bulgaria's circumstances produces a crisis probability of 2 percent, as demonstrated in IMF (2006b). Similarly, Bulgaria would fall in the lowest risk category even in the regression tree analysis done by Frankel and Wei (2004).

[21] Reinhart (2002) finds a strong link between currency crises and defaults in developing countries; about 85 percent of all defaults in the sample are linked with currency crises.

the relevant variable in explaining a country's access to capital markets.[22] Bulgaria's public debt ratio was nearly 32 percent of GDP at end-2005, and is projected to decline further to less than 19 percent in the medium term. These ratios are low, especially in comparison to the 60 percent of GDP criterion enshrined in the Stability and Growth Pact. Bulgaria's public debt ratio also compares favorably with the public debt ratios of the EU15, all of whom enjoy easy access to international capital markets (Table 5).[23]

Table 5. Gross Debt of the General Government, 2001-2005
(in percent of GDP)

	2001	2002	2003	2004	2005
Bulgaria	**69.9**	**56.2**	**48.1**	**40.6**	**31.9**
Luxembourg	6.7	6.8	6.7	6.6	6.7
Ireland	35.3	32.0	31.0	29.4	28.2
Finland	45.3	42.1	44.0	41.4	35.1
Spain	55.6	52.7	49.1	46.6	43.1
United Kingdom	38.4	37.9	39.4	41.2	43.3
Denmark	53.8	54.5	52.8	49.4	44.1
Sweden	53.8	52.0	51.6	50.5	49.8
Netherlands	50.7	50.5	51.9	52.9	52.0
Austria	66.1	65.9	64.4	63.6	63.3
Portugal	52.9	55.5	57.0	58.7	63.9
France	56.1	58.1	62.7	65.0	67.3
Germany	57.9	59.6	62.8	64.5	67.5
Belgium	106.2	103.2	98.5	94.9	94.0
Italy	108.2	105.4	104.0	103.9	106.3
Greece	114.4	111.8	109.1	109.3	108.6

Source: World Economic Outlook

32. Some caveats to the analysis above may, however, be in order. Countries not afflicted by original sin in EHP's sample consist mainly of industrial countries. Confidence in such countries, associated with the shedding of original sin, has evolved gradually. Would markets treat the new accession countries adopting the euro in the same way as others that have shed original sin? Eliminating exchange risk would address an important vulnerability for

[22] In most of their equations the external debt ratio is no longer significant, and it also always enters with the wrong sign. RRS also find that the coefficient on external debt (as a ratio to GNP) for countries in Club A is not significant.

[23] EHP also find that the level of development, measured by the logarithm of GDP per capita, positively affects a country's credit rating. However, since the coefficients on the debt ratio and on the logarithm of GDP per capita are of a broadly similar magnitude, Bulgaria's per capita GDP would have to be significantly lower than even its present low level to materially offset its very low public debt ratio.

Bulgaria, and also for its mainly European debt holders. Both of these reasons ought to allow continued access to capital markets, even during economic downturns. In addition, membership in the EU would provide greater confidence regarding the maintenance of sound policies. Nevertheless, only time will tell if these factors will in fact, in the future, allow new eurozone members to have similar market access as the industrialized countries. In the meanwhile, it would not be unreasonable to conjecture that markets might initially hold these countries to a higher standard than industrialized countries. This would suggest that even after euro adoption, continued maintenance of strong policies, and liquidity buffers, especially to guard against the possible risk that some private liabilities may become socialized, remains important.

D. A Net International Investment Position Perspective

33. In the previous sections, it has been argued that the large volumes of FDI are an integral part of the transition experience, and in Bulgaria have helped it sustain current account deficits that would, in other circumstances, have a significantly adverse impact on its international indebtedness. However, such investments necessarily entail a deterioration of the income balance on account of growing profit transfers back to the source country. Thus, improvements in the remaining items of the current account will be needed to offset these payments, and additionally, the decline in FDI as convergence progresses. Following Lane and Milesi-Ferretti (2006), LM-F hereafter, the extent of the needed adjustment can be estimated from calculations of the net IIP stabilizing level of the current account balance excluding net income and interest (henceforth "adjusted current account balance".)

34. Following LM-F, the change in the net IIP may be expressed as follows:

$$b_t - b_{t-1} \equiv acab_t + \frac{r_t^{EQA} - g_t}{1+g_t} a_{t-1}^{EQ} + \frac{r_t^{DA} - g_t}{1+g_t} a_{t-1}^{D} - \frac{r_t^{EQL} - g_t}{1+g_t} l_{t-1}^{D} - \frac{r_t^{DL} - g_t}{1+g_t} l_{t-1}^{D} + \varepsilon_t \qquad (3)$$

where the superscripts *EQ* and *D* identify debt and equity components of external assets and liabilities, as well as their respective rates of return, r_t denotes the real rate of return at time *t*, g_t the growth rate at time *t*, a_{t-1} and l_{t-1}, the stock of assets and liabilities at the end of period *t-1*, respectively, and $acab_t$ the adjusted current account balance at time *t*.

35. As noted above, Bulgaria is expected to enjoy high levels of FDI over the medium term which would finance relatively large current account deficits. Accordingly, over this period it would be natural to expect the net IIP to deteriorate further.[24] Thus, in what follows, the focus is on the net IIP in 2011 that is consistent with the baseline medium-term balance of payments projections. For the other variables, the assumptions of LM-F as described below are adopted:

[24] This is also consistent with the observed evolution of net IIPs in a number of other CEE and Baltic countries, many of which have net IIPs that are considerably more deteriorated than Bulgaria.

a. Output growth of 6 percent is assumed, consistent with staff's baseline projections for 2011. This is also a rate of growth that can be sustained in the medium-term.

b. For FDI and portfolio equity investment in the country, LM-F assume that the real rate of return will move in line with the rate of growth of the country, reflecting the risk sharing properties of equity investment—if the country does well investors enjoy a higher return and *vice versa.* For simplicity, a constant spread of 100 basis points is used in the calculations.

c. For foreign debt liabilities, the rate of return is assumed to be equal to the projected interest rate on long-term bonds in the euro area, plus a spread of 150 basis points. This spread is somewhat higher than the present spread on assets originating in Bulgaria, but given that the global financial situation at present is exceptionally benign, a somewhat higher spread appears to be a realistic assumption.

d. For FDI and portfolio investment abroad, the rate of return is assumed to exceed the world growth rate by 100 basis points, for reasons analogous to those mentioned for FDI inflows.

e. Finally, the rate of return for debt assets abroad is assumed to be equal to the projected interest rate on euro bonds.

36. Table 6 contains information on the evolution of the net IIP in Bulgaria under the baseline and alternative scenarios. As anticipated, these indicate a sharp deterioration in the net IIP over the medium term, from about 31 percent of GDP in 2005 to nearly 63 percent of GDP in 2011 under the baseline scenario, and still further to 72.6 percent of GDP in the alternative scenario. Net IIP positions of this magnitude are large by historical comparisons, although to be expected with greater financial integration and the economic transition underway in Bulgaria. The data reported by LM-F indicate that half of the CEE countries had net IIP deficits at roughly such levels or higher already in 2004. Nevertheless, it is also clear that a deterioration in the net IIP cannot proceed indefinitely and that changes in the adjusted current account needed to stabilize the net IIP could be substantial.

Table 6. Bulgaria: Net International Investment Position

	2004	2005	2011 Baseline	2011 Alternate	Rates of return (in percent)
	(in percent of GDP)				
Net IIP	-30.8	-30.9	-62.9	-72.6	...
Assets	62.2	61.2	49.0	49.0	...
Equity	-0.3	0.8	1.6	1.6	5.2
Debt	62.6	60.4	47.4	47.4	2.1
Liabilities	93.0	92.1	111.9	121.6	...
Equity	35.0	39.9	60.1	61.8	7.0
Debt	58.0	52.2	51.8	59.9	3.6
Adjusted current account balance to stabilize net IIP 1/	...	...	1.2	1.0	...
Memorandum item: Growth rate (in percent)	5.6	5.5	6.0	6.0	6.0

Source: Bulgarian National Bank; and Fund staff estimates.

1/ Stabilization at 2011 net IIP ratios.

37. Table 7 indicates that to stabilize the net IIP at its 2011 level under the baseline scenario would require a surplus of 1¼ percent of GDP in the adjusted current account. Under this ambitious scenario, the adjusted current account is projected to improve only to a deficit of about 2 percent of GDP (from a deficit of nearly 9 percent of GDP in 2005). To achieve the net IIP stabilizing level of the adjusted current account deficit, annual real export growth would have to be on average nearly 1½ percent higher even with no further increase in import growth rates. This represents a considerable challenge, especially as real export growth is projected to average 11¾ percent over 2006-2011 under the baseline scenario. Under the alternative scenario, the challenge is greater still. The adjusted current account improves only to a deficit of 5 percent of GDP by 2011, and to achieve the adjusted current account balance that stabilizes the net IIP, annual real export growth would have to be on average about 2¾ percent higher.

Table 7. Bulgaria: Baseline and Alternate Adjustment Scenarios

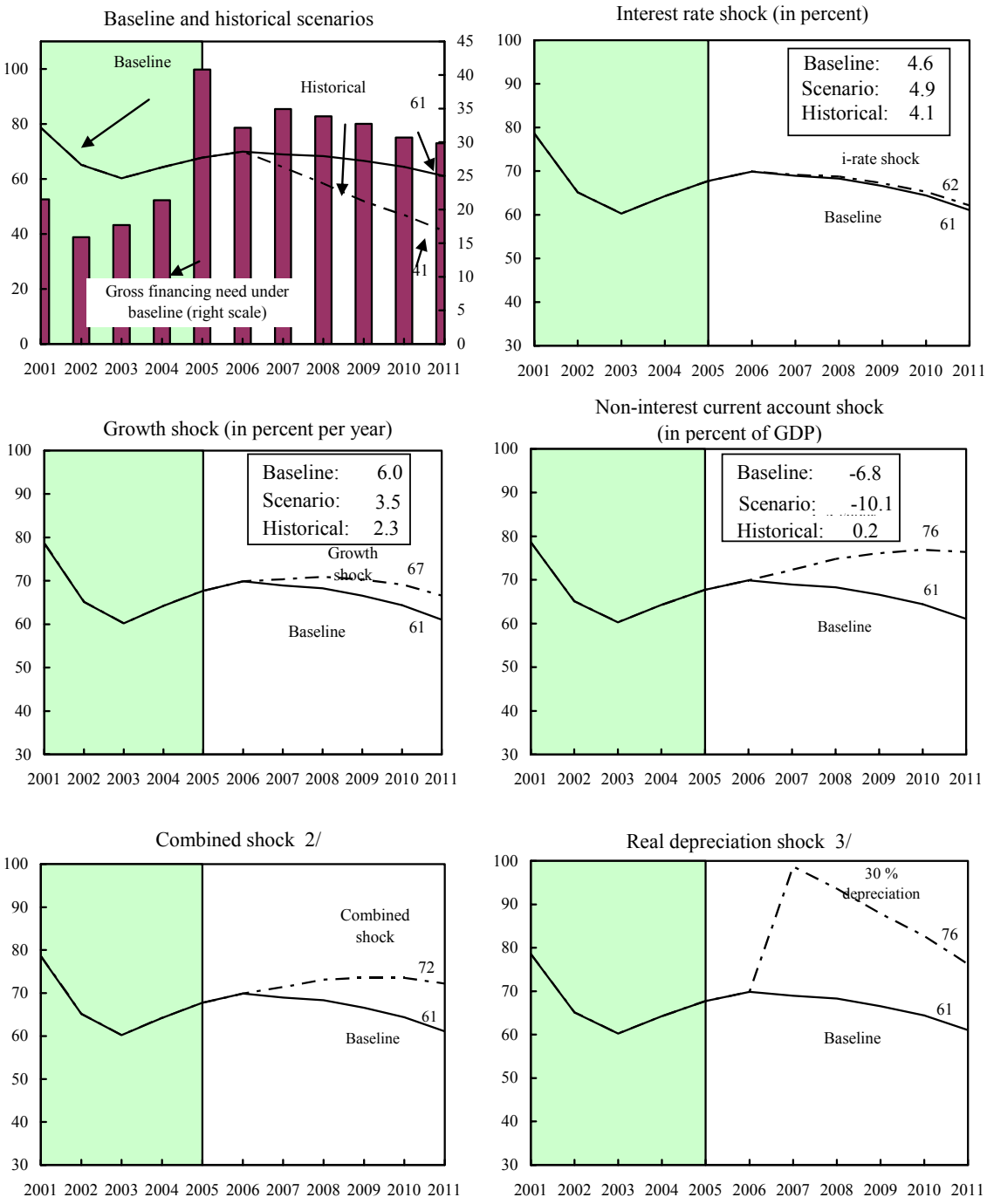
	2005	2011 Baseline	2011 Alternate
Current account	-2,531	-2,578	-3,835
Income, net	247	-396	-507
Labor income, net	891	1,461	1,461
Other	-644	-1,857	-1,968
Adjusted current account	-1,887	-721	-1,867
in percent of GDP	-8.9	-1.9	-5.0
Target adjusted current account 1/		437	377
in percent of GDP		1.2	1.0
Higher annual export growth required to hit target		1.44	2.71
GDP	21,254	37,063	37,063

1/ This is the adjusted current account that stabilizes the net IIP at the 2011 level.

E. Conclusion

38. In conclusion, we find that current account deficits of the magnitude seen recently in Bulgaria are not necessarily unsustainable. Large current account deficits at this stage of Bulgaria's transition process are to be expected, especially in light of the large FDI inflows, by which they are also being financed. However, in light of Bulgaria's high external debt, vulnerabilities until adoption of the euro will remain considerable, and sound policies, as well as continued high levels of reserves needed to send the appropriate signal to financial markets, will be particularly important. Finally, the discussion on net IIPs points to the continued importance of sound policies for some time to come in order to achieve a turnaround in the current account position. Accordingly, euro adoption should not be seen as a time at which complacency can set in on the policy front.

Figure 3. Bulgaria: External Debt Sustainability: Bound Tests 1/
(External debt in percent of GDP)



Sources: International Monetary Fund, Country desk data, and staff estimates.

1/ Shaded areas represent actual data. Individual shocks are permanent one-half standard deviation shocks. Figures in the boxes represent average projections for the respective variables in the baseline and scenario being presented. Ten-year historical average for the variable is also shown.

2/ Permanent 1/4 standard deviation shocks applied to real interest rate, growth rate, and current account balance.

3/ One-time real depreciation of 30 percent occurs in 2006.

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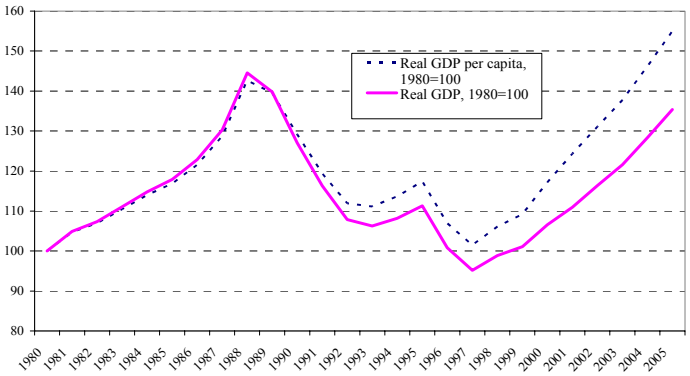
II. Bulgaria's Growth and Convergence Prospects[25]

39. **This chapter discusses Bulgaria's prospects for converging to the living standards of the more advanced members of the European Union (EU)**. Based on the growth-accounting framework, the paper assesses Bulgaria's medium-term growth prospects and its longer-term convergence path. Bulgaria's convergence was off to a late start compared to other central and eastern European countries (CEECs); the current level of income per capita is comparatively low. While investment and productivity growth are expected to be boosted in the medium term by the upcoming accession to the European Union (EU), convergence prospects are challenged by the large projected decline of working-age population. Nevertheless, even on optimistic assumptions, Bulgaria's convergence will take considerable time. Prudent macroeconomic policies and structural reforms are essential for the economy to reduce vulnerabilities associated with the convergence.

A. Background

40. **The unfavorable economic environment of the early 1990s and the economic crisis in 1996-97 hurt Bulgaria's output, employment, and investment.** The move to a market economy, which began in the late 1980s, was marked by a deep transformational recession. Real GDP fell sharply in the first few years of the transition (Figure 1). While this is similar to the experiences of other CEECs, Bulgaria experienced a longer period of falling output (Figure 2). The economic recovery that started in 1994-95 was interrupted by a severe financial and currency crisis in 1996-97, resulting in another deep output decline, a massive currency depreciation, and high inflation. Between 1992 and 1997, total employment in the industry sector fell by almost 18 percent. However, as the agricultural sector absorbed part of the excess labor, total employment fell by only 4 percent. The population has declined ever since.[26] Investment fell from around 35 percent of GDP before the transition to about 10 percent in 1997.

Figure 1. Real GDP and Real GDP per capita, 1980-2005

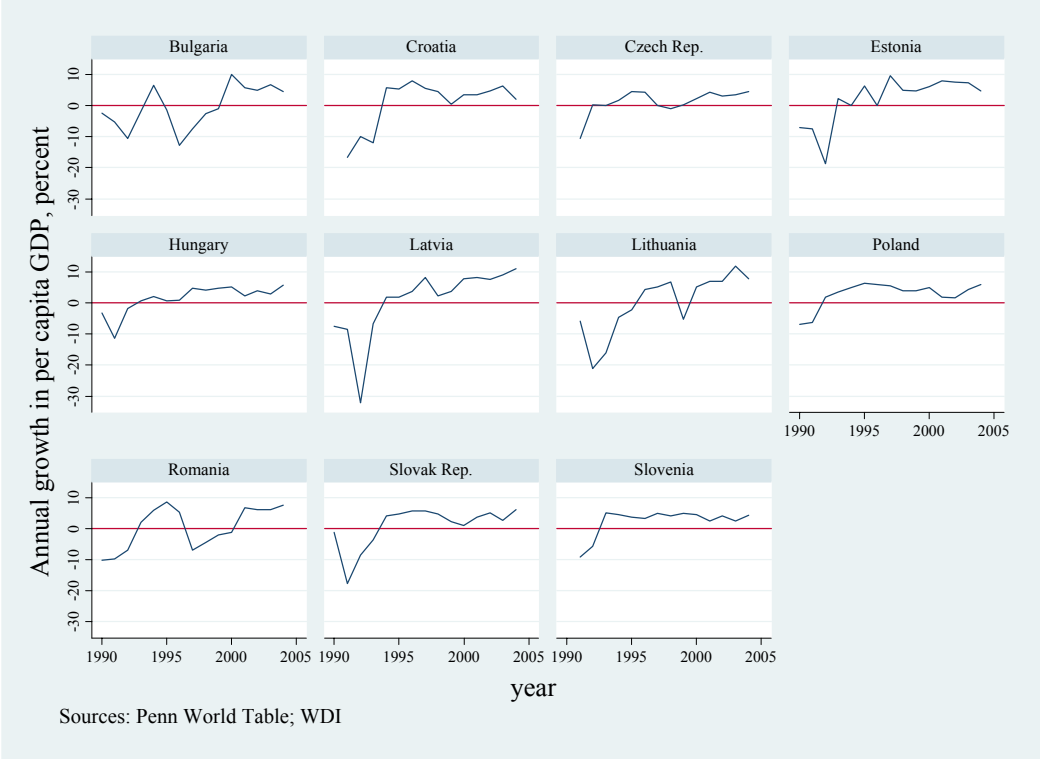


Source: WDI

[25] Prepared by Pipat Luengnaruemitchai (EUR).

[26] While the decline has been mainly due to natural factors, out-migration, notably of persons of working age, has aggravated the decline.

Figure 2. CEECs: Growth of Real PPP-Adjusted GDP per Capita, 1990-2004
(In percent)

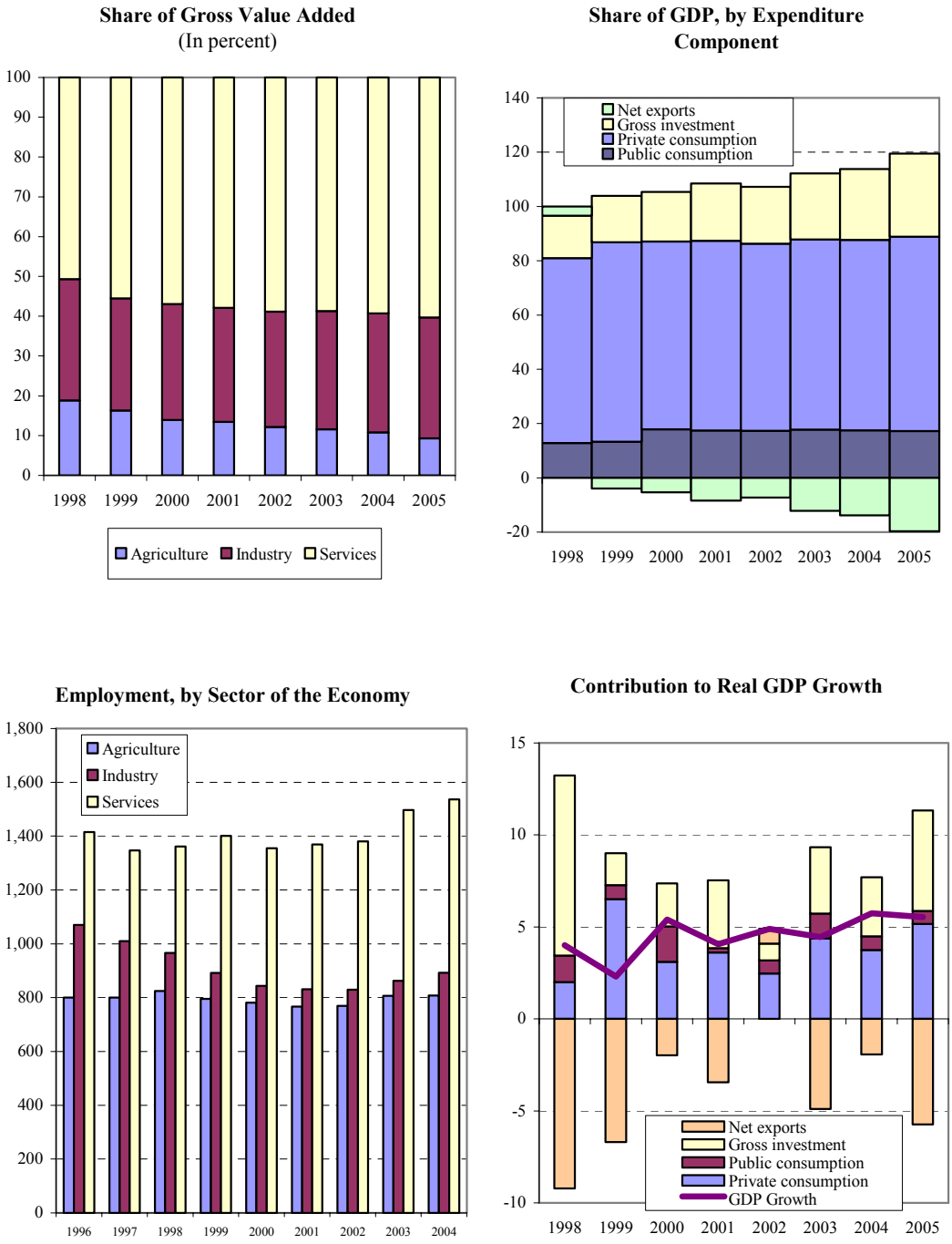


Sources: Penn World Table; WDI

41. **Following the crisis, structural reforms and a sound macroeconomic framework set the stage for a sustained recovery.** Bulgaria's economic performance has been characterized by robust growth and macroeconomic stability. In 1997, Bulgaria adopted a currency board arrangement (CBA), pegging its currency to the deutsche mark (and later to the euro). The CBA has been effective in supporting growth and reducing inflation. Between 1998 and 2005, real GDP growth averaged 4.6 percent (5.6 percent in per capita terms), while inflation has subsided to an average of 5 percent since 1999.

42. **The structure of the Bulgaria economy has shifted markedly over the last decade, and investment has become the main engine of growth** (Figure 3)**.** The country has become much less reliant on the agricultural sector—its contribution to gross value added has almost halved over this period. The service sector has become the dominant sector in the economy. Labor productivity (measured by average output per worker) has increased substantially in the service and industry sectors, reflecting in large part the higher investment in these sectors. However, agricultural output-per-worker has declined with employment remaining largely unchanged and output falling. On the demand side, investment has recently become the main engine of growth**.** Buoyed in part by optimism surrounding the upcoming EU accession, investment has been strong, including foreign direct investment (FDI). As in other transition economies, convergence has been accompanied by large current account deficits, owing to both consumption smoothing and the use of foreign savings to finance its rapid investment growth.

Figure 3. Bulgaria: Share of the Economy, by sector and by expenditure



Sources: National Statistical Institute; ILO; and Fund Staff Estimates

43. **Despite its strong recent economic performance, Bulgaria remains one of the poorest countries in the region.** Bulgaria's GDP per capita is trailing far behind the average of EU-25 countries (see Table 1). At market exchange rates, Bulgarian GDP per capita is less than one-tenth of the average of the EU-15 and about one-third of the average of new member states (NMS). On a purchasing power parity (PPP) basis, Bulgaria's GDP per capita is about 30 percent of the average level of the EU-25 and about half of NMS. In light of these huge differences, one would expect (a) a comparatively much higher growth rate given that income levels are so low, and (b) a longer catch-up period. To learn more about Bulgaria's growth and convergence prospects, the next section assesses the country's medium-term growth prospects, and section C discusses the convergence path and how long it is likely to take Bulgaria to converge to the EU-15 income level

Table 1. CEECs: GDP per Capita at PPP and Market Exchange Rate, 2004

	GDP per capita, PPP (current international $)	GDP per capita (current US$)
Bulgaria	8,077.9	3,109.2
Romania	8,479.5	3,374.1
Czech Republic	19,408.3	10,475.2
Estonia	14,555.0	8,331.0
Hungary	16,814.4	9,961.8
Latvia	11,653.3	5,867.9
Lithuania	13,107.0	6,480.0
Poland	12,974.3	6,345.7
Slovak Republic	14,622.5	7,634.8
Slovenia	20,939.3	16,115.0
EU-15 average	28,630.74	31,837.59
EU-25 average	26,410.39	27,997.74
NMS-8 average	14,739.81	7,814.80

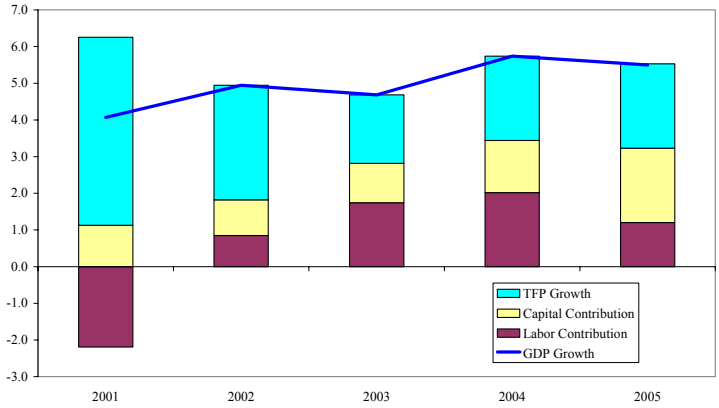
Source: WDI.

B. Bulgaria's Medium-Term Growth Prospects

44. **Given data limitations, this chapter uses a growth-accounting framework to explain Bulgaria's growth prospects in the medium term.** Growth accounting decomposes the growth rate of output into contributions from factors of production (labor and capital) and total factor productivity (TFP) growth. With this framework, one can make a forward-looking growth projection by projecting employment levels, investment, and productivity growth.

45. **A growth-accounting exercise suggests that Bulgaria's recent growth experience has been driven largely by the growth of productivity.**[27] Employment in Bulgaria had been declining in the past decade, generating negative labor contributions to growth until 2001. The employment level started to rise only in 2002 when the unemployment rate began to decrease. Investment rates remained low until the FDI-induced investment boom of 2003-04. The main driver of Bulgaria's recent growth experience has been the growth in TFP, which provides a measure of the efficiency of a given set of factor inputs (capital and labor) in generating output. The World Bank attributed this to the outcome of "shedding excess capacity and eliminating inefficiencies" (see World Bank, 2005). This is similar to the experience of the NMS and raises a related key question: Has the TFP growth achieved thus far eliminated the bulk of the inefficiencies of central planning?

Figure 4. Bulgaria: Growth Accounting, 2001-2005



Source: National Statistical Institute and Fund staff estimates

46. **Over the medium-term, growth is expected to accelerate slightly to around 5.9 percent (Table 2).** Faster capital accumulation, mainly from EU accession-related investments, is expected to play a more important role in the medium-term growth, while the growth contribution of labor is likely to fall in light of projected population decline. Productivity is expected to grow by 3.4 percent per year, up from 2.9 percent in the previous five-year period, as efficiency and capacity are expanded. The country's medium-term growth prospects hinge, however, on Bulgaria's ability to successfully absorb the investment and implement institutional and structural reforms.

Table 2. Contribution to Real GDP Growth (In percent)

	Labor Contribution	Capital Contribution	TFP Growth	Real GDP Growth
2001-05	0.7	1.3	2.9	5.0
2006-11	0.1	2.4	3.4	5.9

Source: Staff calculation

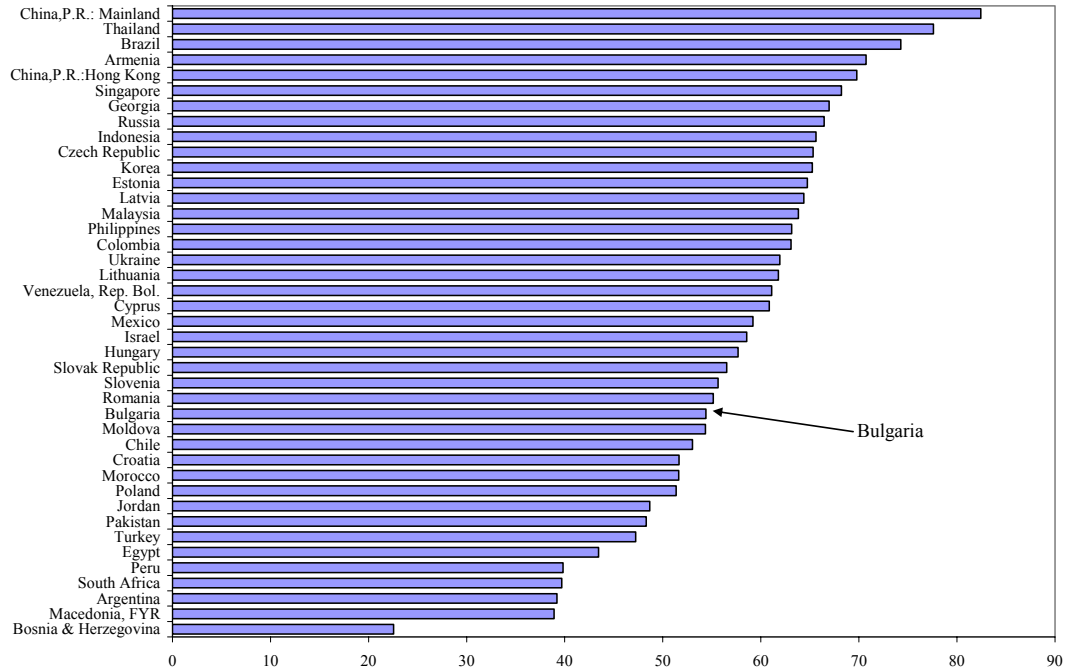
47. **Contributions from investment look promising in the medium term.** With the prospect of joining the EU, expanding domestic markets, and relatively cheap factors of production, Bulgaria has become a popular investment destination. FDI has increased rapidly

[27] On account of both a lack of reliable data on capital stocks and the structural breaks caused by the economic crisis in 1996-97, the present growth-accounting analysis is confined to the period after 2000. Appendix I discusses issues in growth accounting and describes the assumptions used in this paper.

in the last few years, and investment is now the main contributor to GDP growth. It is estimated that this trend will continue. Moreover, the EU accession-related investments to improve the quality of infrastructure and institutions should have crowding-in effects, attracting yet more private investments and raising productivity. Under the baseline scenario, total gross investment is projected to reach 31 percent of GDP by 2011. This implies that capital will contribute about 2.4 percentage points per year to real GDP growth in the next five years.

48. **Over the medium term, one of the major challenges to Bulgaria's growth prospects is its relatively low labor force participation rate and declining population.** Labor force participation and employment rates in Bulgaria are comparatively low (Figures 5). The employment rate is also well below the Lisbon agenda's 2010 target rate of 70 percent. Moreover, Bulgaria's population has been declining for almost two decades, and is projected to decline further. This, of course, raises a concern about medium-term growth prospects. Over the past four years, Bulgaria has managed to increase its employment level mainly by lowering the unemployment rate, which reached a record low of 10 percent at end-2005. Given that the current level is close to the EU-25 average of around 9 percent and already lower that the NMS-8 average of 13 percent, sizeable further reductions in the unemployment rate will be a challenge.

Figure 5. Emerging Markets: Employment as percent of Working-age Population (15-64)

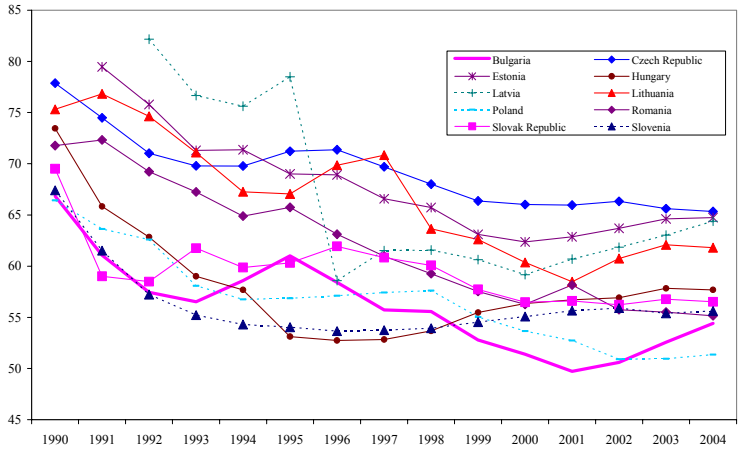


Source: WEO; and WDI

49. **Over a longer horizon, the decline and ageing of the population continue to be worrisome**. Population projections by Eurostat, the World Bank's World Development Indicators (WDI), and Bulgaria's National Statistics Institute (NSI) all suggest that population will continue to decline (Figure 7). By 2035, population in Bulgaria is projected to have declined by about 20 percent.[28] The median age of population will increase from 40 years in 2005 to 51 years in 2035. The working-age population is projected to decline by more than 30 percent in the next 30 years, lowering its share in total population from 69 percent to 62 percent. Although net out-migration could reverse as living standards rise, it may not be enough to offset the decline due to natural factors

50. **Positive contributions from labor inputs are thus essential for a more rapid catch-up.** Bulgaria can potentially achieve higher per capita income growth and a faster catch-up process by minimizing the decline of employment. In the baseline scenario, it is assumed that, by 2001, the labor force participation rate will return to its 2001 level of 62.5 percent, and the unemployment rate will be lowered to the current EU-15 average of 8.8 percent by 2011, raising the employment rate only modestly. These assumptions are necessary simply to maintain the employment level in the next five years. However, from a historical perspective, there is room for Bulgaria to raise employment further than assumed here. As in other CEECs, Bulgaria experienced a massive shedding of labor during the transition (Figure 6). The contribution of labor could be raised if Bulgaria could achieve the employment rate witnessed during the early 1990s.

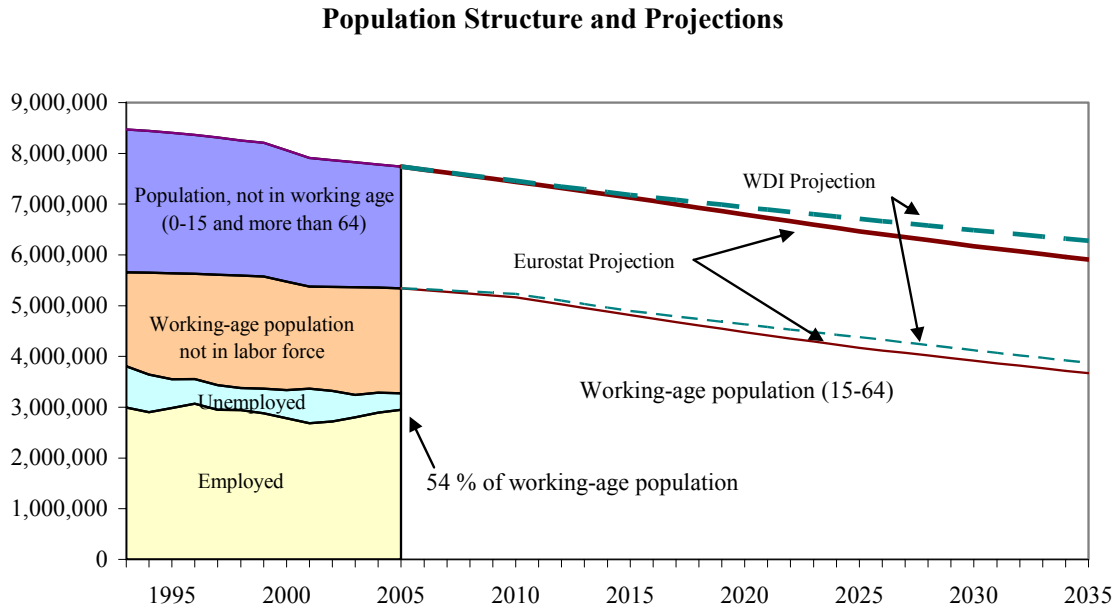
Figure 6. Employment Rates in selected CEECs, 1990-2004
(In percent of population between 15-64)



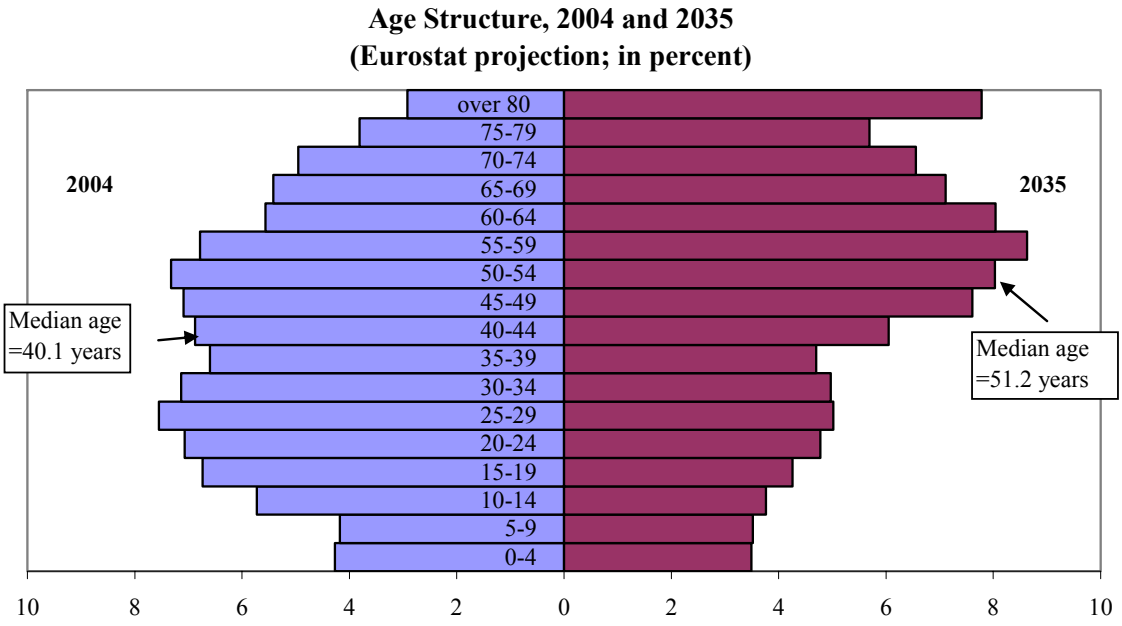
Source: WEO; and WDI

[28] The projected decline in total population is mainly due to negative rate of natural increases. The projections assume relatively low and declining net out-migration.

Figure 7. Bulgaria: Population Structure and Projections



Sources: ILO; and Eurostat



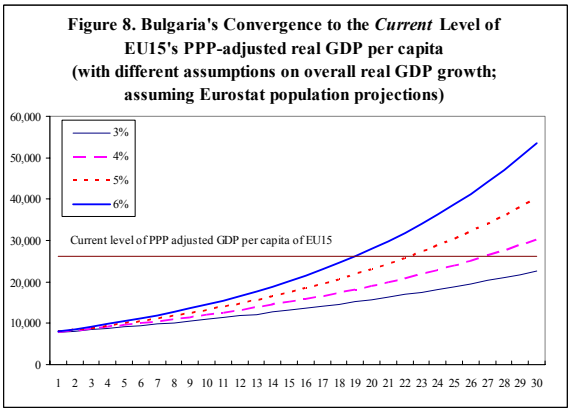
Sources: NSI; and Eurostat

C. Catch-Up, Long-Term Convergence Prospects, and Growth Scenarios

51. **A prospectively slow and prolonged convergence period poses a challenge for Bulgaria.** With the large initial income difference, it will take decades for Bulgaria to converge to the living standards of the EU. A key challenge for policy makers is how to benefit from the growth opportunities from EU accession while limiting the vulnerabilities associated with the catch-up.

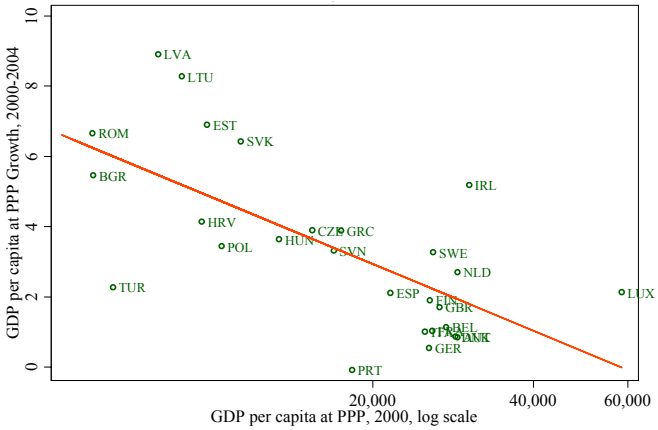
52. **Even with optimistic assumptions, it will take about 20 years to reach the *current* level of per capita income of the EU-15.** Assuming a *constant* real GDP growth rate of 6 percent and Eurostat's population projections, Bulgaria may not reach the EU-15's current level of PPP-adjusted GDP per capita until 2025 (Figure 8).

Figure 8. Bulgaria's Convergence to the *Current* Level of EU15's PPP-adjusted real GDP per capita (with different assumptions on overall real GDP growth; assuming Eurostat population projections)



53. **In terms of absolute convergence, it is estimated that it would take Bulgaria several decades to close the income gap.** Absolute convergence assumes that the GDP growth of a lower income country should be higher than the growth of the higher income country, and the growth differential would decline as the income gap closes.[29] The speed at which the income gap can be closed depends on the country's medium-term growth rates and their initial level of income per capita. Using the 2000-04 growth experience as a starting point, it could take Bulgaria about 20 years to close half of the current income gap and more than 40 years to reach three-fourths of the average income per capita of the euro area. Table 3 compares Bulgaria's estimated time required for convergence with that of other CEECs. Bulgaria's convergence is considerably longer than the other countries except Poland, whose growth experience has been less impressive in the recent years.

Figure 9. EU and CEECs: Growth and GDP per capita



[29] See a discussion about the real convergence in Barro and Sala-i-Martin (2004). Appendix II also briefly discusses the implications of Solow-Swan growth model to the speed of real convergence.

Table 3: Convergence with Euro Area Income per Capita 1/

	2004 income per capita relative to Euro area, PPP (in percent)	Years to close half the income gap	Years to reach per capita income ratio of 75%	Years to reach per capita income ratio of 90%
Bulgaria	28.7	18	39	66
Romania	30.2	18	37	63
Czech Republic	68.9	14	5	19
Estonia	49.1	6	8	34
Hungary	59.2	10	9	33
Latvia	42.8	7	11	41
Lithuania	46.3	7	10	33
Poland	45.8	27	39	73
Slovakia	51.6	17	20	54
Slovenia	74.0	8	1	16

1/ The convergence half-life is calculated as ln(2)/β, where β=-(g -g *)/ln(Y/Y*), g is per capita income growth, Y is the per capita income level in PPP terms, and * indicates the euro area.

Sources: WDI; Schadler and others (2006); and staff calculations.

54. **Growth scenarios illustrate the challenges Bulgaria will face in achieving a more rapid convergence.** The long time period required for catch-up raises the question of what is needed to speed up convergence. Following Schadler and others (2006), this section considers alternative investment and productivity growth scenarios required to reduce by 20 percent the time estimated to close half of the income gap (i.e. closing half of the income gap in 14½ years rather than 18 years)**.** In order to achieve the goal, Bulgaria's per capita GDP would have to grow at an average rate of about 7¾ percent per year during 2006-11. With the population projected to decline by ¾ percent per year, overall GDP growth would need to reach about 7 percent per year. Given a projected labor contribution to growth of 0.1 percent as shown in Table 2, two scenarios illustrate required rates of productivity growth and investment to achieve the target growth rate:

- Given the productivity growth of 3.4 percent in the baseline, the investment rate would have to be almost 10 percentage points of GDP higher than the baseline, raising the investment-to-GDP ratio to more than 40 percent of GDP in 2010, compared to less than 30 percent in 2005.

- Alternatively, the higher required growth rate could be achieved through higher productivity growth. Given the contribution of capital assumed in the baseline scenario, TFP growth would need to average 4½ percent per year, a third higher than in the baseline and 1½ percentage points higher than the productivity growth rate observed during 2001-05. While productivity growth of 4½ percent has been achieved in some emerging market economies, a key question for Bulgaria is: how would such a large improvement in productivity be achieved, given the fact that the average TFP growth rate of 2.9 percent per year during the previous five years owed

a great deal to the reduction of inefficiencies and excess capacity, on which much of the achievable progress has already been made.

D. Conclusions

55. **Bulgaria's convergence was off to a late start compared to other CEECs, and its convergence to EU living standards will be prolonged.** Following its emergence from crisis, Bulgaria's growth experience has been impressive, and prospects are promising. However, Bulgaria's real GDP per capita only reached the pre-transition level a few years ago. Given its low current level of income and its declining and aging population, Bulgaria's convergence will take decades. Thus, the medium-term challenge confronting authorities is daunting.

56. **Prudent macroeconomic policies are key for sustained economic growth and smooth catch-up.** Similar to Romania, Bulgaria is facing a "marathon" rather than a "sprint" in its convergence to EU living standards (see IMF, 2006). Past experience highlights that an economic crisis can significantly delay a country's catch-up. And as Bulgaria's economic and financial integration in the EU increases, shocks emanating elsewhere in the EU will be felt more rapidly and extensively than otherwise. The more flexible and adaptable the Bulgarian economy, the greater will be its capacity to absorb the impacts of such shocks. In turn, an accelerated structural reform agenda holds the promise, other things being equal, of speeding up convergence to EU living standards.

Appendix I. Growth Accounting

Basic set-up

The growth-accounting analysis starts from a standard general production function, which can be written as

$$Y=F(A,K,L) \tag{A1}$$

where Y is output, which is a function of three inputs of production: A is technological progress, K is capital, and L is labor. We can decompose the growth rate of output into contributions from the three inputs by taking logarithms of the above equation and taking derivatives with respect to time to get

$$\frac{\dot{Y}}{Y}=\frac{F_A A}{Y}\frac{\dot{A}}{A}+\frac{F_K K}{Y}\frac{\dot{K}}{K}+\frac{F_L L}{Y}\frac{\dot{L}}{L}, \tag{A2}$$

where $\dot{X}=\frac{dX}{dt}$. Suppose that the level of technological progress (A) enters the production function in a Hicks-neutral way, so that $Y = A\cdot\widetilde{F}(K,L)$; then $F_A A = Y$. The above growth accounting can be written as

$$\frac{\dot{Y}}{Y}=\frac{\dot{A}}{A}+\frac{F_K K}{Y}\frac{\dot{K}}{K}+\frac{F_L L}{Y}\frac{\dot{L}}{L}. \tag{A3}$$

The marginal products of capital and labor (F_K and F_L, respectively), which are not measurable directly, can be estimated by their observed factor prices. If the factors of production are paid their social marginal products, so that $F_K=R$ (the rental price of capital) and $F_L = w$ (wages), then $F_L L = wL$, which is the total amount of wages paid in the economy. Hence, $F_L L/Y = wL/Y$ is the fraction of GDP used to pay wages or the labor share of GDP, denoted by s_L. Similarly, $F_K K/Y = RK/Y$ is the capital share of GDP, denoted by s_K.

In addition, the contribution of technological progress to growth, $\dot{A}/A$, although not observable, can be calculated from (A3) as a "residual" of the actual growth rate of output and the part that can be explained by the growth of capital and labor:

$$\frac{\dot{A}}{A}=\frac{\dot{Y}}{Y}-s_K\frac{\dot{K}}{K}-s_L\frac{\dot{L}}{L}. \tag{A4}$$

The value $\dot{A}/A$ is often described as an estimate of total factor productivity (TFP) growth.

Estimate of the capital stock

Estimate of the capital stock is one of the important components in the growth-accounting exercise. In this chapter, we use the perpetual inventory method to construct a series of capital stock. The measures of the stock of physical capital come from the accumulation of figures on gross physical investment, along with estimates of depreciation of existing stocks:

$$K_t = (1-\delta)K_{t-1} + I_t, \tag{A5}$$

where δ is the depreciation rate and I_t is gross investment in period *t*. Substituting the previous period processes into the above equation, we get the following relationship

$$K_t = (1-\delta)^t K_0 + \sum_{j=1}^{t} (1-\delta)^{t-j} I_j \,. \tag{A6}$$

Capital stock at period *t* is determined by the initial level of capital, K_0, the series of investment for all intervening periods, and the depreciation rate. Because there is no widely used estimate of the initial capital stock for Bulgaria,[30] we arbitrarily assume 1990 as the initial year and assume that real investment in 1991 is equal to depreciated capital stock with a 5 percent depreciation rate ($I_{1991} = \delta K_{1990}$). This implies that $K_{1990}=I_{1991}/0.05$.

Using this method of estimation, it is not very crucial to get a precise initial level of the capital stock, since the initial level will depreciate over time and become less relevant in the calculation. The assumed depreciation rate, however, plays a crucial role. An appropriate depreciation rate would depend on the nature of physical capital stocks and their service lives.[31] Instead of assuming a fixed depreciation rate throughout the whole period of analysis, we use information on "consumption of fixed capital," an item in the national income accounts that measures the depreciation of capital stocks. The results are not qualitatively different from those obtained by assuming a fixed depreciation rate, however.

[30] Many researchers have used an estimate of capital stocks from Nehru and Dhareshwar (1995) as the initial level of capital stocks. Unfortunately, Bulgaria was not included in the sample.

[31] In constructing the measure of physical capital stocks, researchers assume different depreciation rates for Bulgaria. For example, the World Bank (2005) use depreciation rates of 6.0-7.5 percent in its calculation, while Ganev (2005) assumes a depreciation rate of 5 percent.

Appendix II. Speed of Real Convergence

The Solow-Swan growth model implies that the growth rate of real income per capita is determined by

$$\frac{\dot{\hat{y}}}{\hat{y}} \approx -\beta^* \cdot \ln\left(\frac{\hat{y}}{\hat{y}^*}\right), \tag{A7}$$

where $\hat{y}$ is the level of real income per effective unit of labor and $\hat{y}^*$ is the steady state level of income per effective unit of labor. β^* is the speed at which per capita income approaches its steady state level. Because the solution to the above differential equation (A7) is

$$\ln(\hat{y}(t)) = (1 - e^{-\beta^* t}) \ln(\hat{y}^*) + e^{-\beta^* t} \ln(\hat{y}(0)), \tag{A8}$$

the time *t* for which $\ln(\hat{y}(t))$ is halfway between the initial level of income, $\ln(\hat{y}(0))$, and the steady state level, $\ln(\hat{y}^*)$, satisfies $e^{-\beta^* t} = 1/2$. The half-life of convergence is, therefore, $\ln(2)/\beta^*$.

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III. Fiscal Implications of EU Accession and the Fiscal Stance[32]

A. Introduction

57. **Accession to the European Union presents Bulgaria with a unique opportunity to help speed up convergence to Western European living standards**. Since abandoning central planning, Bulgaria has pursued closer institutional, trade, and financial integration with Western Europe in an effort to boost the economy's performance and hasten convergence to EU living standards.[33] A key step in this process has been its goal of EU membership, which appears close to being realized. In order to help prepare for accession, Bulgaria has been receiving pre-accession financial assistance from the EU. Upon accession, which this chapter assumes will take place on January 1, 2007, the size of this assistance will increase significantly.

58. **Upon accession, Bulgaria will receive substantial transfers from the EU budget**. Reflecting its relatively low income, Bulgaria is eligible to receive larger EU transfers than the New Member States (NMS). Bulgaria is expected to draw funds averaging 3.6 percent of GDP annually during 2007-09.[34] After deducting annual contributions to the EU budget, the annual average net transfer to Bulgaria could be about 2½ percent of GDP (including both pre- and post-accession transfers). By comparison, the NMS are expected to draw on average 2 percent of GDP, according to Hallet and Keereman (2005), not adjusting for the EU budget contribution (which averages 0.9 percent of GDP for the NMS).

59. **Although Bulgaria will be a net recipient of EU funds during 2007-09, the budget balance is most likely to be adversely affected**. This is because there are additional budgetary effects from accession, including the contribution to the EU budget, co-financing requirements, and revenue losses stemming from lower customs and VAT collections. Estimates presented in this chapter suggest that the downward pressure on the fiscal position could amount to about 2½ percent of GDP on average in 2007-09. In these circumstances, and with external vulnerabilities expected to decline only gradually over the medium term, prudent fiscal policy will require finding partially offsetting measures.

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[32] Prepared by Christoph Duenwald. The assistance of the Sofia Resident Representative office in preparing this chapter is gratefully acknowledged. Figures quoted in this chapter are generally preliminary and subject to change.

[33] See Chapter II for a discussion of Bulgaria's growth and convergence prospects.

[34] This chapter will mainly deal with the initial programming period 2007-09.

60. **The chapter focuses on three key questions**:

- What is the direct fiscal impact of EU accession? Indirect (or second round) effects—such as positive fiscal effects due to higher growth—are beyond the scope of this study.

- What would be an appropriate fiscal stance, in 2007, given the answer to the above and the conjunctural outlook?

- What fiscal position should Bulgaria target over the medium term?

61. **On the first question, the chapter concludes that, while significant, the fiscal impact of accession is manageable**. First, the capacity to absorb EU funds is likely to be much less than projected, if experience in the NMS is a guide.[35] And second, Bulgaria has the option to restructure its expenditure to make room for the new spending.

62. **On the second question, an acceptable fiscal stance in 2007 would have to balance several competing objectives**. On the one hand, external vulnerabilities are likely to remain high next year, so a substantial fiscal loosening relative to this year's target is inappropriate. On the other hand, utilization of the EU funds should be maximized in order to facilitate convergence to EU living standards.

63. **Beyond 2007, fiscal policy will need to remain cautious**. Even in a benign scenario, external vulnerabilities—as measured by the external current account deficit and the gross external debt ratio—are expected to decline only gradually over the medium term. As a result, fiscal surpluses will be necessary to partially offset sustained private sector savings-investment imbalances, and to provide flexibility in case of cyclical downturns.

64. **The plan of the chapter is as follows**. The next section provides background on the EU financing instruments and the associated financial flows. Section C outlines the indicative EU financial packages for Bulgaria and the authorities' estimate of expected utilization of the funds. The subsequent section assesses the overall fiscal impact and discusses the 2007 fiscal stance, while section E covers fiscal policy in the medium term. A final section offers concluding remarks.

B. Background

65. **Membership in the EU entails a number of financial implications, both before and after accession.** In order to assist accession candidates to carry out reforms required for

[35] For the purposes of this chapter, the term "absorption capacity" loosely covers institutional capacity to manage the EU funds as well as the capacity to identify suitable projects.

membership, the EU provides three main types of financial instruments prior to accession: the PHARE, ISPA, and SAPARD programs (see Box 1).[36] Upon accession, new EU members start to participate in the system of fiscal transfers among the member states. On the one hand, they have to make annual contributions to the EU budget, while on the other

Box 1. General Overview of the Financial Impact of EU Accession

EU-related inflows into the country:

- **Pre-accession funds (PHARE, ISPA, and SAPARD)**. PHARE mainly finances institution building, investment projects in the areas of cross-border cooperation, and economic and social cohesion that are not covered by the ISPA and SAPARD instruments. PHARE also helps to meet the cost of participation in EC programs and agencies. The ISPA program supports large-scale environment and transport investment projects. The SAPARD program supports agricultural and rural development.
- **Post-accession funds**
  - **Structural actions:** the most important element of aid to poorer EU members, are meant to speed up poor countries' convergence toward average EU income levels: (1) **Structural Funds** (which in turn consist of the European Regional Development Fund, the European Social Fund, the Financial Instrument for Fisheries Guidance, and the Guidance Section of the EAGGF); and (2) the **Cohesion Fund**, which supports transport and environmental projects. Funding in this category is conditional on the development and implementation of specific projects.
  - **The EAGGF** consists of direct payments (replaces the national system for agricultural subsidies), market measures (for export subsidies and supporting the stability of the agricultural market), and rural development funds. In the case of the direct payments, Bulgaria will begin to receive cash in 2008, but will have to self-finance the relevant expenditures in 2007. In addition, at the discretion of the new member but within defined limits, top-up payments to farmers can be provided to supplement EU direct payments. Note that all agricultural financial instruments will be combined into a new European Agricultural Development Fund and the EAGGF will be terminated.
  - **Internal policies: existing policies**, which finance mainly expenditure on education, culture, social affairs, energy, environment and research, related to the implementation of the *acquis*; **institution building**; funds for the construction of the **Schengen** border; and **nuclear safety**, to assist the country in nuclear plant decommissioning.
- **Special cash transfers** to ensure that the net position of a new member vis-à-vis the EU does not deteriorate after EU entry.

EU-related "costs"

- **Contribution to the EU budget** (see Box 2).
- **EU-financed project spending**
- **National co-financing:** Funds disbursed under structural actions and rural development require national co-financing by the budget, or by the public and private sectors. In principle, minimum national co-financing is around 25 percent.
- **Revenue losses** from customs and VAT due to loss of border controls and legal changes for trade with EU members. This is to some extent offset by excise tax harmonization, which usually implies an increase in rates.

[36] For further details, see the European Commission website: *http://europa.eu.int/comm/enlargement*.

they will have access to allocations from a number of funds: Structural Funds, the Cohesion Fund, and the European Agricultural Guidance and Guarantee Fund (EAGGF). In addition, accession countries have to co-finance EU structural operations from their national budgets, while the alignment of excise tax rates, VAT collection, and customs tariffs could result in net revenue losses. These various considerations are mapped out and explained in Box 1, while section C provides data for Bulgaria for the listed items.[37] The size of the pre- and post-accession transfers will depend on the institutional capacities of the new member states.

66. **A number of studies have tried to quantify the likely fiscal impact of accession for the NMS**. In general, an assessment of the fiscal impact of accession is complicated by the difficulty in pinning down a counterfactual (i.e., non-accession) scenario. While methodologies and estimated effects differ, the consensus appears to be that EU accession tends to weaken the acceding country's fiscal position, to the extent there are no offsetting expenditure savings and/or revenue enhancements. Most of the NMS' Pre-accession Economic Programs (PEP) contain estimates of the fiscal impact of accession. However, these estimates are difficult to compare as they are based on varying methodologies and depend on the size of the flows themselves. Some studies have looked at larger samples of countries. For example, Kopits and Székely (2003) estimate the direct effects for five NMS: Czech Republic, Estonia, Hungary, Poland, and Slovenia. They arrive at an estimate of a negative net budgetary effect of accession in the range of 3 to 4¾ percent of GDP. Antczak (2003) estimates that deficits will deteriorate by up to 3 percent of GDP in the first few years after accession. Backé (2002) foresees a somewhat lower negative impact of up to 1 percent of GDP.[38] A recent study estimates the net fiscal impact of accession for Romania at -0.9 percent of GDP (including only post-accession effects) in 2007 (see IMF (2006)).

67. **In their work in this area, analysts at the EC argue that some of the studies for the NMS overstate the effects**. Hallet (2004) states that "accession itself is not a very convincing justification for higher budget deficits in the new Member States after accession." Indeed, Hallet and Keereman (2005) estimate the net budgetary effects to be positive, amounting to ½ percent of GDP for the NMS as a whole in the period 2004-06 (including pre-accession aid). In attempting to explain the different results, they view as decisive the question of whether accession related expenditure is considered to be additional spending or to be financed from a restructuring the budget.

C. The Indicative Financial Envelope and Expected Utilization of Funds

68. This section outlines the indicative financial envelope under the pre- and post-accession financial instruments. Since the actual utilization of EU funds is expected to be much lower, data on the latter are also presented.

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[37] The box draws on Chapter II of IMF (2004).

[38] These estimates refer to annual effects on the fiscal balance over the medium term following EU accession.

Indicative Financial Envelope

69. **Bulgaria has been receiving disbursements under the pre-accession financial instruments, and will continue to benefit from such flows until 2010**.[39] On average during 2002-09, funds allocated for Bulgaria from the EU budget under these instruments is about 1 percent of GDP. Utilization of these funds—as measured by the ratio of funds disbursed (spent) to funds allocated—has been relatively high during 2002-05, at about 87 percent on average (not including co-financing). Going forward, pre-accession financing is expected to peak in 2007, and then gradually diminish before disappearing altogether in 2011 (not shown in table). The largest financing instrument in most years is PHARE, closely followed by ISPA.

Table 1. Bulgaria: Pre-Accession Funds Allocated, 2005-09
(In millions of euros)

	2005 est.		2006		2007		2008		2009	
	EU budget	Co-finance	EU budget	Co-finance	EU budget	Co-finance	EU budget	Co-finance	EU budget	Co-finance
Phare	99	24	135	25	250	54	205	66	36	20
ISPA	75	3	116	30	190	74	173	51	92	36
SAPARD	64	17	87	19	51	25	68	25	19	0
Total	238	45	337	75	491	153	447	142	147	56
Total (percent of GDP)	**1.1**	**0.2**	**1.4**	**0.3**	**1.9**	**0.6**	**1.6**	**0.5**	**0.5**	**0.2**

Sources: Bulgarian Ministry of Finance, May 2006; and IMF staff estimates.

70. **In addition, Bulgaria is eligible for large transfers from the EU upon accession**. The EU has committed € 4.6 billion (2004 prices) in commitment appropriations to Bulgaria for the period 2007-09 (Table 2).[40]

Table 2. Bulgaria: Indicative Financial Package, 2007-09 1/
(Millions of euros, 2004 prices)

	2007	2008	2009	2007–09
Common Agricultural Policy	315	571	666	1552
Market measures	132	129	127	388
Direct payments	0	198	233	431
Rural development	183	244	306	733
Structural Actions	539	759	1002	2300
Internal Policies	173	169	166	508
Existing policies	88	89	91	268
Nuclear safety	70	70	70	210
Institution building	15	10	5	30
Compensation	122	59	59	240
Total Commitment Appropriation	1149	1558	1893	4600

Source: European Commission.
1/ Commitment appropriations.

[39] Commitments under PHARE started in 1992, and under ISPA and SAPARD in 2000.

[40] The EU distinguishes between *commitment* and *payment* appropriation. Commitment appropriations cover legal obligations made in that year regardless of the period over which the programs will be implemented. Payment appropriations are the amounts allocated for the current year but not necessarily disbursed.

The package consists of € 2.3 billion in structural actions (structural and cohesion funds, as discussed above), € 1.6 billion for agriculture including rural development, € 0.5 billion for internal policies, and € 0.2 billion for budgetary compensation.

Expected Utilization of Funds

71. **The authorities have projected the expected utilization of funds, given assumptions of absorption capacity**. These estimates are summarized in Table 3 where they are expressed as a percent of GDP. Transfers of pre-accession funds are expected to remain significant at 0.9 percent of GDP in 2007, but then decline rapidly. Post-accession transfers are estimated at 1.5 percent of GDP in 2007, but are then expected to average 3½ percent of GDP in 2008-09 as the inflows of CAP subsidies, as well as absorption capacity, increase.

Table 3. Bulgaria: Expected Utilization of EU Funds, 2007-09
(In percent of GDP)

	2007	2008	2009	2007-09 Total
Pre-accession funds	0.9	0.5	0.2	1.6
o/w PHARE	0.4	0.2	0.1	0.8
ISPA	0.4	0.2	0.1	0.7
SAPARD	0.1	0.0	0.0	0.2
Post-accession funds	1.5	3.4	4.1	9.1
o/w EAGGF	0.1	1.7	1.8	3.6
Structural Actions	0.5	0.9	1.5	2.9
Internal Policies	0.7	0.7	0.7	2.2
Total pre- and post-accession funds	2.5	3.9	4.3	10.7

Source: Bulgarian Ministry of Finance; IMF staff calculations.

D. Impact on the Fiscal Position

72. **While the previous section outlined the scale and nature of EU funds available to the country as a whole, this section narrows the focus to the pure budgetary impact of EU accession**. Thus, not all of the items listed in Box 1 and Tables 1-3 have budgetary consequences. In particular, of funds disbursed under the EAGGF, only those related to rural development would affect fiscal revenue and expenditure, while under "internal policies", funds for nuclear plant decommissioning also do not flow through the budget.

73. **The main budgetary implications of accession for the 2007-09 period are summarized in Table 4**. Conceptually, the approach taken to assess the fiscal impact of accession is to add post-accession fiscal effects to a baseline that includes only underlying fiscal projections and pre-accession fiscal effects. The result is that the net negative impact of accession on the budget is 2.6 percent of GDP on average during 2007-09, absent offsetting fiscal measures. The following factors and considerations lead to this result:

- **Payments from the EU budget and corresponding expenditures**. In general, the post-accession funds that become available on January 1, 2007 are tied to particular programs or projects, so that the net effect on the budget should be approximately zero (abstracting from co-financing requirements, discussed below). However, since there are timing differences in some cases between project spending in the Bulgarian budget and receipt of funds from the EU, there may be a temporary net impact on the fiscal balance measured on a cash basis.[41] In addition, the "receipts from EU budget" line includes the special cash transfer (about 0.2 percent of GDP). For 2007, receipts from the EU budget total 1.3 percent of GDP, and grant-financed spending is 1.1 percent of GDP.

Table 4. Bulgaria: Net Budgetary Impact of EU Accession, 2007-09 1/
(In percent of GDP)

	2007	2008	2009
Net transfers to National Budget	0.0	1.0	1.9
Receipts from EU budget (+)	1.3	2.2	3.1
Contributions to EU budget (-)	1.2	1.3	1.2
Other factors	-2.6	-3.6	-4.4
Project spending (EU financed)	-1.1	-1.8	-2.8
Cofinancing	-0.3	-0.5	-0.6
Indirect revenue impact	-1.2	-1.3	-1.1
Net impact on budget	-2.6	-2.6	-2.5

1/ Includes only post-accession effects.
Sources: Ministry of Finance; and IMF staff calculations.

- **The contribution to the EU budget**. The contribution to the EU budget contains the items listed in Box 2. The contribution Bulgaria has to make is 1.2-1.3 percent of GDP annually in 2007-09.

Box 2. Contribution to the EU Budget

- **Traditional own resources**. These are composed of (i) agricultural levies; and (ii) customs duties collected on imports from non-member states. Member states pass 75 percent of their collections of customs duties to the EU budget, and retain the remainder.
- **VAT-based resources**. This is derived from the application of a uniform rate to the VAT assessment base for the member.
- **GNI-based resources**. This is a variable topping up resource to help cover the EU's payment appropriations. It is the largest revenue source for the EU budget.
- **UK rebate**. The UK negotiated a rebate on its payments to the common budget. This rebate is financed by all the other EU members.

Box Table 1. Bulgaria: Contribution to EU Budget, 2007-09
(In millions of BGN)

	2007	2008	2009	2007-09
Traditional own resources	180	180	180	540
VAT-based resources	82	93	101	276
GNI-based resources	335	382	415	1,132
UK rebate	37	42	46	125
Total (Percent of GDP)	1.2	1.3	1.2	3.1

Source: Bulgarian Ministry of Finance; IMF staff estimates.

[41] In this regard, the presentation in this paper follows the accrual-based ESA95 budget methodology.

- **Co-financing requirements**. EU structural assistance finances less than the total cost of a program or project, which means that national co-financing is required, aimed at providing incentives for efficient use of such funds.[42] The maximum EU contribution is 75 percent of total public project (or program) spending, but there are exceptions, so that the co-financing requirement is typically in the 20-25 percent range. The cost for Bulgaria of co-financing is projected at 0.3 percent of GDP in 2007, doubling to 0.6 percent by 2009.

- **Revenue losses from lower customs collections and lower VAT efficiency**. Upon accession, border controls between Bulgaria and the EU will cease to exist. Hence, imports from the EU will no longer be subject to import duties. In addition, 75 percent of those duties collected on imports from non-member states accrues to the EU budget (part of the contribution to the EU budget, under traditional own resources), leaving 25 percent as a "fee" for such collections. Similarly, VAT collection on imports from EU member states will no longer be collected by customs offices; upon accession, such collections will be handled domestically by the National Revenue Agency. The room for evasion and fraud in that case is greater than under the current system, and some losses in VAT collections are therefore to be expected.[43,44] The authorities project the revenue loss to be around 1.2 percent of GDP, although there is a large margin of uncertainty around this estimate.

- **Revenue gains from the harmonization of excises**. Bulgarian excise rates on alcoholic beverages are being raised to EU minimum levels, and excise rates on tobacco and fuels also continue to be raised. From 2007, Bulgaria will levy excises on electricity, coal, and coke. The EU has allowed members (and prospective members) a long period of transition to these higher rates. Bulgaria began raising excise rates in 2002 and has until end-2013 to complete this schedule.[45] Any revenue gains from higher excises are already included in the baseline fiscal projection, since the schedule has been known for some time.

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[42] Such co-financing requirements also exist for the pre-accession funds. The co-financing can come from the budget sector, the broader public sector, or the private sector.

[43] The VAT losses relate not only to lower collection efficiency but also to the time shift in the collection of VAT imports from EU countries; such VAT will no longer be collected immediately upon importation but rather with a delay, after the filing of a tax return. This source of loss is of a one-time nature.

[44] Such losses were also experienced in the NMS. In Slovakia, for instance, the Ministry of Finance estimated that the losses in VAT collection due to accession amounted to SKK 8.1 billion in 2004 (0.6 percent of GDP; see Financial Policy Institute, Ministry of Finance of the Slovak Republic, September 2005).

[45] Countries also have the option of bringing such increases forward, as Bulgaria did in 2006 for alcohol and tobacco excises.

- **Additionality requirement**. In general, pre-accession aid, structural funds and rural development transfers are subject to the additionality requirement whereby EU transfers may not substitute existing expenditure. However, the EC has generally taken a flexible approach, in part because it is difficult to verify whether this requirement has been met.

2007 Fiscal Stance

74. **It is clear from the foregoing that, absent offsetting spending cuts or new revenue measures, EU accession will be accompanied by a sizeable fiscal impulse**. Staff calculations suggest that in 2007 the general government surplus would decline to 1.4 percent of GDP, a substantial easing from the projected 3.2 percent surplus in 2006 (Table 5). This result is derived by adding to projected revenue and expenditure baselines—which include underlying fiscal projections and estimated pre-accession effects—the post-accession effects. On the revenue side, accession has a neutral effect, as post-accession grants (including the special cash transfer) are offset by revenue losses. Hence, revenue-to-GDP remains at 39.6 percent of GDP. On the expenditure side, accession adds 2.6 percent of GDP in new spending, raising the expenditure ratio to 38.2 percent of GDP.[46]

Table 5. Bulgaria: 2007 Fiscal Projection

	Millions of leva	Percent of GDP
Baseline revenue, excl. postacc.-related	20,251 1/	39.6
plus:		
Post accession grants	641	1.3
Indirect effects	-638	-1.2
Total	3	0.0
Final revenue	20,254	39.6
Expenditure baseline, excl. postacc.-related	18,207 2/	35.6
plus:		
Post accession spending	1,324	2.6
of which:		
cofinancing	78	0.2
agri top up	55	0.1
project spending	556	1.1
contribution to EU budget	634	1.2
Expenditure	19,531	38.2
Balance excluding expenditure savings	723	1.4
Expenditure savings	-298	-0.6
Final expenditure	19,233	37.6
Overall balance, including EU effects	1,021	2.0

1/ Includes BGN 476 m. in preaccession grants.
2/ Includes BGN 652 m. in preaccession spending.
Source: Ministry of Finance; and IMF staff calculations.

75. **Against the backdrop of domestic demand pressures and external vulnerabilities highlighted in the Staff Report, a substantial fiscal easing would be inappropriate for macroprudential reasons**. At the same time, some degree of fiscal easing is inevitable if use is to be made of the EU grants, and recognizing the budgetary impact of the contribution to the EU budget and the revenue losses accompanying accession. After weighing these competing considerations, a 2 percent of GDP surplus in 2007 appears to be an appropriate objective. Achieving this goal, given the impact of accession outlined in Table 5, would

[46] This includes a small agricultural top up payment, which for simplicity was included with "co-financing" in Table 4.

necessitate expenditure saving/substitution of 0.6 percent of GDP. Part of these savings could be achieved by funding existing projects with EU rather than national grants.[47] Expenditure savings rather than revenue measures would be the preferred method of adjustment, in line with the government's fiscal objectives.

76. **A prudent fiscal stance is also justified by the uncertain broader macroeconomic impact of accession**. The large-scale grants from the EU should boost aggregate demand and output in the economy, without raising external debt. However, it is likely that the demand effects will exceed the supply effects in the short run, adding to overheating pressures. In the long run, the supply effects will probably dominate, and facilitate a shift to a higher growth path.

E. Fiscal Policy in the Medium Term

77. **Beyond 2007, the challenges for fiscal management will continue to be substantial**. As Table 4 shows, the negative impact on the fiscal position remains around 2½ percent of GDP in 2008-09. A number of factors—in addition to those related to EU accession that have been explored already—need to be considered when determining an appropriate medium-term fiscal framework for Bulgaria. On balance—while they do not provide quantitative guidance on the desirable medium-term path of the budget balance and debt levels—the considerations below seem to suggest that small medium-term fiscal surpluses are advisable:[48]

- **Public debt sustainability**. Public debt has been reduced substantially in recent years. Public debt stood at just below 32 percent of GDP at end-2005, less than half of its recent peak of 70 percent in 2001. This reflects both large primary surpluses and sizeable buybacks of external public debt financed by large-scale privatization. On current projections, public debt should decline to just under 19 percent of GDP by 2011. Schadler *et al* (2005) suggest that a prudent public debt ratio for Central European countries might be around 45 percent of GDP, so on this yardstick alone, there appears to be no conceivable reason for future surpluses.

- **Macroeconomic conditions**. The large private savings-investment imbalances of the last few years are expected to persist into the medium term, despite a projected increase in private savings. There will therefore remain an important basis for the public sector to provide a partial offset. Moreover, fiscal policy will remain the

[47] The World Bank (2005) provides proposals on expenditure allocation in the context of the EU grants.

[48] In contrast, the authorities' December 2005 PEP foresees deficits of 0.2 and 0.7 percent of GDP in 2007 and 2008, respectively. In its opinion on the PEP, the EC cautioned that the implied pro-cyclical fiscal stance could jeopardize the aim of reducing the current account deficit and inflation.

principal tool for managing adverse cyclical conditions; a prudent fiscal policy stance and low public debt would provide room for countercyclical fiscal stimulus, including by allowing automatic stabilizers to operate.[49]

- **Structural fiscal pressures**. On the one hand, Bulgaria's tax policy remains focused on cutting direct taxes (including payroll and corporate taxes) and aligning its tax legislation with EU standards. On the other hand, the country faces large demands on both current and capital public expenditure in the future, subject to a 40 percent of GDP public expenditure ceiling set by the current government. While the impact of the tax policy changes may over time be revenue neutral or even positive, the expenditure demands will need to be accommodated within the 40 percent ceiling, which is already essentially binding. The spending demands are expected to be largely in the infrastructure, health, and education sectors.[50] In addition, the substantial aging of Bulgaria's population over the next several decades will potentially place mounting demands on the budget.

- **The desired/optimal size of government**. At a spending level of 40 percent of GDP, a prudent fiscal stance would require a revenue ratio slightly in excess of 40 percent. This implies a sizeable tax burden on the private sector, which distorts incentives and reduces economic efficiency. Moreover, a recent World Bank (2005) study finds that, at an average of about 39 percent of GDP (excluding budgetary social security contributions) in 2000-04, spending is about 3 percent of GDP higher than predicted by a simple model that relates GDP per capita growth to the level of expenditure.

F. Concluding Remarks

78. **Accession to the EU presents Bulgaria with a one-time opportunity to underpin the longer-term goal of convergence with Western European living standards**. The EU transfers that become available upon accession—in addition to the pre-accession transfers already in the pipeline—will free up resources for spending in growth- and productivity-enhancing areas such as human resource development and infrastructure. But there will also be additional demands on Bulgaria's budget, including mandatory contributions to the EU budget, co-financing obligations, and revenue losses from lower VAT collection efficiency and from loss of customs revenue from imports originating in the EU. These demands will need to be carefully managed lest accession provides an excessive demand stimulus at a time of persistent overheating pressures.

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[49] Note, however, that the variability of annual output growth in Bulgaria has been relatively low in the past five years, with real GDP reaching a peak of 5.7 percent in 2004 and a low of 4.1 percent in 2001. By comparison, output growth in Romania varied between 4.1 and 8.4 percent during the same period.

[50] World Bank (2005) provides a good overview.

79. **Fiscal management will be particularly tested in 2007, the assumed year of accession in this chapter**. While there remain uncertainties regarding the eventual direct financial flows and other accession-related budgetary effects, staff estimate that the negative budgetary impact of accession is about 2½ percent of GDP, absent offsetting measures. Given underlying fiscal projections and pre-accession effects, this would result in a surplus of 1.4 percent of GDP, an excessive easing from the projected 3.2 percent surplus in 2006. Expenditure savings/substitution—which could partly be achieved by directing EU funds towards projects that are currently nationally funded—of about 0.6 percent of GDP could bring the surplus to a more acceptable level of 2 percent of GDP.

80. **The fiscal impact of accession will remain sizeable in the medium term as well**. Expenditure restructuring will therefore continue to be required. While public debt sustainability is not an issue, the need for fiscal buffers in the future and underlying spending pressures argue for small fiscal surpluses in the future.

81. **Bulgaria should look to the experience of the EU15 and the EU8 in order to make effective use of the EU grants**. Meth-Cohn and Shields (2005) offer four main lessons in this regard:

- Develop a clear strategic vision at all levels of government.
- Encourage public-private partnerships to ensure high quality and commercially viable projects while promoting public sector objectives, on condition that supporting legal conditions are in place.
- Ensure municipal involvement in the projects.
- Take into account the inherent inflexibility of EU funds.

Overall, Bulgaria will need to (1) ensure a high degree of absorption capacity while carefully directing the EU funds to projects that enhance the economy's productive potential and (2) enhance its ability to align national spending priorities better with those under EU programs by substituting certain national expenditure with EU payments. In this context, the recent criticism by the European Court of Accounts regarding the manner in which PHARE-funded projects were implemented in Bulgaria and Romania suggests there is scope for improvement in the utilization of EU funds.

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IV. Bulgaria—The Implications of Bank Behavior and Credit Measures for Solvency Risk[51]

A. Introduction

82. **Bulgaria's banking sector began a new phase following the introduction of the currency board in mid-1997.** Government borrowing from banks was largely prohibited, and capital controls were abolished. A formal deposit insurance scheme was introduced, and prudential regulations were brought in line with international standards and strictly enforced by the BNB. Confidence in the banking system returned quickly, and bank deposits grew rapidly, although bank lending to the non-government sector took longer to recover. In 2001, the flow of bank lending to the non-government sector reached 3.6 percent of GDP, increasing rapidly to 12 percent of GDP in 2004.

83. **The growth of Bulgaria's banking sector has brought significant benefits, but spillover risks may be rising.** The literature is unequivocal about the benefits of financial development for economic growth and development.[52] In Bulgaria, financial intermediation has been dominated by the banking sector, which accounts for 90 percent of financial sector assets. Bulgaria's banking sector has developed faster than the overall economy, and banking assets increased from 35 percent of GDP in 1999 to 78 percent by end 2005. That said, the rapid growth of credit has generated concerns over the stability of the banking sector, a potential overheating of the economy, and a more general underpricing of risk.

84. **In 2005, the Bulgarian National Bank (BNB) introduced quantitative limits on credit growth on the back of concerns surrounding the prudential risks associated with the credit boom.** The BNB reluctantly introduced these credit ceilings on banks at the end of Q1 2005, after a series of liquidity-draining measures failed to curb the very strong growth in lending (Figure 1). The BNB's main reason for taking these measures was its concern that too much risk was concentrated in the banking system. This move was supported by the IMF, as concerns mounted about the impact of the credit boom on macroeconomic performance.[53] At the time, it was acknowledged that the administrative measures would have only a temporary impact as circumvention would grow over time.

85. **A little over a year after the implementation of the measure, the demand restraining impact of the credit measures has diminished.** During the months following the introduction of the measures, there was anecdotal evidence that some companies had

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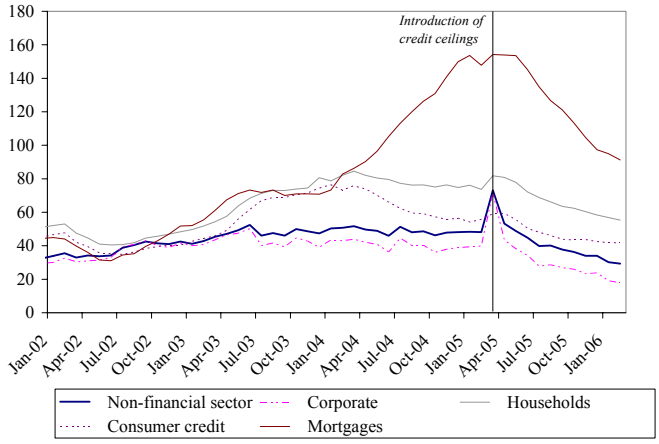
[51] Prepared by Johannes Herderschee and Li Lian Ong.

[52] See, for instance, Goldsmith (1969), King and Levine (1993) and Rajan and Zingales (1998).

[53] See empirical evidence in section D.

difficulty obtaining credit as banks reached their quarterly ceiling. However, since then, non-bank intermediation—mainly leasing and corporate borrowing outside the banking system—as well as cross-border lending have offset the impact on demand from the credit measures. Thus, while the data suggest that lending by banks has slowed, several predictable "distortions" in intermediation have arisen, which are disruptive to the competitiveness and efficiency of financial intermediation.

Figure 1. Bulgaria: Credit Growth
(In percent, year-on-year)



Source: Bulgarian National Bank and IMF staff calculations.

86. **The objective of this paper is to determine the impact of bank- and policy-specific factors on the soundness of the banking sector.** Specifically, we examine the extent to which variables such as the nature of bank ownership, banks' growth strategy and credit measures imposed by the authorities affect the soundness of banks, that is, their solvency risk. Solvency risk is measured in terms of the "distance to default." The method itself is not original, but this is the first time that it has been applied specifically to the Bulgarian banking sector. The BNB's policy on the transparency of disclosure in the banking sector, and the availability of frequent (quarterly) data allow for such analysis.

87. **The empirical results show that banks' structure, growth strategy and credit policies have significant impact on their solvency.** Specifically, banks with positive-growth strategies tend to face greater solvency risk concerns. Over time, locally-owned private banks have experienced greater solvency risk than their foreign-owned counterparts. This finding is consistent with the BNB's stress test results. Meanwhile, the introduction of credit ceilings appears to have slowed the general decline in the bank soundness indicator—at least for the time being—although there are insufficient data at this stage for a definitive conclusion on their longer-term effects.

88. **The paper is structured as follows**. An overview of developments in Bulgaria's banking sector is presented in section B, highlighting deposit and credit growth, and the macroeconomic benefits and risks associated with these developments; the opening of the

banking sector to foreign competition is also discussed. Section C discusses the BNB's response to the rapid credit growth to the economy, while section D provides an empirical analysis of the impact of behavioral, structural and policy factors in determining banks' solvency risk. Section E concludes.

B. Banking Sector Developments since 1997

89. **Reforms of the banking sector since the crisis has improved transparency and enhanced banks' decision-making process.** Information on outstanding loans of individuals improved in mid 2004 when the threshold of loans that have to be reported to the credit registry was eliminated and it became cheaper for banks to obtain information from the registry. The legal framework for enforcement of creditor rights has also been established. Over time, the economy recovered and confidence in the banking sector returned. Money and quasi-money increased as share of GDP (Figure 2), and remonetization gradually returned to levels similar to other countries in the region (Figures 2 and 3).

Figure 2. Bulgaria: Money and Quasi-Money as a Share of GDP, 1995−2005
(In percent)

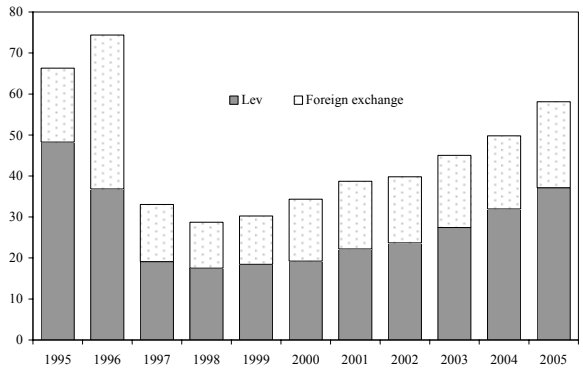
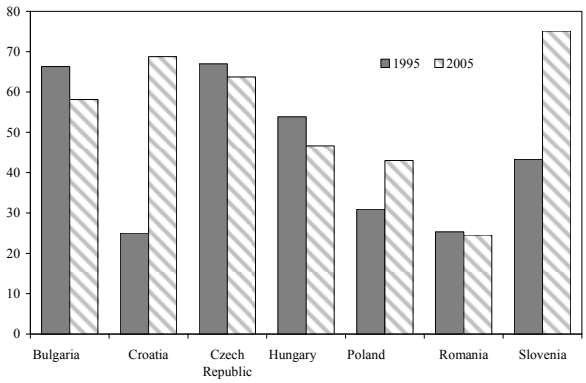


Figure 3. Cross-Country Comparison: Money and Quasi-Money as a Share of GDP, 1995 and 2005
(In percent)



Sources: Bulgarian National Bank, International Financial Statistics and IMF.

90. **The liberalization of the banking sector and the entry of foreign banks have played an important role in its development.** There is currently no restriction on foreign ownership of banks in Bulgaria. Consistent with the open capital account policy, non-residents are free to invest in Bulgarian banks provided they adhere to the prudential provisions that are enforced by the BNB. However, the BNB has not issued new banking licenses since 2003, as it considers the 34 banks that are active in Bulgaria as at end-2005 to be more than adequate to serve the local economy. That said, upon Bulgaria's accession to the EU, banks from EU-member states will be entitled to open branches in Bulgaria subject only to notification, not the approval, of the BNB.

Participants in the Banking Sector

91. **Over the years, state-owned banks' share of total banking assets has been sharply reduced through restructuring and privatization.** Banks privatized during the 1997-2003 period had a total market share of some 70 percent in 1999. Most privatized banks were sold to foreign investors in a key step towards the opening of the local banking sector to international participants (Table 1).[54]

Table 1. Bulgaria: Key Privatizations of Commercial Banks since 1997

Bank	Year	Investor	Share of Total Banking Assets (In percent)	
			1999	2004
United Bulgarian Bank	1997	Initially sold to Oppenhaimer and the EBRD, subsequently sold to National Bank of Greece.	12.4	8.8
Bulgarian Post Bank	1998	Aliko, CEN Balkan Holdings Limited.	5.3	4.7
SG Express Bank	1999	Societe Generale.	4.3	3.1
Bulbank	2000	UniCredito Italiano.	26.3	14.5
Hebros Commercial Bank	2000	Regent Pacific Limited.	3.9	2.5
Corporate Commercial Bank	2000	Bulgarian investors, then HVB-BACA.	0.2	1.4
Bank Biochim	2002	Bank Austria Creditanstalt (BACA).	5.3	7.8
DSK Bank	2003	OTP, Hungary.	13.0	13.1
Total			70.7	55.9

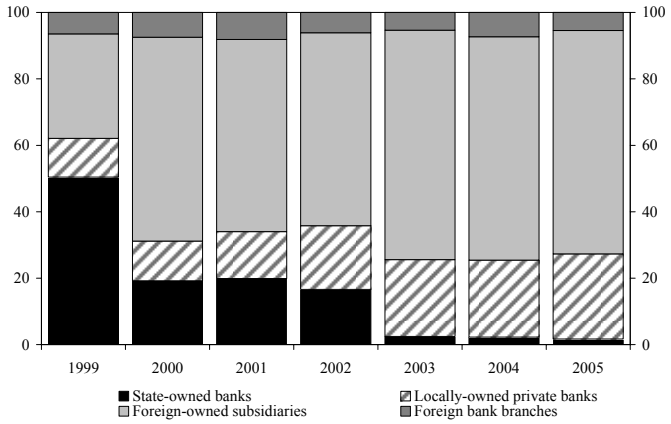
Sources: Barisitz (2002), Bulgarian National Bank data and IMF staff calculations.

92. **Foreign banks dominate the Bulgarian banking landscape.** The share of banking assets held by foreign-owned subsidiaries increased from 38 percent in 1999 to 72 percent in 2005 (Figure 4). That said, these foreign investors had revamped the management of the purchased banks, and many experienced a loss in market share in the process.[55] In contrast, locally-owned private banks have been growing faster than the banking sector as a whole since 2002. Their share of total bank lending to the non-government sector increased to 21 percent in 2005, from 15 percent in 1999, while their share of total deposits from non-financial institutions rose to 13.4 percent in 2005, up from 5.4 percent in 1999. As of end 2005, 15 foreign-owned subsidiaries managed 67 percent of bank assets; 12 locally-owned private banks managed 26 percent bank assets; foreign branches managed just over 5 percent of bank assets; and two small state owned banks managed less than 2 percent of bank assets.

[54] The Bulgarian Bank Restructuring Company owned the banks prior to privatization and managed the sales.

[55] For example, Bulbank's share of total banking assets declined from over 25 percent 1999 to under 10 percent in 2003.

Figure 4. Bulgaria: Share of Banking Assets by Bank Ownership Category, 1999−2005
(In percent of total assets)



Source: Bulgarian National Bank.

93. **Ownership of banks in Bulgaria may be classified into four different categories, namely, state-owned, Bulgarian privately-owned, foreign-owned subsidiaries and foreign bank branches.** Foreign-owned subsidiaries and Bulgarian privately-owned private banks compete directly in the same market, but the foreign owned banks have better access to best-practice business and risk management, banking infrastructure and capital, compared to locally-owned banks. Branches of foreign banks and state-owned banks serve specific market segments. Foreign branches have different legal status relative to foreign-owned subsidiaries, and tend to operate more as investment banks, while state-owned banks do not operate fully on a commercial basis. Meanwhile, state-owned banks slated for privatization are temporarily managed by state-owned bank management corporations.

94. **As a whole, the banking sector has been reaping the benefits of earlier restructuring efforts.** Despite solid economic growth during the 1998−2001 period, the flow of bank loans to the economy remained at around 2-4 percent of GDP during this time. However, bank lending started to grow rapidly in 2002, and over the 2003−04 period, credit increased by some 50 percent per year. Indeed, bank lending grew from 6 percent of GDP in 2002 to 12 percent of GDP in 2004.

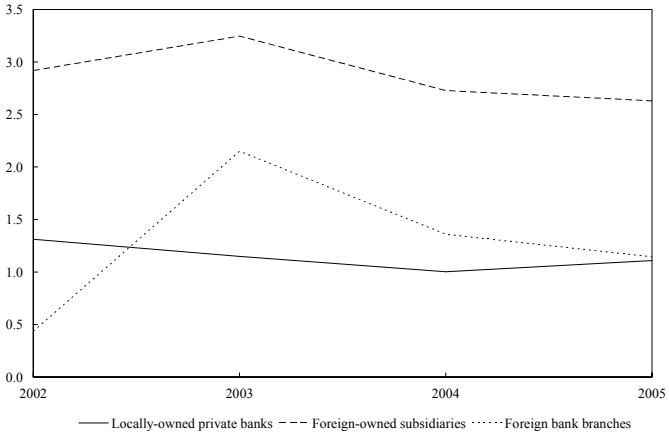
The Credit Boom

95. **Prior to the credit boom, banks had accumulated significant deposits, as confidence within the banking sector slowly recovered.** These deposits were subsequently used to finance lending to non-financial institutions in Bulgaria, at the onset of the "boom" in 2003.[56] This was particularly so for the locally-owned private banks, which are more

[56] Although the strengthening in credit growth started during the course of 2002, we define the credit boom period is as having begun from Q1 2003, as the quality of published financial statements improved with the presentation of more detailed data.

dependent on deposits to finance lending, compared to their foreign-owned counterparts. Indeed, Bulgarian-owned banks have made significant efforts to attract deposits from the public, by offering higher deposit interest rates. Their higher costs of borrowing, as well as their more limited sources of funding has seen Bulgarian-owned banks consistently report lower pre-tax profits as share of assets since the start of the credit boom in 2003 (Figure 5).

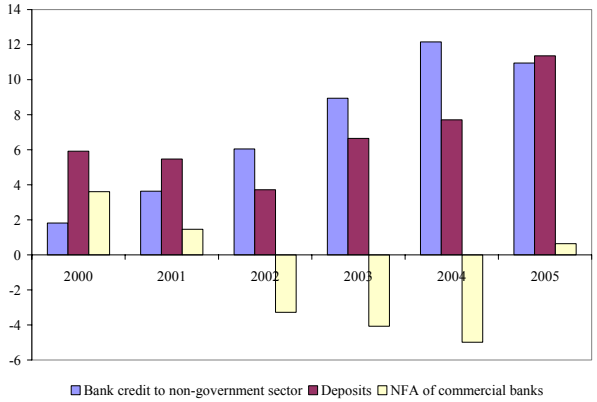
Figure 5. Bulgaria: Average Annual Return on Assets by Bank Category, 1999−2005
(In percent)



Sources: Bulgarian National Bank and IMF staff calculations.

96. **The drawdown of net foreign assets began in 2002** (Figure 6). The stock of commercial banks' net foreign assets dropped from a peak of 15 percent of GDP in September 2000 to become negative (−1 percent) as at end-2004. By the end of 2005, commercial banks were contributing more than a quarter to Bulgaria's private foreign debt.

Figure 6. Bulgaria: Financial Flows as a Share of GDP, 2000−05
(In percent)



Sources: Bulgarian National Bank.

97. **Banks adopted different growth strategies during the credit boom period.** During this time, several trends emerged (Table A.1). The share of bank capital in total assets

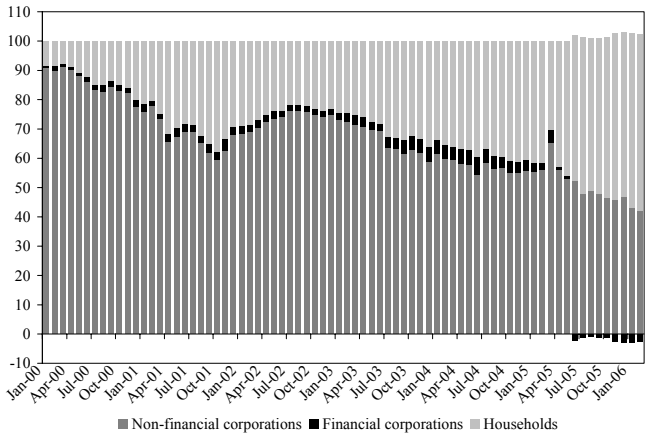
declined much faster for Bulgarian-owned banks than for subsidiaries of foreign banks. Branches of foreign banks and state-owned banks actually increased capital as a share of assets. Not surprisingly, the capital-to-asset ratio declined particularly rapidly for banks which were growing market share, compared to competitors with no growth in market share.

98. **The deposit-to-asset ratio remained relatively stable for locally-owned banks, but declined for the others** (Table A.2). Deposits have become less important for the subsidiaries of foreign banks as these banks have access to alternative sources of financing. Locally-owned private banks are more constrained in accessing alternative sources of financing and hence are forced to expend greater effort to attract deposits locally.

99. **The share of credit to the non-government sector in total assets has increased over time, but varies by bank category** (Table A.3). This is not unusual, given that the rising share of credit to the non-government sector is common during a credit boom period when banks reallocate their assets. The loan-to-asset ratio is somewhat lower for locally-owned private banks than for foreign-owned banks. It suggests that Bulgarian-owned banks may keep more of their assets liquid so as to be able to absorb any shock to the banking system, while foreign owned banks may have less need to do so, given that they be have access to the resources of parent institutions.

100. **Initially, loans to the corporate sector represented the most dynamic growth segment, but the focus has switched to household lending during the credit boom years.** Consumer loans started growing rapidly in 2003, but mortgage loans have become the fastest growing category since 2004. Total credit increased by 32 percent during 2005—household credit grew by almost 60 percent, while credit to the non-financial corporate sector increased by 23 percent (Figure 7). Hence, the share of household credit in the total has expanded rapidly.

Figure 7. Bulgaria: Total Bank Credit Flow to the Non-Government Sector, 2000−2005
(In percent of total credit flows)



Source: Bulgarian National Bank.

101. **Credit quality had remained relatively high up until recently, but appears to have deteriorated** (Table 2). Credit quality indicators tend to lag actual developments, and classified loans tend to increase faster than loan growth during a period of deceleration. However, even adjusted for the slowdown, the recent pickup is a reason for vigilance as classified loans grew by 56 percent, higher than the loan growth rate in recent years. The rise in classified loans has clearly accelerated—during the same period a year ago, classified loans rose by 30 percent while credit grew by 50 percent. On the other hand, it should also be noted that the changes in classification and provisioning rules, introduced in 2004, likely accounted for part of this increase.

Table 2. Bulgaria: Changes in Asset Quality, 1997−2005
(In percent of total loans)

Loan Classification	1997	1998	1999	2000	2001	2002	2003	2004	2005
Standard exposures	83.3	69.0	88.3	91.7	92.3	93.5	92.7	92.9	92.3
Watch exposures	2.7	10.1	3.8	2.9	3.2	2.9	3.1	3.5	4.0
Substandard exposures	2.0	5.6	1.1	1.4	1.1	1.0	1.1	1.5	1.4
Non-performing	12.1	15.4	7.7	3.9	3.4	2.6	3.2	2.0	2.2

Source: Bulgarian National Bank Annual Reports.
Note: Standard exposure is in effect when principal and interest are 30 days or less overdue; watch exposure is in effect when principal and interest are past due 31−60 days,. Substandard exposure is in effect when principal and interest have been past due 61−90 days. Loss or nonperforming exposure is in effect when principal and interest have been past due over 90.

C. The Implementation of Credit Measures

102. **Initially, the BNB welcomed the recovery in bank lending, but then became increasingly concerned with the associated risks of a credit boom.** While the BNB was mainly concerned about the prudential risk, Fund staff highlighted both prudential and macro risks.[57] In the course of 2004, the BNB implemented various measures to withdraw liquidity from the banking system, including raising the reserve requirement, moving government deposits and funds of the Deposit Insurance Fund from commercial banks to the BNB (Table 3). However, the measures were largely ineffective as banks were able to freely borrow abroad, given the open capital account. Individual banks were keen to maintain or increase their market share, and were loathe to take the lead in curbing credit to the private sector.

[57] See IMF (2005).

Table 3. Bulgaria: Impact of Liquidity Reducing Measures, 2004
(In millions of Bulgarian leva)

Measure	Effective Date	Reduction in Liquidity
Transfer of MoF deposits from commercial banks to BNB	June 2004	185
Transfer of deposits of the DIF from commercial banks to BNB	September 2004	30
Long-term deposits over two years maturity and other liabilities (with exception of interbank deposits) subject to 4 percent reserve requirements	July 1, 2004	55
Cash-in-vault ratio for fulfillment of reserve requirements reduced to 50 percent	October 1, 2004	185
Transfer of deposits of the government from commercial banks to BNB	October 1, 2004	50
Increase in the reserve requirement ratio to 8 percent from 4 percent on all liabilities except interbank deposits	December 6, 2004	60
Cash-in-vault ratio for fulfillment of reserve requirements reduced to zero	December 6, 2004	185
Total impact of measures taken during 2004		*750*

Sources: Bulgarian National Bank and IMF staff calculations.

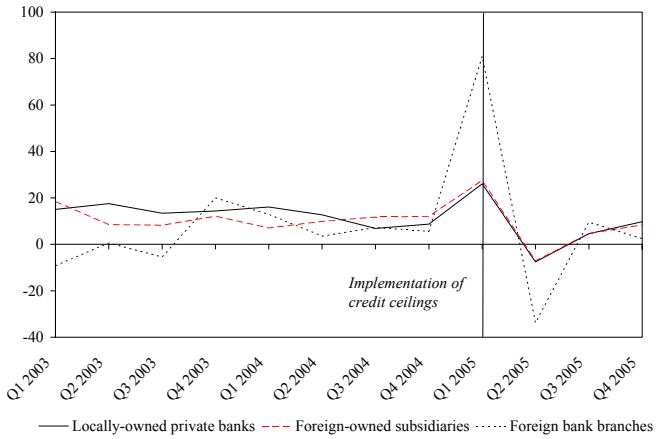
103. **In early-2005, the BNB attempted to reduce the aggregate credit expansion to the non-government sector in a further effort to contain risks to the stability of the financial sector.** The aim was to limit credit growth to 30 percent, from 49 percent in 2004.[58] In February 2005, the BNB announced the implementation of **credit ceilings** to limit the growth of credit to the non-government sector. Banks were allowed to expand credit by 6 percent per quarter, taking end-March 2005 as the base period.[59] Bank credit in excess of this limit would be subject to a marginal reserve requirement by the BNB, of 200 percent of the excess.

104. **The introduction of the credit ceilings in March 2005 created an incentive for all banks to expand their credit portfolio.** The timing of the announcement provided banks with an opportunity to increase credit prior to end-March so that future credit growth would be calculated from a higher base. That said, the extent of banks' reaction differed. For instance, credit flows were much more volatile for the small foreign bank branches that operated as investment banks than for the much larger foreign-owned subsidiaries around this time. Indeed, foreign-owned subsidiaries and locally-owned private banks also grew their credit base, but less as a percentage of outstanding loans. (Figure 8).

[58] Assuming Fund staff GDP projection at the time, this would be equivalent to a credit flow of 10 percent of GDP, down from 12 percent of GDP in 2004.

[59] However, this restriction would not apply to banks where the ratio of credits (including risk-weighted off-balance-sheet items) minus capital to total deposits—other than those by other financial institutions— was below 60 per cent. Eight banks fell into this category as at end-September 2005.

Figure 8. Bulgaria: Quarterly Credit Growth, 2003−05
(In percent)



Sources: Bulgarian National Bank data and IMF staff calculations.

105. **While some of the credit flows could be directly attributable to increased advertising activity by commercial banks, part of the credits were "fictitious."** One strategy was to "recycle" funds—banks extended low interest rate loans to companies that deposited the money with them. Another form "window dressing" was the extension of credit to non-residents by way of taking over loans extended by overseas parent banks. The monetary data show that the flow of credit during the month of March alone was some 3.3 billion leva (7.8 percent of 2005 GDP).

106. **The BNB modified its credit expansion limits on April 21, 2005, taking into account the strategies adopted by banks to increase lending**. It was decreed that quarterly credit growth would be measured by comparing the daily average stock of credit with a base that excluded the artificial end-March credit boom. As banks had already made significant loans during March 2005, it was decided that during Q2 2005, a 10 percent rate of growth would be applied instead of the "artificial" end-March 2005 base. Following these new measures, much of the credit flow recorded during the March quarter was reversed in the following quarter.

107. **The credit measures have been credited with slowing the credit expansion to 32.3 percent (11 percent of GDP) in 2005, from 49 percent (12 percent of GDP) in 2004.** In October 2005, the BNB extended the existing credit expansion limits of 6 percent of the adjusted end-March 2005 base per quarterly, with the objective of further slowing banks' credit expansion to 17.5 percent (7.1 percent of GDP) in 2006. Other additional measures have also been implemented in an attempt to prevent banks from circumventing the credit restraint measures (see Table 4).

Table 4. Additional Credit Measures Taken by the BNB Following the Introduction of Credit Limits in March 2005

	Details of Measures
1	*April 2005:* Regulatory minimum Capital Adequacy Ratios (CARs) must be satisfied while excluding current profits from the capital base of commercial banks.
2.	*April 2005:* 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.
3.	*November 2005:* Quarterly limits on the penalty-free growth of credit are extended beyond March 31, 2006 to end-2006.
4.	*November 2005 and May 2006:* The penalty deposit rate 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 was effective as of May 2006, and phased out as of August the same year.
5	*December 2005 and June 2006:* Banks are required to disclose effective interest rates on their consumer loans; this disclosure will be extended to all household loans up to the amount of BGN 40,000 following the adoption of the new consumer protection law, which is expected by June 30, 2006.
6.	*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.
7.	*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).
8.	*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.
9.	*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.
10.	*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.

Source: Bulgarian National Bank.

108. **Despite the decline in credit flows from the banking sector, total domestic financial flows to the non-government sector has continued to increase modestly (**Table 5). Non-bank financial institutions, notably leasing companies, have expanded rapidly. Companies have also been able to issue bonds in the local market and to borrow from abroad, frequently through foreign branches and foreign-owned subsidiaries in Bulgaria. According to BNB data, corporates were the main drivers of the growth in the leasing market during 2005. In 2006, the non-bank financial sector continued to grow rapidly and banks increasingly moved loans off the balance sheet to locally-registered special purpose vehicles.

Table 5. Bulgaria: Financial Flows, 2004−05
(In percent of GDP)

Type of Flow	2004	2005
Bank credit to non-government sector	12.1	10.9
Non-financial corporations	6.7	5.1
Financial corporations	0.5	-0.3
Households	4.9	6.1
Non-bank domestic financial intermediation	0.7	2.1
Domestic bonds issued by Bulgarian companies	0.2	0.5
Lending by insurance companies*	-	0.1
Leasing (staff assessment)*	0.5	1.5
Total financial flows to the economy	12.8	13.0
Of which: to non-financial sector	12.3	13.3

Source: Bulgarian authorities.
* IMF staff estimates.

D. Determining the Soundness of the Banking Sector

109. **In line with our earlier discussion, we quantify the extent to which bank-specific factors and credit ceilings affect banks' solvency risk in this section.** Specifically, the experience during the credit boom period suggests that: (i) the type of ownership affects banks' credit policies, and their ability to access funding differ; (ii) within each bank category, some—but not all—banks pursue positive growth policies; (iii) the imposition of credit ceilings induced banks to behave differently to circumvent these measures. The results could provide some insights into the risks for the financial sector, and potentially provide quantitative support for future banking policies.

Data and Method

110. **The effects of various structural, behavioral and policy factors on bank soundness is assessed using pooled OLS.**[60] Our study adds to existing work, which examines at the vulnerability of financial institutions and financial systems to a variety of macroeconomic and prudential variables.[61] Maechler, Mitra and Worrell (2005) test for the impact of bank-specific and market risk factors, risk-mitigating (supervisory framework) indicators and macroeconomic variables on banking sector stability in the new EU member states and surrounding countries. In turn, we focus on the impact of bank ownership, credit

[60] Standard errors are adjusted for heteroskedasticity, using the White (1980) correction technique.

[61] Worrell (2004) provides a survey of existing studies.

growth strategy and administrative credit measures on banks' distance-to-default, or insolvency risk.

111. **A commonly used measure of bank soundness is the *z-score*.** This statistic shows a bank's risk of insolvency or distance to default, that is, the probability that losses (negative profits) exceed equity. The generic form of the *z-score* is defined as follows:

$$(1) \qquad z_i \equiv \frac{\hat{\mu}_i + k_i}{\hat{\sigma}_i},$$

where μ is the average return on assets (ROA) for bank i, k is the time average equity to asset ratio and σ is the sample estimate standard deviation of the ROA (which proxies for the volatility in returns). In other words, the z statistic measures the number of standard deviations a return realization would have to fall in order to deplete equity.[62] Thus, a higher *z-score* corresponds to a lower probability of insolvency risk.

112. **In this paper, we calculate the *z-scores* for individual banks at quarterly intervals.** These quarterly *z-scores* would enable an assessment of the changes in the solvency risk of banks over the sample period. The total assets and *z-score* components are derived from quarterly financial statements of individual commercial banks in the Bulgarian banking system.[63] The data are publicly available from the BNB on a quarterly basis. The sample period covers Q4 1999 to Q4 2005.[64]

113. **A visual observation indicates that, in the aggregate, foreign-owned subsidiaries have higher *z-scores* than locally-owned private banks** (Figure 9). This is not surprising given that locally-owned private banks have to pay higher interest rates to attract deposits, compared to foreign-owned subsidiaries which are able to access cheaper overseas funding more easily.[65] Locally-owned private banks also pay particularly high interest rates on inter-bank loans.

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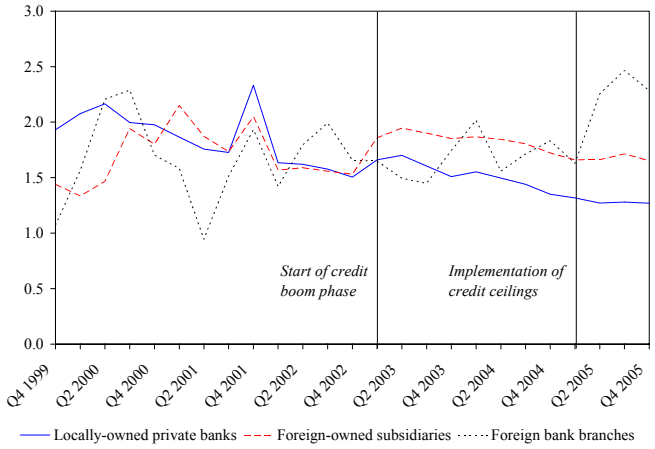
[62] Normality of returns is assumed.

[63] Ideally, market values of equity, assets and liabilities should be used in the calculations. In the absence of reliable market data, however, accounting values are used in this instance. The ROA is calculated as profit before foreign exchange revaluation, extraordinary and tax items. Typically, foreign exchange revaluation should be included in the profit item, as it is usually part of a bank's normal operations. In this case, however, the breakdown of the components was not available prior to Q1 2003.

[64] Existing studies generally apply annual data, while Cihak (2004) uses unpublished data of listed banks in Croatia. The panel regression approach is appropriate in that it reduces the amount of time-series data required, but still provides sufficient data for powerful tests; moreover, it exploits any cross-sectional variation in the data (see, for example, Hakkio, 1984; Frenkel and Rose, 1995)

[65] The sharp rise in the *z-scores* of foreign bank branches in 2005 is attributable to the substantial funding received by one of the 6 branches in this group from its parent.

Figure 9. Bulgaria: Solvency Risk by Bank Ownership Category, 1999−2005
(In *z-scores*)



Source: IMF staff calculations.

114. **We incorporate the total assets variable into our model, to capture the role of bank size in influencing its solvency risk.** Existing studies show that bank size matters in determining the bank soundness. As an example, De Nicolo (2000) finds that banks' solvency risk increases with size (defined as total assets), which he attributes to higher risk-taking by medium-to-large sized banks, which more than offset diversification benefits.

115. **We also include three separate clusters of dummy variables in our model.** These dummies represent aspects of bank behavior and banking policies, discussed previously:

- bank ownership category;[66]
- banks' growth strategy (increased market share versus unchanged or decreased market share); and
- banks' lending behavior during Q1 2005, in the lead-up to the introduction of credit ceilings at the end of the quarter, and thereafter.

We also include seasonal dummies, given the quarterly nature of the data.

[66] The inclusion of state-owned banks, foreign branches and bank management corporations are for completeness; the caveat for the reliability of associated results is their relatively small sample sizes.

116. **The pooled OLS model is defined as follows:**

$$\ln(z_{i,t}) = \beta_{ASSETS} \ln(ASSETS_{i,t}) + \sum_{k=1}^{4} \beta_{SEAS,k} SEAS_{i,t} + \sum_{k=1}^{4} \beta_{OWN,k} OWN_{i,t} + \beta_{GROW,k} GROW_{i,t} + \sum_{k=1}^{2} \beta_{CC,k} CEIL_{i,t}, \quad (3)$$

where $ASSETS_{i,t}$ represents the total assets, denominated in leva, of bank *i* at time *t*; and $SEAS_{i,t}$, $OWN_{i,t}$, $GROW_{i,t}$ and $CEIL_{i,t}$ represent dummy clusters, as defined in Table 6, corresponding to bank *i* at time *t*.[67] The *z-scores* and asset variables are transformed using natural logarithms, to reduce the effects of outliers.[68]

117. **As a next step, we focus our test on the risks for individual bank categories, such that:**

$$\ln(z_{i,t}) = \beta_{ASSETS} \ln(ASSETS_{i,t}) + \sum_{k=1}^{4} \beta_{SEAS,k} SEAS_{i,t} + \beta_{GROW,k} GROW_{i,t} + \sum_{k=1}^{2} \beta_{CC,k} CEIL_{i,t}. \quad (4)$$

We run both models (3) and (4) over the entire sample period of Q4 1999 to Q4 2005; we also test the models over the credit boom period of Q1 2003 to Q4 2005, for robustness.

[67] To enable a clearer interpretation of the resulting dummy coefficients, we assign a dummy variable to all four quarters (*SEAS*), while constraining the intercept term to zero.

[68] The original *z-scores* are all transformed by adding a constant to ensure that they are all positive, prior to the application of the natural logarithm. Interestingly, the majority of negative *z-scores* tend to correspond with the branches of foreign banks. Not surprisingly, non-branch banks with negative *z-scores* do not "survive" over time.

Table 6. Definitions of Dummy Variables

Cluster	Dummies
Seasonality (SEAS)	1. March quarter. 2. June quarter. 3. September quarter. 4. December quarter.
Ownership (OWN)[1]	1. State-owned banks. 2. Locally-owned private banks. 3. Foreign bank branches. 4. Local management corporations.
Growth strategy (GROW)[2]	1. Banks with increased share of loan market.
Credit ceilings (CEIL)[3]	1. Q1 2005, at the end of which credit ceilings were implemented. 2. Quarters subsequent to Q1 2005.

Notes: [1] The control variable for this cluster is foreign subsidiaries.
[2] The control variable for this cluster is the group of banks with decreased share of the loan market, or which show no growth in market share. A bank is defined as having a positive growth strategy if its share of the loan market increased over the four quarters to period *t*.
[3] The control variable for this cluster is the pre-credit ceilings period, up to Q4 2004.

Results

118. **The regression results show clear trends within the different variable clusters being considered.**[69] We test models (3) and (4) for the full sample period of Q4 1999−Q4 2005.[70] The results are presented in Tables 7 and 8.

[69] The results for equation (3) over the period up to Q4 2004 show that the banks increasing their share of the loan market up to that point had experienced a significant increase in solvency, perhaps justifying the implementation of credit ceilings by the authorities in an attempt to improve the soundness of the banking sector.

[70] The pooled OLS results show very high adjusted R-squared coefficients, of greater than 90 percent. This is common for models containing dummy variables designed to capture structural sifts or seasonal factors, as these dummies may play a key role in generating the high R-squared figures (see Kennedy, 1998).

Seasonality

119. **The seasonal dummy coefficients are very significant for all four quarters.** As we would expect, the quarterly nature of the data supports the existence of strong seasonal effects.

Bank Size

120. **Banks' size appears to have little influence on their solvency risk.** In other words, banks' solvency risk within the Bulgarian banking sector appears to be independent of their ability to achieve greater diversification, or economies of scale, of operations. This is in contrast to existing evidence that bank size significantly affects solvency risk.

Type of Bank Ownership

121. **Banks in different categories exhibit significantly different levels of solvency risk**, on average, relative to the foreign-owned subsidiaries (control variable). State-owned banks have significantly higher *z-scores*; foreign branches and locally-owned private banks are significantly more negative, that is, the solvency risk for these institutions is higher. The results are robust when tested over the credit boom period. The results are also consistent with the BNB's stress tests, which show that locally-owned private banks have consistently been more vulnerable to shocks than foreign-owned subsidiaries.

Growth strategy

122. **Banks with positive loan growth strategies have higher solvency risk (lower *z-scores*), on average.** The results are consistent over both, the entire sample period and the credit boom period only. Interesting differences in the relationship between growth strategy and solvency risk show up when the tests are run on an ownership basis, per equation (4). Positive-growth locally-owned private banks and foreign-owned subsidiaries tend to exhibit higher solvency risk (lower *z-scores*) relative to the negative- and no-growth banks in their respective categories (Table 8).

Credit ceilings

123. **Solvency risk for the banking sector as a whole remained statistically unchanged in Q1 2005 and in subsequent quarters, relative to the pre-2005 period.** The observed decline in the z-scores of locally-owned private banks slowed post-ceiling (Figure 9), and was only significantly different from the pre-ceiling period at the 10 percent level. However, these results would be more reliable once more data becomes available, as time progresses and the ability of borrowers to continue to service their loans becomes clearer.

Table 7. Equation (3): Results for Pooled OLS Regression over the Sample Period, Q4 1999 to Q4 2005

Variable	Coefficient	Standard Error	t-statistic	Level of Significance (In percent)
$\ln(ASSETS_{i,t})$	-0.0170	0.0119	-1.4221	--
Seasonality ($SEAS_{i,t}$)				
First quarter	3.5227	0.1608	21.9103	0.1
Second quarter	3.5181	0.1537	22.8910	0.1
Third quarter	3.5180	0.1543	22.8017	0.1
Fourth quarter	3.5146	0.1554	22.6146	0.1
Ownership ($OWN_{i,t}$)				
State-owned banks	0.2949	0.0245	12.0163	0.1
Locally-owned private banks	-0.0681	0.0226	-3.0148	1.0
Foreign bank branches	-0.2552	0.0332	-7.6746	0.1
Local management companies	-0.1231	0.0898	-1.3706	--
Growth strategy ($GROW_{i,t}$)				
Positive-growth	-0.0559	0.0197	-2.8434	1.0
Credit ceilings ($CEIL_{i,t}$)				
March 2005 quarter	-0.0257	0.0530	-0.4841	--
Post March 2005 period	-0.0029	0.0307	-0.0941	--

Source: IMF staff calculations.

Note: The significance of the t-statistics are assessed against the 0.1, 1, 5 and 10 percent levels of significance. A notation of "--" means that the *t*-statistic is not significant at the 10 percent level.

Table 8: Equation (4): Results for Pooled OLS Regression over Sample Period, Q1 2003 to Q4 2005

Variable	Coefficient	Standard Error	*t*-statistic	Level of Significance (In percent)
Locally-Owned Private Banks				
ln($ASSETS_{i,t}$)	-0.0330	0.0115	-2.8741	1.0
Seasonality ($SEAS_{i,t}$)				
First quarter	3.6912	0.1440	25.6290	0.1
Second quarter	3.6596	0.1447	25.2867	0.1
Third quarter	3.6583	0.1447	25.2777	0.1
Fourth quarter	3.6574	0.1444	25.3209	0.1
Growth strategy ($GROW_{i,t}$)				
Positive growth	-0.0714	0.0347	-2.0562	5.0
Credit ceilings ($CEIL_{i,t}$)				
March 2005 quarter	-0.1219	0.0638	-1.9114	10.0
Post March 2005 period	-0.0679	0.0350	-1.9379	10.0
Foreign-Owned Subsidiaries				
ln($ASSETS_{i,t}$)	0.0160	0.0097	1.6480	10.0
Seasonality ($SEAS_{i,t}$)				
First quarter	3.1031	0.1275	24.3430	0.1
Second quarter	3.1073	0.1290	24.0832	0.1
Third quarter	3.1025	0.1288	24.0968	0.1
Fourth quarter	3.0971	0.1280	24.1932	0.1
Growth strategy ($GROW_{i,t}$)				
Positive growth	-0.0287	0.0287	-1.0000	5.0
Credit ceilings ($CEIL_{i,t}$)				
March 2005 quarter	-0.0163	0.0754	-0.2162	--
Post March 2005 period	-0.0040	0.0404	-0.0991	--
Foreign Bank Branches				
ln($ASSETS_{i,t}$)	-0.0717	0.0842	-0.8520	--
Seasonality ($SEAS_{i,t}$)				
First quarter	3.8379	1.0477	3.6630	0.1
Second quarter	3.8774	1.0085	3.8448	0.1
Third quarter	3.9069	1.0135	3.8550	0.1
Fourth quarter	3.8975	1.0175	3.8303	0.1
Growth strategy ($GROW_{i,t}$)				
Positive growth	-0.0734	0.0673	-1.0921	--
Credit ceilings ($CEIL_{i,t}$)				
March 2005 quarter	0.1975	0.1932	1.0221	--
Post March 2005 period	0.1325	0.1091	1.2136	--

Source: IMF staff calculations.

Note: The significance of the t-statistics are assessed against the 0.1, 1, 5 and 10 percent levels of significance. A notation of "--" means that the *t*-statistic is not significant at the 10 percent level.

E. Conclusion

124. **Following a period of recovery from the crisis in 1996−97, the rapid growth of credit in recent years has generated concerns over the stability of the banking sector in Bulgaria.** In this context, this paper analyzes the soundness of banks within the financial sector, using a "distance to default" model to determine the impact of behavioral, structural and policy factors on the solvency risks of banks. Our empirical findings suggest that:

- Banks with positive loan growth strategies tend to face greater solvency risk concerns, as a matter of course. This particular feature holds true irrespective of whether the strategy is implemented in a credit boom environment, or otherwise. This illustrates the legitimate concerns of the BNB at the time the credit measures were introduced.

- Locally-owned private banks tend to exhibit higher solvency risk than their foreign-owned counterparts. This has proved to be a consistent trend since the start of the credit boom phase in 2003.

- The introduction of credit ceilings appears to have slowed the decline in bank soundness. This is especially true for the locally-owned private banks. However, given the limited length of the business cycle and the relative immaturity of the banking sector, the "equilibrium" z-scores for the banking sector remains unclear at this stage.[71]

125. **These findings support the importance of prudential measures, to enhance the soundness of the financial sector.** Market participants are reportedly resorting to a myriad of (legal) circumvention techniques around the credit ceilings. For instance, banks are said to assign loans to their foreign parents, packaging loans through off-balance-sheet special purpose vehicles. Also of some concern is that the credit measures may have catalyzed the shift in credit from the banking sector into less well-supervised segments of the financial sector, with domestic non-bank financing growing rapidly. As such, prudential measures help to ensure that risk-taking by banks are "correctly" priced and appropriately managed.

126. **The banking system is well-capitalized and profitable**, but inherent risks exist in an environment of rapid credit growth. While it could be argued that foreign bank branches and subsidiaries may be able to rely on the support of their parents in the event of financial sector turbulence, this is not the case for locally-owned private banks. Furthermore, although the systemic risk posed by the rapidly growing non-bank financial sector remains small at this stage, the issue of **reputation risk** remains. In other words, the failure of any financial institution could result in contagion across the sector, especially given the increasingly close links between banks and their non-bank financial counterparts in Bulgaria.

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[71] The authorities specifically note that the decline in the z-score levels are not of particular concern at this stage, given that the banking sector as a whole is largely considered to have been over-capitalized.

Table A.1. Bulgaria: Bank Capital as a Share of Total Assets, 1999−2005
(In percent)

	1999	2000	2001	2002	2003	2004	2005
State-owned banks	9.2	8.4	7.9	12.3	17.1	13.0	14.1
Fast-growing	83.5	70.5	54.1	41.8	47.2	36.0	39.5
Slow-growing	8.4	7.6	6.9	8.0	11.1	8.4	8.9
Locally-owned private banks	16.3	17.0	12.2	9.6	9.6	8.3	7.9
Fast-growing	15.8	17.5	11.4	8.9	8.8	7.7	7.5
Slow-growing	16.9	16.0	13.9	11.8	12.4	10.4	8.9
Foreign-owned subsidiaries	11.0	12.2	11.0	10.2	15.0	12.6	11.8
Fast-growing	10.0	14.1	12.4	11.1	15.6	11.6	11.0
Slow-growing	11.0	10.5	10.0	9.3	14.5	13.5	12.5
Foreign bank branches	0.9	3.3	2.7	3.6	3.3	3.7	4.9
Fast-growing	0.0	1.7	1.4	2.7	1.7	2.4	2.4
Slow-growing	1.2	2.8	3.2	3.7	3.8	4.1	7.3
Bank consolidation companies	11.4	5.9	7.5	6.5			
All banks	10.8	11.2	9.9	9.2	13.2	11.0	10.5
Fast-growing	11.9	25.9	11.8	10.5	13.0	10.1	9.4
Slow-growing	10.0	9.5	8.8	8.2	13.3	11.9	11.6

Sources: Bulgarian National Bank and IMF staff calculations.

Table A.2. Deposits by Non-Financial Institutions and Other Clients, 1999−2005
(In percent of total assets)

	1999	2000	2001	2002	2003	2004	2005
State-owned banks	83.2	83.5	83.3	63.4	62.4	63.0	61.4
Fast-growing	0.3	5.2	7.8	23.2	1.9	3.7	2.6
Slow-growing	84.2	84.4	84.8	69.2	74.7	74.8	73.3
Locally-owned private banks	54.5	46.7	57.7	60.2	65.7	65.5	64.6
Fast-growing	55.2	42.6	59.3	63.7	68.0	66.1	63.9
Slow-growing	53.6	53.8	54.2	50.5	58.3	63.3	66.7
Foreign-owned subsidiaries	66.1	67.3	73.3	70.1	73.7	68.8	62.2
Fast-growing	67.7	67.1	73.3	71.9	70.7	65.3	57.6
Slow-growing	66.0	67.5	73.3	68.2	75.8	72.0	65.8
Foreign bank branches	45.2	33.4	45.3	53.5	43.3	58.8	49.0
Fast-growing	44.8	29.6	41.6	35.8	25.5	26.3	24.0
Slow-growing	45.4	34.7	46.5	55.7	49.4	68.7	72.2
Bank consolidation companies	67.7	78.8	82.5	84.6			
All banks	66.5	65.2	70.8	69.0	69.9	67.1	62.1
Fast-growing	64.5	71.4	67.4	68.4	67.9	63.8	58.0
Slow-growing	68.0	67.5	71.9	69.5	71.9	70.7	66.5

Sources: Bulgarian National Bank and IMF staff calculations.

Table A.3. Bulgaria: Credit to the Non-Financial Non-Government Sector as a Share of Total Assets, 1999−2005
(In percent)

	1999	2000	2001	2002	2003	2004	2005
State-owned banks	46.0	43.8	44.7	23.6	40.9	46.6	45.1
Fast-growing	4.5	19.2	43.8	34.2	60.0	74.0	80.0
Slow-growing	46.5	44.1	44.7	22.0	37.0	41.1	37.9
Locally-owned private banks	38.4	41.3	37.5	40.3	49.1	51.7	47.5
Fast-growing	34.5	41.3	37.7	41.3	49.9	53.1	48.1
Slow-growing	43.7	41.2	37.0	37.6	46.5	47.1	45.8
Foreign-owned subsidiaries	28.5	23.6	27.0	39.3	55.5	58.4	59.4
Fast-growing	44.2	16.3	18.1	33.1	50.4	48.4	52.7
Slow-growing	27.3	29.8	33.9	45.6	59.2	67.4	64.7
Foreign bank branches	53.1	54.8	60.8	64.6	64.0	42.9	59.1
Fast-growing	62.3	73.8	69.3	77.0	81.2	86.1	74.4
Slow-growing	49.8	47.5	57.9	63.1	58.2	29.8	44.9
Bank consolidation companies	15.4	29.3	29.7	45.4			
All banks	29.2	31.2	33.9	41.4	54.1	55.4	56.1
Fast-growing	19.8	35.8	26.2	36.4	51.1	51.4	52.2
Slow-growing	36.2	35.9	39.4	45.5	56.9	59.8	60.3

Sources: Bulgarian National Bank and IMF staff calculations.

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V. BULGARIA—BNB STRESS TESTS OF THE BANKING SECTOR[72]

A. Introduction

127. **"Stress testing" refers to the use of various techniques to estimate potential vulnerabilities of financial systems to exceptional, but plausible, events.** Stress tests of the banking sector require the specification of risks, usually, credit, interest rate and exchange rate risks. More complicated stress tests could include shocks to liquidity, equity prices, property prices and non-interest income, among other variables. Stress tests estimate the impact of a single shock (sensitivity analysis) or multiple shocks (scenario analysis).[73]

128. **Stress tests tend to have wide coverage of the banking sector, and tend to comprise simple sensitivity analyses.** According to Cihak and Hermanek (2006), they usually cover either all, or almost all, banks in terms of market share.[74] Other segments of the financial sector are rarely covered. Further, stress tests tend to be very rudimentary, as many central banks are still only in the early part of their work in this area.[75] Credit risk is covered in almost all stress tests; interest rate risk is also covered in most of them (Table 1). Exchange rate risk is covered in some, but in many cases, is analyzed only in terms of open positions, and not as an explicit stress test. Some stress tests include scenario analysis, based on historical (a significant event experienced in the past) or hypothetical (a plausible event that has not yet occurred) scenarios. Only a few utilize econometric models, and even then, the models tend to be relatively simple.

129. **In Bulgaria, stress testing of the banking system is performed by the Banking Supervision Department (BSD) of the Bulgarian National Bank (BNB).** Presently, individual banks in Bulgaria are not required to perform their own stress testing. That said, some big banks do so as part of their risk management exercise, and these results are made available to the BSD's on-site examiners.[76] Banks which choose to apply the internal ratings-

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[72] Prepared by Li Lian Ong, with input from Martin Cihak (both MFD) and the Banking Supervision Department of the Bulgarian National Bank.

[73] In 2004, the Committee on the Global Financial System (CGFS) initiated an exercise on stress tests undertaken by banks and securities firms. The objectives of the exercise were to determine the main risk scenarios for financial institutions, and to explore how stress testing practices have evolved over time (BIS, 2005).

[74] Cihak and Hermanek (2006) provide a cross-country comparison of stress tests presented by central banks in their recent financial stability reports (FSRs). They review 36 recent FSRs, focusing on the features of the respective stress tests (see Table A.1). Virtually all the stress tests presented in the respective FSRs are based on bank-by-bank data. Countries in the survey include Australia, Austria, Belgium, Brazil, Canada, Chile, Denmark, Euro Area, Estonia, Finland, France, Germany, Hungary, Hong Kong, Indonesia, Iceland, Indonesia, Ireland, Italy, Israel, Latvia, Luxembourg, Netherlands, New Zealand, Norway, Philippines, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

[75] Blaschke, Jones, Majnoni and Martinez Peria (1988) discuss the stress-testing analyses conducted for FSAPs.

[76] That said, not many banks actually do their own stress-testing, and even then, the models are not sophisticated. Some banks also apply value-at-risk (VaR) models, which are also available to on-site supervisors.

based (IRB) models under the Basel II capital requirements (likely to be implemented in 2007) must present their stress tests, as well as internal models for supervisory approval.[77]

130. **The BNB's stress testing framework is consistent with existing models at other central banks.** It includes key shocks, such as to credit quality, interest rates and exchange rates, and takes into account shocks to derivatives positions (Table 1). Scenario analysis is also included in the BNB tests. Further, the BNB takes a very conservative approach to its stress tests. By including crisis-like scenarios in the stress tests—based on experiences during the 1996-97 financial crisis—the authorities are aware of the extreme case outcomes for the banking sector at all times.

Table 1. Comparison of Stress Tests in Selected European Financial Stability Reports with the BNB Model

	Percent of FSRs	BNB
Stress tests included	55	Yes
Stress tests follow those in a recent FSAP	50	Yes
Credit risk stress test included	55	Yes
Interest rate risk stress tests included	45	Yes
Exchange rate risk stress tests included	33	Yes
Other risks included	33	Yes *
Scenario analysis included	38	Yes
Contagion analysis included	10	No
Credit risk based on a macro-model or other detailed model	8	No

Source: Cihak and Hermanek (2005) and Bulgarian National Bank.
* Credit substitutes and derivatives.

131. **The BNB also complements its stress tests with an Early Warning System (EWS).**[78] In this exercise, more than 100 ratios are calculated—well above the FSAP recommended set of core and encouraged financial stability indicators (FSIs); these ratios are analyzed on a time-series and cross-sectional basis, and are also used in their CAEL/CAMELS ratings.[79]

[77] According to the BNB, it would strongly discourage the use of IRB models, with the advent of Basel II, since most banks in the system are unlikely to have sufficient historical data to credibly implement these models just yet.

[78] EWS could, to some extent, be used as an input into stress tests (Cihak, 2004).

[79] CAEL refers to: **C**apital adequacy, **A**sset quality, **E**arnings and **L**iquidity.
CAMEL refers to: **C**apital adequacy, **A**sset quality, **M**anagement, **E**arnings and **L**iquidity.

132. **The BNB also performs regular on-site inspections**, the frequency of which is based on the CAMELS ratings of individual banks, or if the off-site analyses discovers issues of concern. Full-scope audits are performed by on-site teams, which include information technology (IT) expertise.

133. **The objective of this paper is to provide an overview of the BNB's stress testing of the banking sector.** Section B presents the stress test framework. This is followed by a discussion of the aggregate results for the banking sector in section C, along with the potential implications of test outcomes. Section D concludes with a few recommendations for development of the BNB's stress testing framework moving forward.

B. The Stress Test Framework

134. **The BNB uses a "bottom up" approach in its stress test of the banking sector**, using detailed data which are submitted by banks on a regular basis. The effects of shocks on individual banks are initially estimated on a bank-by-bank basis, then on groups of banks and finally, on the banking system as a whole.[80]

135. **The BNB's model involves introducing shocks to selected variables in the profit and loss account and the balance sheet.** Three types of risks are evaluated in the stress tests, namely: (i) credit risk, which is considered the most important risk for the local banking system; (ii) interest rate risk; and (iii) exchange rate risk. Each risk variable is initially "shocked" separately.

136. **The BSD also tests separate scenarios incorporating all three risk variables.** Three scenarios are assumed, each representing a progressive deterioration in the environment. The shock levels for exchange rates and interest rates remain the same in each scenario, while shocks to credit quality, derivatives and credit substitutes are intensified. A summary of the individual shocks and the three scenarios are presented in Table 2.

137. **The BNB's current stress tests are based on very conservative assumptions of extreme outcomes.** For the 2001−02 period, the stress tests are based on assumptions agreed between the BNB and the IMF during the 2002 FSAP. Since 2003, the BNB has tested sensitivities and scenarios based on its own research into the 1996−97 financial crisis. The tests assume a recurrence of the most severe movements in the exchange and interest rates, and the strongest deterioration in credit quality ever recorded for Bulgaria. For example, the assumption of a 60 percent exchange rate shock is based on the experience during the 19966−97 crisis when the exchange rate declined by the same magnitude against other currencies in the space of *one day*. Similarly, the most severe interest rate shock in history was a 192 percentage points rise in local interest rates in one day during that crisis. The design and selection of the parameters are based on research into different stress test models by a working group at the BNB.

[80] See Table 3 for bank groupings.

Credit Risk

138. **The test for credit risk examines the impact of a shock to credit quality on banks' capital adequacy.**[81] In calculating the capital adequacy ratio following a credit shock, losses are deducted from the capital component (numerator) and from the risk-weighted assets component (RWA). Given that the capital amount is smaller, the impact of any loss has a greater impact on capital relative to RWA. Specific weights—based on historical evidence from the 1996−97 financial crisis—are applied to different categories of loans.[82] The exposure in each loan category is weighted to determine the amount that would be subjected to a credit shock, which is defined by different migration percentages of standard loans. The stress tests also take into account the currency structure of the weighted loans portfolio, by applying multipliers to the currency exposures (including in euro), on a currency-by-currency basis.

139. **For the standard loans, the BNB assumes a shock of a 10 percent migration to loss.** Three scenarios with different migration percentages are also estimated: 1, 3 and 5 percent. The one percent shock scenario is considered the most realistic, but the others are estimated to be conservative. Each percentage of migration is equal to the amount of provisions additionally expensed to the Profit and Loss Account of a bank. If the net profit/loss is a loss, it is deducted from Own Funds. The rate of migration from each classification to loss was raised in Q2 2004, specifically, for watch (30 percent to 45 percent) and substandard (50 percent to 75 percent) loans.

[81] It should be noted that any deterioration in loan quality leads to a change in RWA. RWA are affected when testing for changes in credit risk; RWA remains unchanged when interest rate and exchange rate risks are tested.

[82] For example, loans to budget (mostly loans to municipalities, amounting to 0.2 percent of total loans), commercial real estate and construction loans, other commercial loans, agricultural loans, consumer loans, residential mortgage loans to individuals, among others.

Table 2. Bulgaria: Stress Test Variables and Shock Scenarios
(Shocks in percentage terms)

Risk Factor	Variable	Weighting	Scenario		
			1	2	3
Credit	Loans to budget	0.1			
	Commercial real estate loans	1.1			
	Other commercial loans	1.0			
	Agricultural loans	1.0			
	Consumer loans	0.8			
	Morgage loans	0.5			
	Other commercial loans	1.2			
	Standard loans migrating to loss		10	Shock multiplier of 1.5	Shock multiplier of 2
	Watch loans migrating to loss		45	Shock multiplier of 1.5	Shock multiplier of 2
	Substandard loans migrating to loss		75	Shock multiplier of 1.5	Shock multiplier of 2
	Doubtful loans migrating to loss		100	--	--
	Non-performing loans migrating to loss		100	--	--
Exchange rate	Net open position		-60	-60	-60
Interest rate	Mismatch in BGN		+192	+192	+192
	Mismatch in EUR		+2	+2	+2
	Mismatch in USD		+2	+2	+2
	Mismatch in other currencies		+5	+5	+5
Other	Credit substitutes migrating to loss		10	Shock multiplier of 2	Shock multiplier of 5
	Derivatives for trading migrating to loss		100	Shock multiplier of 2	Shock multiplier of 5

Source: BNB.

Interest Rate Risk

140. **A gap analysis or "mismatch model," based on the difference between the flow of interest earned by a bank on its assets and the flow of interest paid on its liabilities, is used to determine interest rate risk.** Since January 2003, the Off-Site Supervision Directorate has obtained detailed data on the interest rate sensitive assets and liabilities of banks—both on- and off-balance sheet—by maturity "buckets" as well as by individual currencies. Selected shocks are applied on six-month cumulative maturity mismatches in the leva (192 percentage points), the euro (2 percentage points) and the U.S. dollar (2 percentage points), and to a group of all other currencies (5 percentage points). The interest rate shocks for both the euro and the U.S, dollar, of 2 percentage points each. The BNB considers the magnitude of this shock to be significant in the context of the monetary policies adopted by the European Central Bank and the U.S. Federal Reserve, where policy adjustments are usually 25 basis points at a time.[83]

Exchange Rate Risk

141. **The exchange rate shock represents the biggest one-day depreciation in the leva in history.** The 60% shock is applied to the net open foreign exchange position of each bank. With the euro excluded from the calculation of the net open position, it virtually consists of the U.S. dollar open position since the amounts in other currencies (the British pound, the Japanese yen, etc.) are negligible.

Other Risks

142. **Both credit substitutes and derivatives are also tested for credit risk.** They are also subject to foreign exchange shock, if they are part of the net open currency position, while interest sensitive derivatives are subject to interest rate shocks as well. Exposures to credit substitutes and derivatives are assigned higher shock multipliers, in Scenarios 2 and 3.[84] The objective is to appropriately compensate for the underdeveloped markets for such products.

143. **The BNB estimates market risk in banks' balance sheets to be insignificant.** The share of the market risk equivalent in total risk-weighted assets (RWA) is only 3.8 percent. As such, this risk is omitted from the stress test model.

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[83] The stress-testing model agreed between the BNB and the 2002 FSAP mission incorporated a 50 basis points change in the leva interest rate only.

[84] Derivatives instruments include foreign exchange, interest rate, equity, commodity and other derivatives contracts. Shocks are applied to the positive (marked-to-market) values of these instruments.

C. Stress Test Results

Analysis

144. **Stress test results are provided by the BNB for the 2003−05 period.** The results are presented for Group 1 and Group 2 banks, and for banks grouped according to their foreign and domestic ownership (Table 3). The results for 2001 and 2002 are not presented, since they are not comparable given the different assumptions used during that period, and the information available at the time.

145. **The results show a stronger deterioration in the CAR of banks in 2004 and 2005, compared to 2003, for the same levels of credit shock.** Further, the deterioration in 2004 is slightly worse than for 2005. In both cases, the CAR of the banking sector would have dropped well below the required minimum 12 percent.

146. **Separate exchange rate and interest rate shocks appear to have little effect on the CAR of banks.** The results are robust for all three years. In each case, shocks to either variable have resulted in changes in CAR of up to 2 percent, and all groups have remained well above the required 12 percent.

147. **The scenario tests suggest that the capital in the banking sector would have been severely affected if a crisis of extreme magnitude had occurred in 2004 or 2005.** The outcome for Scenario 1 suggests that some capital injection into the banking system would have been necessary. In both Scenarios 2 and 3, the CAR would have dropped well below zero.

148. **The shocks consistently have a more negative effect on domestic banks relative to foreign banks.** In each shock scenario, the impact on the CAR of domestic banks is substantially greater compared to their foreign counterparts, suggesting that domestic banks are more vulnerable, in aggregate, notwithstanding the fact that some domestic banks within the group are sound.

149. **Group 1 banks have become increasingly more vulnerable to shocks than the Group 2 ones.** This outcome became more distinct for 2005, compared to a relatively mixed outcome in 2004.

Table 3. Bulgaria: Summary of BNB Stress Test Results by Group and Ownership, 2000-2005

Scenario	Capital Adequacy Ratio (CAR)	End-2003					End-2004					End-2005				
		Total	Group 1	Group 2	Foreign	Domestic	Total	Group 1	Group 2	Foreign	Domestic	Total	Group 1	Group 2	Foreign	Domestic
Credit shock*	Before shock	22	22	23	23	18	16	15	19	17	15	15	14	18	15	15
	After shock	16	17	16	18	11	5	4	7	6	1	5	4	7	5	3
	Change	-6	-5	-7	-5	-7	-11	-11	-12	-11	-14	-10	-10	-11	-10	-12
Exchange rate shock	Before shock	22	22	23	23	18	16	15	19	17	15	15	14	18	15	15
	After shock	21	21	22	22	18	16	15	19	16	14	15	15	18	15	15
	Change	-1	-1	-1	-1	0	0	0	0	-1	-1	0	1	0	0	0
Interest rate shock	Before shock	22	22	23	23	18	16	15	19	17	15	15	14	18	15	15
	After shock	23	23	23	25	19	16	16	19	17	14	14	14	16	15	13
	Change	1	1	0	2	1	0	1	0	0	-1	-1	0	-2	0	-2
Scenario 1*	Before shock	22	22	23	23	18	16	15	19	17	15	15	14	18	15	15
	After shock	17	17	15	18	11	4	4	6	6	0	4	4	6	5	-2
	Change	-5	-5	-8	-5	-7	-12	-11	-13	-11	-15	-11	-10	-12	-10	-17
Scenario 2*	Before shock	22	22	23	23	18	16	15	19	17	15	15	14	18	15	15
	After shock	13	15	11	16	7	-3	-4	-3	-1	-17	-4	-5	-1	-1	-17
	Change	-9	-7	-12	-7	-11	-19	-19	-22	-18	-32	-19	-19	-19	-16	-32
Scenario 3*	Before shock	22	22	23	23	18	16	15	19	17	15	15	14	18	15	15
	After shock	8	11	2	11	-5	-23	-22	-27	-17	-41	-20	-21	-17	-16	-35
	Change	-14	-11	-21	-12	-23	-39	-37	-46	-34	-56	-35	-35	-35	-31	-50

Source: Bulgarian National Bank.

* Assumes 10 percent migration of standard loans to loss.

Notes: 1. Group 1 comprises the 10 largest banks; Group 2 is represented by 18 medium-sized and small banks.

2. Highlighted results denote outcomes with CARs below the minimum requirement of 12 percent.

Potential Outcomes

150. **The capital injection required to return banks to the minimum capital requirement of 12 percent has been calculated by the BNB.** Specifically, estimates for the different magnitudes of credit shock are calculated for the aggregate banking sector, and then isolated to banks whose CAR would drop below 12 percent (Table 4). The BNB's tests show that the most extreme credit shock outcome (10 percent migration of standard loans to loss) could cost up to 4.2 percent of GDP in terms of capital injections into problem banks. However, it should be noted that this estimate **does not** take into account the fact that banks have had to exclude current profits from their CAR calculations since April 2005.[85] This amounted to **an additional buffer** of BGN 600 (1.5 percent of GDP) being excluded from CAR as at end-2005.

151. **The required capital injection for scenarios 1, 2 and 3 are not presented.** This is because the necessary amounts are not likely to be meaningful, given the extremity of the combined shocks/crises.[86] That said, the authorities have made such estimates internally, and are fully cognizant of the amounts needed to recapitalize individual banks and the banking system as a whole, in the event that one of the extreme scenarios does occur.

Table 4. Bulgaria: Estimates of Capital Injection Required After a Credit Shock, 2005
(In percent of GDP)

Migration of Standard Loans to Loss (In percent)	Capital Injection (In percent of GDP)	
	Aggregate banking sector	CAR below 12 percent
10	3.1	4.2
5	1.4	2.1
3	0.7	1.4

Source: BNB.

152. **In the event of one of the more extreme scenarios, the BNB would be unable to act as a lender of last resort, given the existing currency board arrangement.** According to the Law on Banks, article 21 paragraph 2:

> *"The Central Bank shall in all cases revoke the license issued to a bank due to insolvency, where: (1) the bank fails to pay its obligations due for more than 7 days; or (2) the total of its liabilities exceeds the total of its assets"*

[85] This is one of the measures introduced by the BNB to restrain credit growth.

[86] The recapitalization amount for Scenario 1 appears to be somewhat similar to the credit shock of a 10 percent migration of standard loans to loss.

Any decision subsequently taken by the government with regard to potential capital injections for banks would likely be made on a case-by-case basis.

D. Recommendations

153. **The BNB's "bottom up" stress tests of the banking sector include both sensitivity and scenario analyses.** The model involves introducing certain shocks to selected variables in the profit and loss account and the balance sheet. These shock factors are consistent with those used by other central banks in that key risks—namely, credit, interest rate and exchange rate—are taken into account. In each test, very stringent assumptions are adopted, based on the extreme shocks to the banking system which have occurred in Bulgaria's history. As a result, the BNB's stress tests are very conservative as they essentially test for potentially severe crisis situations.

154. **The BNB has indicated that it is constantly trying to enhance its modeling of the financial sector.** This is in line with the practices by central banks in advanced economies, such as the U.K. and Norway.[87] As a first step, the authorities plan to calibrate the stress test assumptions as applicable, and as more historical data become available.

155. **Several enhancements would improve the robustness of the tests:**

- **Testing for liquidity risk.** This would provide a clear understanding of the potential stresses on the inter-bank market, given the limited capacity of the central bank to intervene under a currency board arrangement. From an individual bank perspective, it would be useful to determine the extent of a bank's capacity to sustain a liquidity drain.[88] As a subsequent step, the bank run could be combined with a sudden stop in capital inflows. The latter scenario is particularly pertinent, given banks' dependence on overseas funding.[89]

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[87] The Bank of England's stress-test model has changed significantly since the 2002 FSAP (see Bunn, Cunningham and Drehmann, 2005; Goodhart and Zicchino, 2005). The new model is built from micro foundations, with core (theoretical) and non-core (set of equations which fit data better and pick up correlations) components, whereas the old model was more data driven. Norges Bank (2004) indicates that the central bank plans to develop its existing SEBRA model (see Eklund, Larsen and Bernhardsen, 2001), which predicts bankruptcy probabilities based on annual accounts figures for all Norwegian limited companies, by incorporating some market indicators.

[88] According to the BNB, it currently excludes explicit testing of liquidity risk in the banking sector, given that liquidity in the system is very high. According to BNB estimates, the banking system would be able to cover up to around 30 percent of deposits at present, in the event of a bank run.

[89] According to the BNB, its stress tests take this potential scenario into account by excluding overseas funding from the calculation of relevant ratios.

- **Testing for other different scenarios.** These could be based on the observed historical volatility of the variables being shocked (for example, two standard deviations of exchange rate fluctuations), in addition to using the 1996-97 crisis as a benchmark.

- **Testing for the market risk of a range of instruments** (local and foreign bonds and equities). This will become more important, as they increasingly account for a bigger share of banks' investment and trading portfolios.

156. **The stress tests could also include broader scenarios of financial sector contagion,** as more reliable data become available over time with the maturing of the economy and the development of the banking sector. For instance, they could incorporate contagion from bank runs, failure of a systemically important bank, or the impact of macro-economic shocks. Possible enhancements include:

- **Incorporating macro-economic shocks.**[90] One example is an adverse supply-side shock, such as a sharp increase in oil prices, which could impact domestic and foreign demand. This would likely result in the deterioration in the credit quality of corporates and, subsequently, households. The analysis could examine the direct impact on individual banks and through the inter-bank relationships.

- **Testing for contagion within the banking sector.** Assume the failure of a systemically important bank within the system (*e.g.*, from the second scenario above). The analysis could examine its impact on other banks, and the channels through which it occurs.

[90] See Jones, Hilbers and Slack (2004).

Table A.1. Examples of Stress Tests in Recent European Financial Stability Reports

Country	*Coverage*	*Main conclusion*	*Credit shock*	*Interest rate shock*	*Exchange rate shock*	*Other shock*	*Scenario*	*Indirect FX risk*	*Contagion*
Austria 1)	All banks	ST supported positive assessment of banks' risk-bearing capacity.	Incr. in loan loss provisions to loans of 30 percent.	Upward shifts in EUR, USD, CHF curves; downward shift in YEN curve.	Appreciation/depreciation of EUR by 10 percent. Worst case estimation.	Equity price risk	Yes	Yes	Yes
Czech Republic	All banks	System basically stable. Recent shift from credit risk to interest rate risk.	Increase in NPLs of 30 percent or in the NPL/TL ratio of 3 percentage points.	Increase of 1 pct point/2pct points. Combination of weighted gap and duration methods.	Domestic currency depreciates by 15 or 20 percent.		Yes, two scenarios	Yes	Yes
Denmark	6 Nordic groups and 46 (out of 99) Danish institutions.	The banking institutions have increased their resilience considerably.	Increase in losses on loans to non-public sector of 1 or 2.25 percentage points.	Increase in interest rates of 1 or 3 pct points. Decrease in the average lending rate of 1 pct point.		Decrease in stock prices of 30%. Decrease in net fee and commission income of 40%.	Yes, several combinations of the shocks listed here.	No	No
Germany	A sample of banks; insurance companies	No risk to financial stability at present.	Credit risk estimated by an econometric model.	Twists of the yield curve at the short end, parallel shifts across all maturities, and fluctuations in the medium-term range.	EUR appreciates or depreciates by 15%.	30% decline in stock prices in all markets.	Yes, "oil price scenario," "int. rate scenario." Credit risk scenario using an econo-metric model.	No	No
Hungary 2)	All active banks	Results indicate an improvement in the sectors' resilience.	4 shocks to NPLs (e.g., doubling, increase of 2 std. dev.)	Domestic rates: +500 bps, -300 bps Foreign: +/-200 bps	+/- 40%	No	No	No	No
Latvia	All banks	Vulnerability to overall credit risk decreased in 2004; household lending the biggest risk.	Increase in NPL ratio of 3 percentage points. A number of sectoral shocks, assuming that a percentage of loans to some sectors become NPLs.	No explicit stress test included; the report notes that most loans are floating rate.	USD depreciating by 10% against EUR.		No	No	No

Country	*Coverage*	*Main conclusion*	*Credit shock*	*Interest rate shock*	*Exchange rate shock*	*Other shock*	*Scenario*	*Indirect FX risk*	*Contagion*
Poland	All banks	The system exhibits high stability.	Three shocks: (i) satisfactory and special mention loans migrate to doubtful; (ii) substandard and doubtful migrate to loss; and (iii) bankruptcy of three largest borrowers.	Not a stress test, but an analysis of gains/losses on interest-sensitive instruments, and the maturity of debt securities.	Not a stress test, but an analysis of VaR and open positions.	Equity price risk and property market risks analyzed (but without a stress test)		No	No
Nether-lands 1)	Major fin. institutions (84% banks, 54% insurance, 50% pension)	Banks are sufficiently shock-resistant.	+/-50 bps change in credit spreads (larger for insurance and pensions)	+/-100 bps parallel move; 50 bps flattening/steepening of yield curves (larger for insurance and pension)	+/-10% change in the exchange rate of EUR vs. other currencies	+/-15% change in all relevant stock indices; 25% increase in market volatilities	Yes, "domestic crisis of confidence," "dollar crisis"	No	Yes
Norway	All banks / seven largest conglome-rates.	Short-term stability outlook satisfactory. However, increased vulnerability of household sector.	Decline in economic growth, increased unemployment.	Interest rates unchanged, but interest burden of real sector increased appreciably.		A fall in property prices reduces mortgage values, causing a rise in loss given default.	Yes, all tied to credit risk.	No	No
Sweden	Four major banks	The major banks have improved their potential for coping with shocks.	Failure of the largest counterparty, assumed recovery ratio of 25 percent.	Increase in interest rates of 1 pct point, and 30 percent fall in the stock market.			No	No	Yes

Source: Cihak and Hermanek (2005), based on central banks' recent financial stability reports. Austrian National Bank: Financial Stability Report 7, June 2004. Danmarks Nationalbank: Financial Stability 2003. Deutsche Bundesbank: Report on the Stability of the German Financial System, Monthly Report, October 2004. De Nederlandsche Bank: Overview of Financial Stability in the Netherlands, December 2004, Issue No. 1. Hungarian National Bank: Report on Financial Stability, June 2003. National Bank of Poland: Financial Stability Review, First Half of 2004. Norges Bank: Financial Stability, 2004:1, June 2004. Sveriges Riksbank: Financial Stability Report, 2004:2.

1) The latest FSR contained the stress tests carried out by (or in collaboration with) an FSAP mission.

2) Based on end-2003 FSR. The subsequent two FSRs present only the "stress CAR," which shows a bank's financial position in a situation where all NPLs are written off.

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Table A1. Bulgaria: National Accounts 2001–05
(NCEA, based on NACE, Rev. 1)

	2001	2002	2003	2004	2005 [1/]
	(Gross value added)				
	(In current prices, in millions of leva)				
Agriculture and forestry	3,533	3,459	3,498	3,590	3,341
Agriculture, forestry and hunting	3,520	3,445	3,485	3,576	3,327
Fishing	13	14	14	14	14
Industry	7,804	8,289	8,972	9,909	10,969
Mining and quarrying	403	412	440	530	566
Manufacturing	4,606	4,966	5,516	5,989	6,750
Electricity, gas and water supply	1,591	1,634	1,652	1,722	1,626
Construction	1,203	1,276	1,364	1,668	2,026
Services	15,019	16,777	17,757	19,671	21,713
Trade, repair of motor vehicles, personal and household appliances	1,937	2,105	2,186	2,506	2,950
Transport	1,953	2,131	2,195	2,365	2,634
Communications	1,433	1,819	1,971	2,205	2,318
Financial intermediation and insurance	831	986	1,147	1,382	1,682
Other services [2/]	8,865	9,737	10,258	11,213	12,130
Total of economic activity groupings	26,356	28,526	30,227	33,169	36,023
Adjustments	3,354	3,809	4,319	5,106	5,925
GDP at market prices	29,709	32,335	34,547	38,275	41,948
Household consumption	20,642	22,238	23,759	26,098	29,375
Government consumption	5,177	5,832	6,555	7,125	7,789
Gross fixed capital formation	5,415	5,909	6,694	7,969	9,971
Changes in inventories	726	497	816	1,006	1,774
Net exports	-2,250	-2,140	-3,279	-3,923	-6,943
Exports of goods and services	16,510	17,180	18,500	22,192	25,506
Imports of goods and services	18,760	19,321	21,779	26,115	32,449
Statistical discrepancy	0	0	0	0	-18
	(Growth rate in prices of previous year, in percent)				
GDP at market prices	4.1	4.9	4.5	5.7	5.5
Agriculture and forestry	0.3	5.5	-1.0	3.0	-8.6
Industry	4.1	4.6	6.8	5.8	7.3
Services	4.7	5.1	4.0	5.7	6.6
Household consumption	5.2	3.5	6.4	5.5	7.6
Government consumption	1.4	4.1	7.6	3.8	3.8
Gross fixed capital formation	23.3	8.5	13.9	13.5	19.0
	(Percent change)				
Implicit GDP deflator	6.7	3.8	2.3	4.8	3.8
	(In percent of GDP)				
Agriculture and forestry	11.9	10.7	10.1	9.4	8.0
Industry	26.3	25.6	26.0	25.9	26.1
Services	50.6	51.9	51.4	51.4	51.8
Total of economic activity groupings	88.8	88.2	87.5	86.7	85.9
Adjustments	11.2	11.8	12.5	13.3	14.1
GDP at market prices	100.0	100.0	100.0	100.0	100.0
Final consumption	86.9	86.8	87.7	86.8	88.6
Individual consumption	77.4	76.8	77.7	76.6	78.8
Households expenditures	69.0	68.4	68.3	67.7	69.6
NPISHs expenditures	0.4	0.4	0.5	0.5	0.4
Government expenditures	8.0	8.0	8.9	8.4	8.8
Collective consumption	9.5	10.0	10.0	10.2	9.8
Gross fixed capital formation	18.3	18.3	19.3	20.8	23.8
Changes in inventories	2.4	1.5	2.4	2.6	4.2
Net exports	-7.6	-6.6	-9.4	-10.2	-16.6
Exports of goods and services	55.6	53.1	53.6	58.0	60.8
Imports of goods and services	63.2	59.7	63.0	68.2	77.4
Statistical discrepancy	0.0	0.0	0.0	0.0	0.0

Source: National Statistical Institute.

1/ Data for 2005 are preliminary.

2/ Incl. hotels and restaurants; real estate, renting and business activities, health and education; public administration and defense.

Table A2. Bulgaria: Gross Value Added in the Industrial Sector, 2001–05
(NCEA, based on NACE, Rev. 1)

	2001	2002	2003	2004	2005 [1/]
	(In current prices, in millions of leva)				
Total	7,804	8,289	8,972	9,909	10,969
Mining and quarrying	403	412	440	530	566
Manufacturing	4,606	4,966	5,516	5,989	6,750
Electricity, gas and water supply	1,591	1,634	1,652	1,722	1,626
Construction	1,203	1,276	1,364	1,668	2,026
Public	2,255	2,163	2,006	1,911	1,661
Mining and quarrying	219	206	227	212	192
Manufacturing	415	311	269	236	242
Electricity, gas and water supply	1,511	1,539	1,425	1,378	1,151
Construction	110	108	84	85	75
Private	5,548	6,126	6,966	7,998	9,308
Mining and quarrying	184	206	213	317	374
Manufacturing	4,191	4,656	5,247	5,753	6,508
Electricity, gas and water supply	80	96	227	345	475
Construction	1,093	1,168	1,279	1,583	1,950
	(Growth rate in prices of previous year, in percent)				
Total	4.1	4.6	6.8	5.8	7.3
Mining and quarrying	-2.1	0.8	6.2	6.8	0.4
Manufacturing	4.3	6.5	11.4	3.7	10.3
Electricity, gas and water supply	5.2	1.0	-5.5	5.0	-7.9
Construction	3.9	3.3	4.6	14.9	14.1
Public	-7.0	-5.4	-13.2	-5.6	-16.6
Mining and quarrying	-10.5	-9.2	6.4	-11.5	-13.3
Manufacturing	-18.7	-26.6	-14.7	-16.9	0.7
Electricity, gas and water supply	0.9	0.9	-14.5	-2.6	-20.0
Construction	-35.0	-4.1	-28.4	-4.6	-18.0
Private	9.4	8.7	13.8	9.1	13.0
Mining and quarrying	9.6	12.5	6.1	26.3	9.6
Manufacturing	7.4	9.8	13.2	4.8	10.7
Electricity, gas and water supply	308.4	2.9	137.7	52.7	40.4
Construction	10.7	4.0	7.6	16.1	15.8
	(In percent of gross value added)				
Share of economy	29.6	29.1	29.7	29.9	30.4
Total	29.6	29.1	29.7	29.9	30.4
Mining and quarrying	1.5	1.5	1.5	1.6	1.6
Manufacturing	17.5	17.4	18.2	18.1	18.7
Electricity, gas and water supply	6.0	5.7	5.5	5.2	4.5
Construction	4.6	4.5	4.5	5.0	5.6
Share of public sector					
in total industry	28.9	26.1	22.4	19.3	15.1
Mining and quarrying	54.3	49.9	51.6	40.1	33.9
Manufacturing	9.0	6.3	4.9	3.9	3.6
Electricity, gas and water supply	95.0	94.1	86.2	80.0	70.8
Construction	9.2	8.5	6.2	5.1	3.7
Share of private sector					
in total industry	71.1	73.9	77.6	80.7	84.9
Mining and quarrying	45.7	50.1	48.4	59.9	66.1
Manufacturing	91.0	93.7	95.1	96.1	96.4
Electricity, gas and water supply	5.0	5.9	13.8	20.0	29.2
Construction	90.8	91.5	93.8	94.9	96.3

Source: National Statistical Institute.
1/ Data for 2005 are preliminary.

Table A3. Bulgaria: Gross Value Added in the Services Sector, 2001–05

	2001	2002	2003	2004	2005 1/
	(In current prices, in millions of leva)				
Total	15,019	16,777	17,757	19,671	21,713
Trade 2/	1,937	2,105	2,186	2,506	2,950
Transport	1,953	2,131	2,195	2,365	2,634
Communications	1,433	1,819	1,971	2,205	2,318
Other 3/	9,696	10,722	11,405	12,594	13,811
Public	5,224	5,513	5,882	5,602	5,706
Trade 2/	26	23	17	17	15
Transport	668	703	692	723	716
Communications	710	725	761	93	90
Other 3/	3,820	4,061	4,412	4,769	4,886
Private	9,795	11,265	11,875	14,069	16,006
Trade 2/	1,911	2,082	2,169	2,489	2,935
Transport	1,285	1,429	1,503	1,641	1,918
Communications	723	1,094	1,210	2,113	2,229
Other 3/	5,876	6,661	6,993	7,825	8,925
	(Growth rate in prices of previous year, in percent)				
Total	4.7	5.1	4.0	5.7	6.6
Trade 2/	8.9	5.0	2.1	15.3	15.0
Transport	3.8	6.8	2.2	4.0	7.1
Communications	21.4	18.2	8.6	4.1	7.7
Other 3/	2.0	2.7	3.9	4.5	4.6
Public	-0.1	-1.9	2.1	-11.0	-1.3
Trade 2/	2.7	-13.4	-25.0	3.3	-10.9
Transport	0.2	0.3	-1.7	4.9	-7.1
Communications	-0.9	-4.7	3.9	-85.6	-0.8
Other 3/	0.0	-1.7	2.7	-0.7	-0.4
Private	7.4	8.7	4.9	14.0	9.7
Trade 2/	8.9	5.2	2.4	15.4	15.2
Transport	5.8	10.1	4.2	3.6	13.4
Communications	57.4	40.8	11.7	60.6	8.1
Other 3/	3.4	5.6	4.7	7.8	7.6
Gross value added	3.9	5.0	4.2	5.4	5.1
	(In percent of gross value added)				
Share of economy					
Total services	57.0	58.8	58.7	59.3	60.3
Trade 2/	7.4	7.4	7.2	7.6	8.2
Transport	7.4	7.5	7.3	7.1	7.3
Communications	5.4	6.4	6.5	6.6	6.4
Other 3/	36.8	37.5	37.7	38.0	38.4
Share of public sector	34.8	32.9	33.1	28.5	26.3
Trade 2/	1.4	1.1	0.8	0.7	0.5
Transport	34.2	33.0	31.5	30.6	27.2
Communications	49.5	39.9	38.6	4.2	3.9
Other 3/	39.4	37.9	38.7	37.9	35.4
Share of private sector	65.2	67.1	66.9	71.5	73.7
Trade 2/	98.6	98.9	99.2	99.3	99.5
Transport	65.8	67.0	68.5	69.4	72.8
Communications	50.5	60.1	61.4	95.8	96.1
Other 3/	60.6	62.1	61.3	62.1	64.6

Source: National Statistical Institute

1/ Data for 2005 are preliminary.

2/ Including repairs of motor vehicles and personal and household appliances.

3/ Includes: housing and municipal services; business services; science; education, culture, and art; health and social security, sports, recreation and tourism; finance, credit and insurance; government; and NPISNs.

Table A4. Bulgaria: Gross Output of Services by Branches, 2001–05
(NCEA, based on NACE, Rev.1)

	2001	2002	2003	2004	2005 [1/]	2001	2002	2003	2004	2005 [1/]
	(Growth rate in prices of previous year, in percent)					(In current prices, in millions of leva)				
Gross value added - Total services	4.7	5.0	4.0	5.7	6.6	15,019	16,777	17,757	19,671	21,713
Trade, repair of motor vehicles, personal and household appliances	8.9	5.0	2.1	15.3	15.0	1,937	2,105	2,186	2,506	2,950
Hotels and restaurants	3.4	2.8	7.4	8.1	19.6	535	563	625	713	899
Transport and communications	10.7	11.6	5.2	4.1	7.4	3,386	3,950	4,166	4,570	4,952
Transport	3.8	6.8	2.2	4.0	7.1	1,953	2,131	2,195	2,365	2,634
Communications	21.4	18.2	8.6	4.1	7.7	1,433	1,819	1,971	2,205	2,318
Financial intermediation and insurance	11.6	11.5	14.0	13.0	14.3	831	986	1,147	1,382	1,682
Real estate, renting and business activities	0.5	0.1	2.8	3.5	1.3	4,391	4,751	4,844	5,189	5,568
of which										
Imputed rent of owner occupied dwellings	-5.3	-1.6	0.7	-4.2	-1.8	3,142	3,298	3,335	3,257	3,462
Public administration and defense, compulsory social security	2.7	3.5	4.0	-0.2	4.1	1,754	1,958	2,132	2,351	2,457
Education	-1.8	-0.7	-1.7	3.4	2.4	1,073	1,127	1,194	1,336	1,404
Health, social work and veterinary activities	0.8	11.2	2.2	0.7	-7.9	661	858	960	998	1,031
Other community, social and personal service activities of NGOs	7.6	3.9	5.7	21.0	20.0	450	480	503	626	771
Intermediate consumption	7.0	6.7	8.8	12.8	10.5	12,062	13,359	14,818	17,455	20,553
Gross output	5.7	5.7	6.1	9.0	8.4	27,081	30,136	32,575	37,125	42,265

Source: National Statistical Institute.
1/ Data for 2005 are preliminary.

Table A5. Bulgaria: Total and Private Agricultural Production, 2001–05 1/

	2001	2002	2003	2004	2005 2/
	(In current prices, in millions of leva)				
Total agriculture					
Gross output	8,073	7,761	7,721	8,062	7,857
Crops	2,974	3,158	3,342	3,605	3,394
Livestock	2,945	2,283	2,057	2,191	2,271
Services and other	648	606	631	682	723
Secondary activities of households	1,505	1,713	1,691	1,584	1,469
Intermediate consumption	4,599	4,370	4,306	4,566	4,621
Gross value added	3,473	3,391	3,415	3,496	3,237
Private agriculture					
Gross output	7,938	7,631	7,597	7,933	7,857
Intermediate consumption	4,497	4,273	4,216	4,470	4,621
Gross value added	3,441	3,357	3,381	3,463	3,237
	(Growth rate in prices of previous year, in percent)				
Total agriculture					
Gross output	-0.1	4.2	-1.0	3.1	-5.2
Crops	7.6	15.5	-1.9	11.9	-8.7
Livestock	-9.9	-7.8	-3.8	-1.7	-1.1
Services and other	5.5	-6.6	4.7	3.3	3.1
Secondary activities of households	2.7	10.1	2.4	-8.7	-6.5
Intermediate consumption	-0.5	3.2	-0.6	3.3	-2.3
Gross value added	0.5	5.5	-1.5	2.8	-8.9
Private agriculture					
Gross output	-0.6	4.2	-0.9	3.1	-5.2
Intermediate consumption	-1.1	3.2	-0.4	3.3	-2.3
Gross value added	0.2	5.5	-1.5	2.8	-8.9

Source: National Statistical Institute.

1/ According to National Classification of Economic Activities.

2/ Data for 2005 are preliminary.

Table A6. Bulgaria: National Income Accounts, 2001–05

	2001	2002	2003	2004	2005 [1/]	2001	2002	2003	2004	2005 [1/]
	(In current prices, in millions of leva)					(In percent)				
GDP	29,709	32,335	34,547	38,275	41,948	100.0	100.0	100.0	100.0	100.0
Gross value added at basic prices	26,356	28,526	30,227	33,169	36,023	88.7	88.2	87.5	86.7	85.9
Compensation of employees	10,381	11,034	12,020	12,972	14,454	34.9	34.1	34.8	33.9	34.5
Wages and salaries	7,785	8,315	9,037	9,766	10,941	26.2	25.7	26.2	25.5	26.1
Social contributions	2,596	2,719	2,983	3,206	3,513	8.7	8.4	8.6	8.4	8.4
Net taxes on production [2/]	-365	-435	-533	-480	-539	-1.2	-1.3	-1.5	-1.3	-1.3
Other taxes on production	138	173	183	194	138	0.5	0.5	0.5	0.5	1.0
Subsidies	503	608	716	674	677	1.7	1.9	2.1	1.8	1.6
Gross operating surplus	16,340	17,927	18,741	20,677	22,108	55.0	55.4	54.2	54.0	52.7
Consumption of fixed capital	3,365	4,060	4,627	5,145	…	11.3	12.6	13.4	13.4	…
Net operating surplus	9,616	10,695	10,235	11,186	…	32.4	33.1	29.6	29.2	…
Mixed income, net	3,359	3,172	3,879	4,346	…	11.3	9.8	11.2	11.4	…
Adjustments	3,354	3,809	4,319	5,106	5,925	11.3	11.8	12.5	13.3	14.1
Import duties	195	188	231	292	372	0.7	0.6	0.7	0.8	0.9
FIZIM	-539	-596	-753	-1,043	-1,360	-1.8	-1.8	-2.2	-2.7	-3.2
VAT	2,641	3,073	3,407	3,867	4,728	8.9	9.5	9.9	10.1	11.3
Net taxes on products [3/]	1,057	1,143	1,434	1,989	2,185	3.6	3.5	4.2	5.2	5.2
Of which:										
Private sector										
GVA at basic prices	18,823	20,813	22,291	25,602	…	71.4	73.0	73.7	77.2	…
Compensation of employees	4,740	5,322	6,011	7,042	…	45.7	48.2	50.0	54.3	…
Wages and salaries	3,655	4,123	4,544	5,372	…	46.9	49.6	50.3	55.0	…
Social contributions	1,085	1,199	1,467	1,670	…	41.8	44.1	49.2	52.1	…
Net taxes on production [2/]	21	-23	-58	-53	…	-5.7	5.2	10.9	11.0	…
Other taxes on production	59	88	91	114	…	42.7	50.7	49.9	58.4	…
Subsidies	38	110	149	166	…	7.6	18.1	20.8	24.6	…
Gross operating surplus	14,062	15,513	16,338	18,612	…	86.1	86.5	87.2	90.0	…
Consumption of fixed capital	1,934	2,446	3,001	3,607	…	57.5	60.2	64.9	70.1	…
Net operating surplus	8,769	9,895	9,458	10,658	…	91.2	92.5	92.4	95.3	…
Mixed income, net	3,359	3,172	3,879	4,346	…	100.0	100.0	100.0	100.0	…
Gross value added at basic prices	100	100	100	100	…	100.0	100.0	100.0	100.0	…
Compensation of employees	75	74	76	78	…	25.2	25.6	27.0	27.5	…
Wages and salaries	55	54	57	58	…	19.4	19.8	20.4	21.0	…
Social contributions	20	20	19	20	…	5.8	5.8	6.6	6.5	…
Net taxes on production [2/]	-5	-5	-6	-6	…	0.1	-0.1	-0.3	-0.2	…
Other taxes on production	1	1	1	1	…	0.3	0.4	0.4	0.4	…
Subsidies	6	6	7	7	…	0.2	0.5	0.7	0.6	…
Gross operating surplus	30	31	30	27	…	74.7	74.5	73.3	72.7	…
Consumption of fixed capital	19	21	20	20	…	10.3	11.8	13.5	14.1	…
Net operating surplus	11	10	10	7	…	46.6	47.5	42.4	41.6	…
Mixed income, net	...	…	…	…	…	17.8	15.2	17.4	17.0	…

Source: National Statistical Institute.

1/ Data for 2005 are preliminary.

2/ Net taxes on production include: subsidies (-), other taxes on production (+)-- other subsidies on production (-)

3/ Net taxes on products include: - taxes on products (+)--- subsidies on products (-)

Table A7. Bulgaria: Acquisition of Tangible Fixed Assets, 2001–05

	2001	2002	2003	2004	2005 [1/]
	(In current prices, in millions of leva)				
Total	6,694	7,221	8,503	9,950	10,395
Agriculture	146	205	268	376	309
Mining and quarrying	103	115	120	157	288
Manufacturing	1,549	1,921	2,004	2,086	2,187
Construction	419	410	491	763	862
Electricity, gas, and water supply	528	503	1,024	1,054	919
Transport	1,740	1,379	1,468	1,759	2,162
Trade	880	1,151	1,323	1,486	1,305
Hotels and restaurants	337	439	509	704	656
Financial intermediation	160	130	139	174	297
Real estate, renting, and business activities	368	451	523	717	662
Public administration; compulsory social security	166	129	178	234	256
Housing, municipal, and consumer services	…	…	…	...	...
Of which:					
Health/sport/leisure	109	104	136	137	177
Education	44	63	64	69	125
Other community, social, and personal service activities	145	221	256	234	190
	(In percent of GDP)				
Total	22.5	22.3	24.6	26.0	24.8
Agriculture	0.5	0.6	0.8	1.0	0.7
Mining and quarrying	0.3	0.4	0.3	0.4	0.7
Manufacturing	5.2	5.9	5.8	5.4	5.2
Construction	1.4	1.3	1.4	2.0	2.1
Electricity, gas, and water supply	1.8	1.6	3.0	2.8	2.2
Transport	5.9	4.3	4.2	4.6	5.2
Trade	3.0	3.6	3.8	3.9	3.1
Hotels and restaurants	1.1	1.4	1.5	1.8	1.6
Financial intermediation	0.5	0.4	0.4	0.5	0.7
Real estate, renting, and business activities	1.2	1.4	1.5	1.9	1.6
Public administration; compulsory	0.6	0.4	0.5	0.6	0.6
social security	0.0	0.0	0.0	0.0	0.0
Housing, municipal, and	0.0	0.0	0.0	0.0	0.0
consumer services	….				
Of which:					
Health/sport/leisure	0.4	0.3	0.4	0.4	0.4
Education	0.1	0.2	0.2	0.2	0.3
Other community, social, and personal service activities	0.5	0.7	0.7	0.6	0.5
Memorandum item:					
GDP in millions of leva	29,709	32,335	34,547	38,275	41,948

Source: National Statistical Institute.
1/ Data for 2005 are preliminary.

Table A8. Bulgaria: Average Monthly Earnings in the Public and Private Sector, 2001–05

	2001	2002	2003	2004	2005 1/	2000	2001	2002	2003	2004	2005 1/
	(In leva)					(Percent change, deflated by CPI)					
Total	240	258	273	292	320	1.2	-0.4	1.4	3.7	0.8	4.0
Agriculture, hunting and forestry & fishing	185	192	202	216	240	-0.5	-4.4	-2.1	2.9	0.6	5.8
Mining and quarrying of energy-producing materials	410	439	451	503	540	12.6	-0.9	1.1	0.4	5.2	2.2
Mining and quarrying, except energy producing materials	360	387	402	463	504	6.4	-2.2	1.5	1.5	8.7	3.6
Manufacture of food products, beverages and tobacco	226	232	245	262	298	-1.9	-4.0	-2.9	2.9	0.8	8.5
Manufacture of textiles and textile products	155	164	172	187	206	0.7	-1.5	-0.3	3.0	2.3	4.6
Manufacture of leather and leather products	146	157	160	170	183	-2.4	-4.1	1.5	-0.2	-0.2	2.4
Manufacture of wood and wood products	160	172	189	199	232	1.2	-3.0	2.0	7.3	-0.9	10.9
Manufacture of pulp, paper and paper products; publishing and printing	259	273	286	293	321	2.3	3.4	-0.4	2.5	-3.4	4.3
Manufacture of coke, refined petroleum products and nuclear fuel	580	618	666	751	898	1.8	0.0	0.6	5.3	6.3	13.8
Manufacture of chemicals, chemical products and man-made fibres	333	350	376	394	437	0.3	-2.4	-0.6	4.8	-1.2	5.7
Manufacture of rubber and plastic products	200	215	216	227	244	-6.6	-5.1	1.4	-2.0	-0.7	2.4
Manufacture of other non-metallic mineral products	258	281	303	317	354	-2.9	-2.7	2.9	5.3	-1.4	6.3
Manufacture of basic metals and fabricated metal products	301	320	326	353	380	0.4	-4.3	0.6	-0.6	2.0	2.5
Manufacture of machinery and equipment n.e.c.	248	268	285	310	339	2.2	-0.4	1.9	4.0	2.5	4.0
Manufacture of electrical and optical equipment	246	253	272	286	307	3.8	3.7	-3.0	5.0	-1.0	2.4
Manufacture of transport equipment	265	281	303	342	408	-1.6	-3.7	0.2	5.1	6.5	13.6
Manufacturing n.e.c.	159	167	181	195	228	-1.3	-2.7	-0.7	5.7	1.5	11.2
Electricity, gas and water supply	444	464	511	541	565	-8.0	0.5	-1.2	7.6	-0.4	-0.5
Construction	213	215	232	245	270	-8.9	-3.1	-4.5	5.6	-0.6	5.0
Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	167	180	201	217	226	-5.1	-1.1	1.8	9.0	1.9	-1.1
Hotels and restaurants	150	155	162	172	206	-13.5	0.0	-2.6	2.5	-0.2	13.9
Transport, storage and communication	294	310	342	355	404	-1.3	0.9	-0.3	8.0	-2.4	8.5
Financial intermediation	510	553	626	680	758	11.0	7.6	2.6	10.5	2.5	6.0
Real estate, renting and business activities	228	240	249	271	300	7.0	0.1	-0.7	1.3	2.7	5.3
Public administration and defense; compulsory social security	336	395	432	470	477	13.5	2.8	11.0	7.0	2.6	-3.4
Education	232	269	297	322	339	12.9	1.3	9.6	8.0	1.9	0.5
Health and social work	218	255	297	330	371	10.4	6.9	10.6	13.9	4.6	7.1
Other community, social and personal service activities	209	227	194	206	244	15.4	4.3	2.6	-16.6	0.2	12.9

Source: National Statistical Institute.
1/ Data for 2005 are preliminary.

Table A9. Bulgaria: Labor Force, Employment, and Unemployment, 2001–05

	2001	2002	2003	2004	2005
			(In thousands)		
Population [1/]	7,891	7,846	7,801	7,761	7,719
Total labor force [2/]	3,363	3,332	3,283	3,322	3,314
Activity rate (in percent) [3/]	50	49	49	50	50
Employment [2/]	2,699	2,740	2,834	2,922	2,980
Public	1,080	1,016	982	909	865
Private	1,607	1,713	1,844	2,006	2,109
Unknown	12	11	9	7	7
Share of total employment (in percent)					
Public	40	37	35	31	29
Private	60	63	65	69	71
Unknown	1	0	0	0	0
Unemployed persons [2/]	664	592	449	400	334
Unemployment rate (in percent) [2/]	20	18	14	12	10
Registered unemployed [1/]	662	603	501	451	397
Official unemployment rate (in percent) [1/, 4/]	18	16	14	12	11
Unemployment beneficiaries [1/]	161	116	87	82	79
In percent of registered unemployed	24	19	17	18	20
In percent of labor force (LFS)	5	4	3	3	2
			(Percent change)		
Population	-3.2	-0.6	-0.6	-0.5	-0.5
Labor force	0.0	-0.9	-1.5	1.2	-0.2
Employment	-3.4	1.5	3.4	3.1	2.0
Of which : Private	8.5	6.6	7.6	8.8	5.1

Sources: National Statistical Institute; and National Employment Agency.
1/ End of period.
2/ Average annual data from the labor force survey; data for 2001 and 2002 are calculated as simple average of the data from the surveys carried out in Mach, June, September and December.
3/ Labor force as a proportion of the population aged 15 and over.
4/ For 2001 - recalculated with 2001 Population Census data.

Table A10. Bulgaria: Price Indices of Food, Non-Food, and Services, 2001–05 (1995=100)

		Food Price Index	Monthly Change (In percent)	Non-Food Price Index	Monthly Change (In percent)	Services Price Index	Monthly Change (In percent)
2001	January	3,253	0.7	3,186	0.0	5,792	1.2
	February	3,244	-0.3	3,211	0.8	5,843	0.9
	March	3,237	-0.2	3,213	0.1	5,872	0.5
	April	3,211	-0.8	3,242	0.9	5,853	-0.3
	May	3,194	-0.5	3,257	0.4	5,892	0.7
	June	3,184	-0.3	3,250	-0.2	5,919	0.5
	July	3,150	-1.1	3,278	0.9	5,926	0.1
	August	3,127	-0.7	3,345	2.0	5,937	0.2
	September	3,196	2.2	3,378	1.0	5,945	0.1
	October	3,222	0.8	3,366	-0.4	6,292	5.8
	November	3,236	0.4	3,363	-0.1	6,303	0.2
	December	3,317	2.5	3,363	0.0	6,189	-1.8
2002	January	3,415	2.9	3,450	2.6	6,346	2.5
	February	3,448	1.0	3,587	4.0	6,377	0.5
	March	3,454	0.2	3,669	2.3	6,394	0.3
	April	3,425	-0.8	3,694	0.7	6,412	0.3
	May	3,266	-4.6	3,681	-0.3	6,436	0.4
	June	3,146	-3.7	3,670	-0.3	6,434	0.0
	July	3,033	-3.6	3,665	-0.1	6,852	6.5
	August	2,995	-1.3	3,642	-0.6	6,854	0.0
	September	3,040	1.5	3,661	0.5	6,859	0.1
	October	3,096	1.8	3,683	0.6	6,873	0.2
	November	3,090	-0.2	3,685	0.1	6,925	0.8
	December	3,176	2.8	3,712	0.7	6,896	-0.4
2003	January	3,193	0.5	3,733	0.6	6,953	0.8
	February	3,207	0.4	3,720	-0.3	6,960	0.1
	March	3,227	0.6	3,731	0.3	6,970	0.1
	April	3,255	0.8	3,704	-0.7	7,004	0.5
	May	3,229	-0.8	3,658	-1.2	7,011	0.1
	June	3,061	-5.2	3,635	-0.6	7,036	0.4
	July	3,005	-1.8	3,638	0.1	7,424	5.5
	August	3,046	1.4	3,652	0.4	7,455	0.4
	September	3,113	2.2	3,667	0.4	7,453	0.0
	October	3,155	1.4	3,686	0.5	7,457	0.1
	November	3,304	4.7	3,691	0.1	7,438	-0.2
	December	3,441	4.2	3,702	0.3	7,437	0.0
2004	January	3,486	1.3	3,792	2.4	7,467	0.4
	February	3,498	0.3	3,826	0.9	7,452	-0.2
	March	3,488	-0.3	3,825	0.0	7,463	0.1
	April	3,503	0.4	3,826	0.0	7,491	0.4
	May	3,452	-1.5	3,849	0.6	7,612	1.6
	June	3,306	-4.2	3,829	-0.5	7,624	0.2
	July	3,306	0.0	3,835	0.2	7,933	4.0
	August	3,249	-1.7	3,852	0.4	7,946	0.2
	September	3,324	2.3	3,862	0.3	7,947	0.0
	October	3,308	-0.5	3,896	0.9	7,971	0.3
	November	3,358	1.5	3,886	-0.3	8,003	0.4
	December	3,473	3.4	3,876	-0.2	8,009	0.1
2005	January	3,516	1.2	3,884	0.2	8,063	0.7
	February	3,550	1.0	3,923	1.0	8,110	0.6
	March	3,563	0.4	3,941	0.4	8,121	0.1
	April	3,610	1.3	3,960	0.5	8,239	1.5
	May	3,554	-1.5	3,970	0.2	8,243	0.1
	June	3,414	-3.9	3,990	0.5	8,250	0.1
	July	3,391	-0.7	4,008	0.5	8,314	0.8
	August	3,415	0.7	4,042	0.9	8,326	0.1
	September	3,507	2.7	4,093	1.3	8,328	0.0
	October	3,588	2.3	4,113	0.5	8,360	0.4
	November	3,644	1.6	4,110	-0.1	8,477	1.4
	December	3,707	1.7	4,123	0.3	8,491	0.2

Source: National Statistical Institute.

Table A11. Bulgaria: Consumer and Producer Price Indices, 2001–05

	1995=100			2000=100		
	Consumer Price Index	Monthly Change in Percent	12-month Change in Percent	Producer Price Index [1/]	Monthly Change in Percent	12-month Change in Percent
2001						
January	3,657	0.6	9.3	102	-1.5	8.9
February	3,670	0.3	8.5	103	1.5	9.9
March	3,671	0.1	8.9	104	0.4	7.3
April	3,665	-0.2	9.8	104	-0.1	7.7
May	3,667	0.1	9.7	104	0.4	5.7
June	3,664	-0.1	9.4	104	0.1	6.0
July	3,657	-0.2	8.5	104	-0.2	3.6
August	3,668	0.3	5.7	104	0.3	3.6
September	3,715	1.3	4.7	105	0.9	0.0
October	3,779	1.7	5.2	104	-1.1	-2.5
November	3,787	0.2	4.6	104	-0.6	-2.0
December	3,810	0.6	4.8	102	-1.8	-1.8
2002						
January	3,913	2.7	7.0	102	0.3	0.0
February	3,977	1.6	8.4	103	1.2	-0.3
March	4,008	0.8	9.2	104	0.9	0.2
April	4,003	-0.1	9.2	105	1.0	1.4
May	3,920	-2.1	6.9	104	-0.6	0.3
June	3,854	-1.7	5.2	104	-0.5	-0.3
July	3,858	0.1	5.5	104	0.4	0.3
August	3,832	-0.7	4.5	105	0.7	0.8
September	3,863	0.8	4.0	106	1.2	1.1
October	3,901	1.0	3.2	107	0.5	2.8
November	3,907	0.2	3.2	107	-0.5	2.9
December	3,956	1.2	3.8	108	1.4	6.3
2003						
January	3,981	0.6	1.7	110	1.8	7.8
February	3,986	0.1	0.2	111	1.3	8.0
March	4,001	0.4	-0.2	112	1.0	8.1
April	4,013	0.3	0.2	108	-3.7	3.1
May	3,988	-0.6	1.7	107	-1.1	2.6
June	3,902	-2.2	1.2	108	1.2	4.3
July	3,937	0.9	2.0	109	0.4	4.3
August	3,966	0.8	3.5	110	0.8	4.3
September	4,004	0.9	3.6	110	0.7	3.8
October	4,031	0.7	3.3	111	0.9	4.1
November	4,106	1.8	5.1	112	0.2	4.8
December	4,179	1.8	5.6	113	0.9	4.3
2004						
January	4,236	1.4	6.4	113	0.7	3.2
February	4,251	0.3	6.6	113	-0.8	1.0
March	4,248	-0.1	6.2	114	1.4	1.4
April	4,259	0.3	6.1	115	0.9	6.3
May	4,261	0.0	6.8	116	1.1	8.6
June	4,186	-1.8	7.3	116	-0.5	6.9
July	4,236	1.2	7.6	118	1.6	8.2
August	4,217	-0.4	6.3	118	0.2	7.6
September	4,257	0.9	6.3	119	1.0	7.8
October	4,264	0.2	5.8	121	1.4	8.4
November	4,291	0.6	4.5	120	-0.8	7.3
December	4,345	1.3	4.0	118	-1.2	5.1
2005						
January	4,377	0.7	3.3	119	0.4	4.8
February	4,415	0.9	3.9	120	0.8	6.5
March	4,429	0.3	4.3	123	2.4	7.6
April	4,477	1.1	5.1	124	1.1	7.7
May	4,456	-0.5	4.6	123	-0.6	5.9
June	4,397	-1.3	5.1	124	0.7	7.1
July	4,401	0.1	3.9	125	1.1	6.6
August	4,427	0.6	5.0	126	0.2	6.6
September	4,489	1.4	5.4	127	1.3	6.9
October	4,542	1.2	6.5	128	0.8	6.2
November	4,587	1.0	6.9	129	0.4	7.5
December	4,625	0.8	6.5	130	0.7	9.6

Source: National Statistical Institute.

1/ Since January 2003 National Statistical Institute has changed the base year for the producer price index. The new base year is 2000 and all historical data was recalculated back to 1995 following internationally accepted technique.

Table A12. Bulgaria: Financial Performance of State-Owned Enterprises, 2001–05

	2001	2002	2003	2004	2005[1/]
	(In millions of leva)				
Revenues	13,682	12,966	13,396	12,016	10,032
Operational	12,740	12,335	12,576	11,695	9,875
Financial	460	623	796	319	146
Extraordinary	483	9	23	3	11
Expenditures	13,409	11,986	12,229	11,663	9,849
Operational	12,371	11,597	11,892	11,384	9,567
Financial	627	373	329	275	276
Interest paid on credits	137	107	...	...	...
Extraordinary	411	17	9	4	6
Operational surplus	369	738	684	311	308
Net financial revenues	-167	251	467	44	-130
Net extraordinary	72	-8	14	-1	5
Net revenues	273	980	1,166	354	183
Total losses	683	275	579	238	299
Total profits	955	1,256	1,745	591	482
	(In percent of GDP)				
Revenue	46.1	40.1	38.9	31.4	23.9
Operational	42.9	38.2	36.5	30.6	23.5
Financial	1.5	1.9	2.3	0.8	0.3
Extraordinary	1.6	0.0	0.1	0.0	0.0
Expenditures	45.1	37.1	35.5	30.5	23.5
Operational	41.6	35.9	34.6	29.7	22.8
Financial	2.1	1.2	1.0	0.7	0.7
Extraordinary	1.4	0.1	0.0	0.0	0.0
Operational surplus	1.2	2.3	2.0	0.8	0.7
Net financial revenues	-0.6	0.8	1.4	0.1	-0.3
Net extraordinary revenues	0.2	0.0	0.0	0.0	0.0
Net revenues	0.9	3.0	3.4	0.9	0.4
Total losses	2.3	0.9	1.7	0.6	0.7
Total profits	3.2	3.9	5.1	1.5	1.1
Memorandum item:					
GDP (million leva)	29,709	32,324	34,410	38,275	41,948

Sources: National Statistical Institute and Ministry of Finance.

1/ Data for 2005 are preliminary.

Table A13. Bulgaria: Bank and Nonbank Liabilities of State-Owned Enterprises, 2001–05

	2001	2002	2003	2004	2005 [1/]
	(Change from previous year, in millions of leva)				
Total change in liabilities	907	-1,564	-113	-503	-919
(in percent of GDP)	3.1	-4.8	-0.3	-1.3	-2.2
Changes in bank credit	640	-457	20	24	252
(in percent of GDP)	2.2	-1.4	0.1	0.1	0.6
(in percent of bank liabilities)	33.6	-31.5	1.4	1.6	14.4
Short-term loans	8	-83	16	11	9
Of which : Arrears	-60	-79	2	-2	4
Long-term loans	632	-374	4	13	242
Of which : Arrears	156	-203	5	-5	1
Other loans	-151	226	-178	-330	-284
Total change in arrears to banks	96	-282	7	-7	5
(in percent of bank credit)	5.0	-19.5	0.4	-0.5	0.3
Total change in nonbank liabilities	419	-1,334	45	-370	-370
(in percent of GDP)	1.4	-4.1	0.1	-1.0	-0.9
(in percent of nonbank liabilities)	9.9	-45.8	1.5	-14.3	-16.7
Suppliers	919	-737	81	-116	-153
Personnel	38	-58	-8	16	-57
Taxes	-109	-94	-96	-95	-91
Pensions	-5	-14	14	-21	-49
Other	-424	-431	55	-154	-20
	(Stocks in millions of leva)				
Total stocks	6,879	5,314	5,202	4,526	4,123
(in percent of GDP)	23.2	16.4	15.1	11.8	9.8
Bank credit	1,905	1,449	1,469	1,493	1,744
(in percent of GDP)	6.4	4.5	4.3	3.9	4.2
(in percent of total stocks)	27.7	27.3	28.2	33.0	42.3
Short-term loans	339	256	273	283	293
Of which : Arrears	79	...	2	…	4
Long-term loans	1,567	1,192	1,196	1,209	1,452
Of which : Arrears	203	...	5	…	1
Other loans	729	955	777	447	163
Total arrears	282	0	7	…	5
(in percent of bank credit)	14.8	0.0	0.4	…	0.3
Liabilities to non-banks	4,244	2,911	2,956	2,586	2,216
(in percent of GDP)	14.3	9.0	8.6	6.8	5.3
(in percent of total stocks)	61.7	54.8	56.8	57.1	53.7
Suppliers	2,055	1,318	1,399	1,283	1,130
Personnel	274	216	208	224	167
Taxes	641	547	450	356	264
Pensions	166	152	167	145	96
Other	1,108	677	732	579	559
GDP (In billions of leva)	29,709	32,324	34,410	38,275	41,948

Sources: National Statistical Institute; Ministry of Finance; and Bulgarian National Bank.

1/ Data for 2005 are preliminary.

Table A14. Bulgaria: Privatization of State-Owned Enterprises, 2001–05

	2001	2002	2003	2004	2005
Number of Privatization transactions 1/					
In the state sector	231	103	118	208	39
Of which:					
Privatization agency	83	76	116	208	39
Ministries/Committees	148	27	2	0	0
Privatization proceeds (US$ million) 2/	178	198	268	1,429	478
Of which:					
Payments contracted	176	163	267	1,340	478
Corporate Liabilities assumed	3	35	1	89	0
Corporate Liabilities paid	0	0	0	0	0
Long-term assets privatized (billion leva)	6	7	8	15	9
By privatization agency	4	6	8	15	9
By Ministries/Committees	2	1	0	0	0
By Center for Mass Privatization 3/	0	0	0	0	0
Long-term assets privatized (percent of total)	1.0	1.2	1.4	2.6	1.5
By privatization agency	0.6	1.0	1.4	2.6	1.5
By Ministries/Committees	0.4	0.2	0.0	0.0	0.0
By Center for Mass Privatization 3/	0.0	0.0	0.0	0.0	0.0

Source: Privatization Agency.

Table A15. Bulgaria: General Government, 2001–05 1/

	2001	2002	2003	2004	2005
			(In millions of leva)		
Total revenue 1/	11,124	11,750	13,107	14,918	17,030
Of which: Tax revenue	8,518	8,882	10,269	11,869	13,579
BNB transfers	175	173	133	171	149
Total expenditure 1/	11,384	12,025	13,255	14,333	16,047
Of which: Total non-interest	10,278	11,312	12,531	13,635	15,362
Interest	1,106	713	724	697	686
External	853	544	561	517	494
Domestic	253	169	163	181	192
Primary balance	847	438	575	1,283	1,668
Primary balance excluding BNB transfers	672	265	443	1,112	1,519
Overall balance	-259	-275	-149	586	983
Financing	259	275	149	-586	-983
External financing (net)	-96	481	-2	-622	-2,410
Domestic financing (net)	-506	-492	-250	-1,116	54
Banking system	-506	-492	-265	-1,122	55
Nonbank			16	6	-1
Net acquisition and net lending	181	286	188	565	1,247
o.w.: revenue from privatization	181	286	189	591	1,320
GSM license and BCC divident (net)	236	...	...	...	...
Receipts from BCC related to bank privatization	444	...	212	587	127
			(In percent of GDP)		
Total revenue 1/	37.4	36.3	37.9	39.0	40.6
Of which: Tax revenue	28.7	27.5	29.7	31.0	32.4
Total expenditure 1/	38.3	37.2	38.4	37.4	38.3
Of which: Total non-interest	34.6	35.0	36.3	35.6	36.6
Interest	3.7	2.2	2.1	1.8	1.6
External	2.9	1.7	1.6	1.3	1.2
Domestic	0.9	0.5	0.5	0.5	0.5
Primary balance	2.8	1.4	1.7	3.4	4.0
Primary balance excluding BNB transfers	2.3	0.8	1.3	2.9	3.6
Overall balance	-0.9	-0.9	-0.4	1.5	2.3
Financing	0.9	0.9	0.4	-1.5	-2.3
External financing (net)	-0.3	1.5	0.0	-1.6	-5.7
Domestic financing (net)	-1.7	-1.5	-0.7	-2.9	0.1
Banking system	-1.7	-1.5	-0.8	-2.9	0.1
Nonbank			0.0	0.0	0.0
Net acquisition and net lending	0.6	0.9	0.5	1.5	3.0
o.w.: revenue from privatization	0.6	0.9	0.5	1.5	3.1
GSM license and BCC divident (net)	0.8	...	...	...	...
Receipts from BCC related to bank privatization	1.5	...	0.6	1.5	0.3
Memorandum items:					
Government social insurance contributions					
(in millions of leva)	713	774	963	937	961
(in percent of GDP)	2.4	2.4	2.8	2.4	2.3
Nominal GDP (in millions of leva)	29,709	32,335	34,547	38,275	41,948

Source: Bulgarian Ministry of Finance.

1/ Excluding social insurance contributions paid by the general government on behalf of its employees. Cash basis.

Table A16. Bulgaria: General Government Revenue, 2001–05 1/

	2001	2002	2003	2004	2005
			(In millions of leva)		
Total revenue 1/	11,124	11,750	13,107	14,918	17,030
Tax revenue 1/	8,518	8,882	10,269	11,869	13,579
Profit taxes	1,150	976	1,085	973	1,028
Nonfinancial enterprises	812	871	952	854	901
Financial enterprises	339	105	133	119	127
Income taxes	1,063	1,052	1,140	1,248	1,249
VAT	2,454	2,688	3,101	3,891	4,798
Excise duties	1,107	1,314	1,544	1,885	2,188
Customs duties	195	188	231	293	372
Social insurance contributions	2,312	2,361	2,808	3,171	3,505
Pension fund	1,823	1,848	2,194	2,456	2,696
Health insurance fund	489	513	614	715	809
Other taxes	236	303	359	409	440
Nontax revenues	2,243	2,566	2,527	2,595	2,935
BNB transfers	175	173	133	171	149
Other	2,069	2,393	2,394	2,424	2,786
Assistance	363	302	311	455	516
			(In percent of GDP)		
Total revenue 1/	37.4	36.3	37.9	39.0	40.6
Tax revenue 1/	28.7	27.5	29.7	31.0	32.4
Profit taxes	3.9	3.0	3.1	2.5	2.5
Nonfinancial enterprises	2.7	2.7	2.8	2.2	2.1
Financial enterprises	1.1	0.3	0.4	0.3	0.3
Income taxes	3.6	3.3	3.3	3.3	3.0
VAT	8.3	8.3	9.0	10.2	11.4
Excise duties	3.7	4.1	4.5	4.9	5.2
Customs duties	0.7	0.6	0.7	0.8	0.9
Social insurance contributions	7.8	7.3	8.1	8.3	8.4
Pension fund	6.1	5.7	6.4	6.4	6.4
Health insurance fund	1.6	1.6	1.8	1.9	1.9
Other taxes	0.8	0.9	1.0	1.1	1.0
Nontax revenues	7.6	7.9	7.3	6.8	7.0
BNB transfers	0.6	0.5	0.4	0.4	0.4
Other	7.0	7.4	6.9	6.3	6.6
Assistance	1.2	0.9	0.9	1.2	1.2

Source: Bulgarian Ministry of Finance.

1/ Excluding social insurance contributions paid by the general government on behalf of its employees. Cash basis.

Table A17. Bulgaria: General Government Expenditure, 2001–05 1/

	2001	2002	2003	2004	2005
			(In millions of leva)		
Total expenditure 1/	11,384	12,025	13,255	14,333	16,047
Total non-interest expenditure	10,278	11,312	12,531	13,635	15,362
Current non-interest expenditure	9,002	10,080	11,140	12,008	13,041
Compensation 1/	1,748	2,015	2,205	2,381	2,506
Wages and salaries	1,711	1,974	2,159	2,335	2,459
Scholarships	37	41	45	46	46
Maintenance and operations	2,355	2,573	2,851	3,178	3,519
Subsidies	292	303	439	444	462
Subsidies for healt activities	417	470	502	425	415
Social expenditure	4,190	4,720	5,144	5,580	6,140
Pensions	2,702	2,944	3,161	3,517	3,775
Assistance	858	1,007	1,004	941	1,032
Other social security expenditure 2/	226	204	224	269	293
Health insurance fund	404	565	755	853	1,040
Net lending	79	66	150	71	46
Capital expenditure	1,197	1,166	1,241	1,556	2,275
Interest	1,106	713	724	697	686
External	853	544	561	517	494
Domestic	253	169	163	181	192
			(In percent of GDP)		
Total expenditure 1/	38.3	37.2	38.4	37.4	38.3
Total non-interest expenditure	34.6	35.0	36.3	35.6	36.6
Current non-interest expenditure	30.3	31.2	32.2	31.4	31.1
Compensation 1/	5.9	6.2	6.4	6.2	6.0
Wages and salaries	5.8	6.1	6.2	6.1	5.9
Scholarships	0.1	0.1	0.1	0.1	0.1
Maintenance and operations	7.9	8.0	8.3	8.3	8.4
Subsidies	1.0	0.9	1.3	1.2	1.1
Subsidies for health activities	1.4	1.5	1.5	1.1	1.0
Social expenditure	14.1	14.6	14.9	14.6	14.6
Pensions	9.1	9.1	9.2	9.2	9.0
Assistance	2.9	3.1	2.9	2.5	2.5
Other social security expenditure 2/	0.8	0.6	0.6	0.7	0.7
Health insurance fund	1.4	1.7	2.2	2.2	2.5
Net lending	0.3	0.2	0.4	0.2	0.1
Capital expenditure	4.0	3.6	3.6	4.1	5.4
Interest	3.7	2.2	2.1	1.8	1.6
External	2.9	1.7	1.6	1.3	1.2
Domestic	0.9	0.5	0.5	0.5	0.5

Source: Bulgarian Ministry of Finance.

1/ Excluding social insurance contributions paid by the general government on behalf of its employees. Cash basis.

2/ Includes additional compulsory social security contributions (for the second pillar of the pension system) for public sector employees.

Table A18. Bulgaria: Consolidated General Government Expenditure by Function, 2001–05 1/

	2001	2002	2003	2004	2005
	(In millions of leva)				
Total expenditure	12,097	12,798	14,218	15,267	17,008
Primary expenditure	10,991	12,085	13,495	14,569	16,323
General public services	960	951	1,098	1,115	1,268
Defense and security	1,454	1,707	1,788	1,947	2,080
Defense	734	828	826	875	922
Police, internal order, and security	565	674	727	780	824
Judicial authority	110	145	175	226	266
Administration of prisons	45	59	61	65	68
Education	1,192	1,353	1,505	1,652	1,815
Health care	1,196	1,437	1,698	1,769	2,009
Social protection	4,026	4,340	4,805	5,238	5,625
Construction, public works, utilities, environmental protection	532	503	537	606	726
Recreation, resorts, culture, and religion	217	223	316	304	348
Economic activities and services	1,436	1,505	1,748	1,937	2,452
Expenditures not classified in the other functions	1,083	778	724	698	686
o/w interest spending	1,106	713	724	697	686
	(In percent of GDP)				
Total expenditure	40.7	39.6	41.2	39.9	40.5
Primary expenditure	37.0	37.4	39.1	38.1	38.9
General public services	3.2	2.9	3.2	2.9	3.0
Defense and security	4.9	5.3	5.2	5.1	5.0
Defense	2.5	2.6	2.4	2.3	2.2
Police, internal order, and security	1.9	2.1	2.1	2.0	2.0
Judicial authority	0.4	0.4	0.5	0.6	0.6
Administration of prisons	0.2	0.2	0.2	0.2	0.2
Education	4.0	4.2	4.4	4.3	4.3
Health care	4.0	4.4	4.9	4.6	4.8
Social protection	13.6	13.4	13.9	13.7	13.4
Construction, public works, utilities, environmental protection	1.8	1.6	1.6	1.6	1.7
Recreation, resorts, culture, and religion	0.7	0.7	0.9	0.8	0.8
Economic activities and services	4.8	4.7	5.1	5.1	5.8
Expenditures not classified in the other functions	3.6	2.4	2.1	1.8	1.6
o/w interest spending	3.7	2.2	2.1	1.8	1.6

Source: Bulgarian Ministry of Finance.

1/ Includes social insurance contributions paid by the general government on behalf of its employees. Cash basis.

Table A19. Bulgaria: Public Expenditure by Function and Type of Government Body, 2001–05 (In percent of GDP) 1/

	2001	2002	2003	2004	2005
	(In percent of GDP)				
Total expenditure (consolidated)	40.7	39.6	41.2	39.9	40.5
Central government	21.0	19.3	21.2	20.4	20.7
Local government	6.6	7.4	6.5	6.2	6.5
Social security	13.1	12.9	13.4	13.3	13.3
General public services (consolidated)	3.2	2.9	3.2	2.9	3.0
Central government	2.5	2.1	2.4	2.1	2.2
Local government	0.7	0.8	0.8	0.8	0.9
Social security	0.0	0.0	0.0	0.0	0.0
Defense and security (consolidated)	4.9	5.3	5.2	5.1	5.0
Central government	4.8	5.2	5.1	5.0	4.9
Local government	0.1	0.1	0.1	0.1	0.1
Social security	0.0	0.0	0.0	0.0	0.0
Education (consolidated)	4.0	4.2	4.4	4.3	4.3
Central government	1.8	1.8	1.9	1.9	2.0
Local government	2.2	2.4	2.5	2.5	2.4
Social security	0.0	0.0	0.0	0.0	0.0
Health care (consolidated)	4.0	4.4	4.9	4.6	4.8
Central government	2.0	2.0	2.0	2.0	1.9
Local government	0.6	0.6	0.6	0.3	0.3
Social security	1.4	1.8	2.2	2.3	2.5
Social protection (consolidated)	13.6	13.4	13.9	13.7	13.4
Central government	0.5	1.0	2.2	2.2	2.2
Local government	1.3	1.4	0.5	0.5	0.4
Social security	11.7	11.1	11.2	11.0	10.7
Construction, public works, utilities, environmental protection (consolidated)	1.8	1.6	1.6	1.6	1.7
Central government	0.7	0.3	0.4	0.3	0.2
Local government	1.0	1.2	1.2	1.3	1.5
Social security	0.0	0.0	0.0	0.0	0.0
Recreation, resorts, culture, and religion (consolidated)	0.7	0.7	0.9	0.8	0.8
Central government	0.5	0.5	0.6	0.5	0.5
Local government	0.2	0.2	0.3	0.3	0.3
Social security	0.0	0.0	0.0	0.0	0.0
Economic activities and services (consolidated)	4.8	4.7	5.1	5.1	5.8
Central government	4.3	4.1	4.5	4.5	5.2
Local government	0.5	0.6	0.6	0.5	0.6
Social security	0.0	0.0	0.0	0.0	0.0
Expenditures not classified in the other functions (consolidated)	3.6	2.4	2.1	1.8	1.6
Central government	3.7	2.4	2.1	1.8	1.6
Local government	0.0	0.0	0.0	0.0	0.0
Social security	0.0	0.0	0.0	0.0	0.0

Sources: Bulgarian Ministry of Finance; IMF staff calculations.

1/ Includes social insurance contributions paid by the general government on behalf of its employees. Cash basis.

Table A20. Bulgaria: Cash Flow Statement—Consolidated General Government (GFSM 2001 Definition) 2001–05

	2001	2002	2003	2004	2005
		(In millions of leva)			
CASH FLOWS FROM OPERATING ACTIVITIES					
Cash receipts from operating activities	11,467	12,415	13,817	15,662	17,607
Taxes	6,206	6,666	7,634	8,903	10,293
Social contributions	2,498	3,075	3,654	4,080	4,410
Grants	348	284	297	440	498
Other receipts	2,416	2,390	2,232	2,239	2,407
Cash payments for operating activities	10,413	11,662	12,907	13,911	14,957
Compensation of employees	1,483	1,946	2,313	2,575	2,690
Purchases of goods and services	2,718	3,292	3,509	3,830	4,135
Interest	1,106	712	724	697	686
Subsidies	....	772	940	868	876
Grants	51	0	0	0	0
Social benefits	....	4,696	5,128	5,542	6,098
Other payments	....	244	293	399	472
Net cash inflow from operating activities	1,055	753	910	1,751	2,650
CASH FLOWS FROM INVESTMENTS IN NONFINANCIAL ASSETS					
Net cash outflow from investments in nonfinancial assets	994	961	909	1,094	1,317
Fixed assets	834	978	985	1,138	1,402
Change in inventories	-1	13	-13	-8	-14
Valuables	0	0	0	0	0
Nonproduced assets	13	-30	-63	-36	-71
Cash surplus / deficit	60	-208	1	657	1,334
CASH FLOWS FROM FINANCING ACTIVITIES					
Net Acquisition of Financial Assets other than Cash	-557	-1,223	-312	-1,230	-1,337
Domestic	-530	-211	-250	-742	-1,329
Foreign	-26	-1,012	-62	-487	-8
Monetary gold and SDRs	0	0	0	0	0
Net Incurrence of Liabilities	-323	-383	237	-754	-2,931
Domestic	-201	132	324	360	-505
Foreign	-122	-514	-87	-1,114	-2,426
Net cash inflow from financing activities	234	840	549	476	-1,594
Net change in the stock of cash	294	632	550	1,132	-260
		(In percent of GDP)			
CASH FLOWS FROM OPERATING ACTIVITIES					
Cash receipts from operating activities	38.6	38.4	40.0	40.9	42.0
Taxes	20.9	20.6	22.1	23.3	24.5
Social contributions	8.4	9.5	10.6	10.7	10.5
Grants	1.2	0.9	0.9	1.1	1.2
Other receipts	8.1	7.3	6.5	5.8	5.7
Cash payments for operating activities	35.0	36.1	37.4	36.3	35.7
Compensation of employees	5.0	6.0	6.7	6.7	6.4
Purchases of goods and services	9.1	10.2	10.2	10.0	9.9
Interest	3.7	2.2	2.1	1.8	1.6
Subsidies	....	2.4	2.7	2.3	2.1
Grants	0.2	0.0	0.0	0.0	0.0
Social benefits	....	14.5	14.8	14.5	14.5
Other payments	....	0.8	0.8	1.0	1.1
Net cash inflow from operating activities	3.5	2.3	2.6	4.6	6.3
CASH FLOWS FROM INVESTMENTS IN NONFINANCIAL ASSETS					
Net cash outflow from investments in nonfinancial assets	3.3	3.0	2.6	2.9	3.1
Fixed assets	2.8	3.0	2.9	3.0	3.3
Change in inventories	0.0	0.0	0.0	0.0	0.0
Valuables	0.0	0.0	0.0	0.0	0.0
Nonproduced assets	0.0	-0.1	-0.2	-0.1	-0.2
Cash surplus / deficit	0.2	-0.6	0.0	1.7	3.2
CASH FLOWS FROM FINANCING ACTIVITIES					
Net Acquisition of Financial Assets other than Cash	-1.9	-3.8	-0.9	-3.2	-3.2
Domestic	-1.8	-0.7	-0.7	-1.9	-3.2
Foreign	-0.1	-3.1	-0.2	-1.3	0.0
Monetary gold and SDRs	0.0	0.0	0.0	0.0	0.0
Net Incurrence of Liabilities	-1.1	-1.2	0.7	-2.0	-7.0
Domestic	-0.7	0.4	0.9	0.9	-1.2
Foreign	-0.4	-1.6	-0.3	-2.9	-5.8
Net cash inflow from financing activities	0.8	2.6	1.6	1.2	-3.8
Net change in the stock of cash	1.0	2.0	1.6	3.0	-0.6
Nominal GDP (in millions of leva)	29,709	32,335	34,547	38,275	41,948

Source: Bulgarian Ministry of Finance.

Table A21. Bulgaria: Cash Flow Statement—Consolidated Central Government (GFSM 2001 Definition) 2001–05

	2001	2002	2003	2004	2005
			(In millions of leva)		
CASH FLOWS FROM OPERATING ACTIVITIES					
Cash receipts from operating activities	10,199	11,116	12,484	14,950	16,877
Taxes	5,185	5,438	6,527	8,474	9,829
Social contributions	2,498	3,075	3,654	4,080	4,410
Grants	394	423	298	439	497
Other receipts	2,122	2,179	2,005	1,957	2,141
Cash payments for operating activities	9,293	10,533	11,712	13,426	14,396
Compensation of employees	783	1,123	1,356	1,528	1,620
Purchases of goods and services	2,088	2,535	2,740	2,915	3,116
Interest	1,096	701	721	693	680
Subsidies	543	587	738	778	770
Grants	723	1,011	758	1,590	1,664
Social benefits	3,945	4,349	5,122	5,537	6,093
Other payments	115	227	276	384	453
Net cash inflow from operating activities	906	583	773	1,524	2,481
CASH FLOWS FROM INVESTMENTS IN NONFINANCIAL ASSETS					
Net cash outflow from investments in nonfinancial assets	846	759	706	898	1,007
Fixed assets	834	748	721	864	951
Change in inventories	-1	13	-12	-8	-14
Nonproduced assets	13	-1	-3	42	70
Cash surplus / deficit	60	-177	67	625	1,474
CASH FLOWS FROM FINANCING ACTIVITIES					
Net Acquisition of Financial Assets other than Cash	-500	-1,167	-257	-1,183	-1,279
Domestic	-474	-156	-196	-696	-1,271
Foreign	-26	-1,012	-62	-487	-8
Net Incurrence of Liabilities	-277	-366	204	-780	-3,031
Domestic	-224	125	306	358	-581
Foreign	-52	-491	-102	-1,138	-2,450
Net cash inflow from financing activities	224	801	462	403	-1,752
Net change in the stock of cash	283	624	529	1,029	-279
			(In percent of GDP)		
CASH FLOWS FROM OPERATING ACTIVITIES					
Cash receipts from operating activities	34.3	34.4	36.1	39.1	40.2
Taxes	17.5	16.8	18.9	22.1	23.4
Social contributions	8.4	9.5	10.6	10.7	10.5
Grants	1.3	1.3	0.9	1.1	1.2
Other receipts	7.1	6.7	5.8	5.1	5.1
Cash payments for operating activities	31.3	32.6	33.9	35.1	34.3
Compensation of employees	2.6	3.5	3.9	4.0	3.9
Purchases of goods and services	7.0	7.8	7.9	7.6	7.4
Interest	3.7	2.2	2.1	1.8	1.6
Subsidies	1.8	1.8	2.1	2.0	1.8
Grants	2.4	3.1	2.2	4.2	4.0
Social benefits	13.3	13.5	14.8	14.5	14.5
Other payments	0.4	0.7	0.8	1.0	1.1
Net cash inflow from operating activities	3.0	1.8	2.2	4.0	5.9
CASH FLOWS FROM INVESTMENTS IN NONFINANCIAL ASSETS					
Net cash outflow from investments in nonfinancial assets	2.8	2.3	2.0	2.3	2.4
Fixed assets	2.8	2.3	2.1	2.3	2.3
Change in inventories	0.0	0.0	0.0	0.0	0.0
Nonproduced assets	0.0	0.0	0.0	0.1	0.2
Cash surplus / deficit (1-2-31)	0.2	-0.5	0.2	1.6	3.5
CASH FLOWS FROM FINANCING ACTIVITIES					
Net Acquisition of Financial Assets other than Cash	-1.7	-3.6	-0.7	-3.1	-3.0
Domestic	-1.6	-0.5	-0.6	-1.8	-3.0
Foreign	-0.1	-3.1	-0.2	-1.3	0.0
Net Incurrence of Liabilities	-0.9	-1.1	0.6	-2.0	-7.2
Domestic	-0.8	0.4	0.9	0.9	-1.4
Foreign	-0.2	-1.5	-0.3	-3.0	-5.8
Net cash inflow from financing activities	0.8	2.5	1.3	1.1	-4.2
Net change in the stock of cash	1.0	1.9	1.5	2.7	-0.7
Memorandum item					
Nominal GDP (in millions of leva)	29,709	32,335	34,547	38,275	41,948

Source: Bulgarian Ministry of Finance.

Table A22. Bulgaria: Revenue—Consolidated Central Government (GFSM 2001 Definition), 2001–05

	2001	2002	2003	2004	2005
	(In millions of leva)				
Revenue	10,199	11,116	12,484	14,950	16,877
Taxes	5,185	5,438	6,527	8,474	9,829
Taxes on income, profits, and capital gains	1,277	1,088	1,477	2,186	2,271
Taxes on goods and services	3,604	4,159	4,813	5,988	7,179
General taxes on goods and services	2,454	2,688	3,101	3,891	4,798
Excises	1,107	1,314	1,544	1,885	2,188
Taxes on specific services	43	25	24	35	6
Other taxes on goods and services	0	132	144	178	187
Taxes on international trade and transactions	195	188	231	292	372
Other taxes	109	3	6	7	8
Social contributions	2,498	3,075	3,654	4,080	4,410
Social security contributions	2,310	3,075	3,654	4,080	4,410
Employee contributions	453	588	665	735	949
Employer contributions	1,439	2,126	2,576	2,863	2,913
Self-employed or nonemployed contributions	189	360	412	483	548
Unallocable contributions	228	0	0	0	0
Other social contributions	188	0	0	0	0
Grants	394	423	298	439	497
From foreign governments	348	0	0	0	0
From international organizations	0	282	296	439	497
From other general government units	46	140	2	0	0
Other revenue	2,122	2,179	2,005	1,957	2,141
Property income	973	825	765	687	512
Sales of goods and services	837	557	500	540	883
Fines, penalties, and forfeits	270	295	247	246	260
Miscellaneous and unidentified revenue	42	493	486	475	466
	(In percent of GDP)				
Revenue	34.3	34.4	36.1	39.1	40.2
Taxes	17.5	16.8	18.9	22.1	23.4
Taxes on income, profits, and capital gains	4.3	3.4	4.3	5.7	5.4
Taxes on goods and services	12.1	12.9	13.9	15.6	17.1
General taxes on goods and services	8.3	8.3	9.0	10.2	11.4
Excises	3.7	4.1	4.5	4.9	5.2
Taxes on specific services	0.1	0.1	0.1	0.1	0.0
Taxes on use of goods and on permission to use goods	0.0	0.0	0.0	0.0	0.0
Other taxes on goods and services	0.0	0.4	0.4	0.5	0.4
Taxes on international trade and transactions	0.7	0.6	0.7	0.8	0.9
Other taxes	0.4	0.0	0.0	0.0	0.0
Social contributions	8.4	9.5	10.6	10.7	10.5
Social security contributions	7.8	9.5	10.6	10.7	10.5
Employee contributions	1.5	1.8	1.9	1.9	2.3
Employer contributions	4.8	6.6	7.5	7.5	6.9
Self-employed or nonemployed contributions	0.6	1.1	1.2	1.3	1.3
Unallocable contributions	0.8	0.0	0.0	0.0	0.0
Other social contributions	0.6	0.0	0.0	0.0	0.0
Grants	1.3	1.3	0.9	1.1	1.2
From foreign governments	1.2	0.0	0.0	0.0	0.0
From international organizations	0.0	0.9	0.9	1.1	1.2
From other general government units	0.2	0.4	0.0	0.0	0.0
Other revenue	7.1	6.7	5.8	5.1	5.1
Property income	3.3	2.6	2.2	1.8	1.2
Sales of goods and services	2.8	1.7	1.4	1.4	2.1
Fines, penalties, and forfeits	0.9	0.9	0.7	0.6	0.6
Miscellaneous and unidentified revenue	0.1	1.5	1.4	1.2	1.1
Memorandum item					
Nominal GDP (in millions of leva)	29,709	32,335	34,547	38,275	41,948

Source: Bulgarian Ministry of Finance.

Table A23. Bulgaria: Total Outlays—Consolidated Central Government (GFSM 2001 Definition) 2001–05

	2001	2002	2003	2004	2005
			(In millions of leva)		
Total outlays	10,139	11,293	12,417	14,324	15,403
General public services	2,412	2,339	2,127	3,017	3,063
Public debt transactions n.e.c.	1,096	702	721	693	680
Transfers of general character between levels of government	672	1,011	758	1,590	1,664
Defense	622	821	815	862	906
Public order and safety	554	865	949	1,056	1,140
Economic affairs	1,157	1,318	1,477	1,683	1,851
Agriculture, forestry, fishing and hunting	202	322	368	378	456
Fuel and energy	96	55	57	41	17
Mining, manufacturing, and construction	0	0	0	2	8
Transport	490	515	551	626	634
Housing and community amenities	193	105	87	101	91
Health	985	1,228	1,479	1,658	1,878
Recreation, culture and religion	143	151	195	198	212
Education	456	568	651	709	825
Social protection	3,622	3,898	4,637	5,041	5,437
Statistical discrepancy (sales of nonfinancial assets)					
Expense	9,293	10,533	11,711	13,426	14,396
Compensation of employees	783	1,123	1,356	1,528	1,620
Wages and salaries	312	856	1,027	1,154	1,243
Social contributions	471	267	328	374	378
Actual social contributions	471	267	328	374	378
Imputed social contributions	0	0	0	....	....
Use of goods and services	2,088	2,535	2,740	2,915	3,116
Interest	1,096	701	721	693	680
Subsidies	543	587	738	778	770
Grants	723	1,011	758	1,590	1,664
To foreign governments	51	0	0	0	0
To other general government units	672	1,011	758	1,590	1,664
Social benefits	3,945	4,349	5,122	5,537	6,093
Social security benefits	....	3,672	4,121	4,601	5,068
Social assistance benefits	....	250	665	555	618
Employer social benefits	....	427	336	382	408
Other expense	115	227	276	384	453
Net Acquisition of Nonfinancial Assets	846	759	706	898	1,007
Fixed assets	834	748	721	864	951
Change in inventories	-1	13	-12	-8	-14
Nonproduced assets	13	-1	-3	42	70
			(In percent of GDP)		
Total outlays	34.1	34.9	35.9	37.4	36.7
General public services	8.1	7.2	6.2	7.9	7.3
Public debt transactions n.e.c.	3.7	2.2	2.1	1.8	1.6
Transfers of general character between levels of government	2.3	3.1	2.2	4.2	4.0
Defense	2.1	2.5	2.4	2.3	2.2
Public order and safety	1.9	2.7	2.7	2.8	2.7
Economic affairs	3.9	4.1	4.3	4.4	4.4
Agriculture, forestry, fishing and hunting	0.7	1.0	1.1	1.0	1.1
Fuel and energy	0.3	0.2	0.2	0.1	0.0
Mining, manufacturing, and construction	0.0	0.0	0.0	0.0	0.0
Transport	1.6	1.6	1.6	1.6	1.5
Housing and community amenities	0.6	0.3	0.3	0.3	0.2
Health	3.3	3.8	4.3	4.3	4.5
Recreation, culture and religion	0.5	0.5	0.6	0.5	0.5
Education	1.5	1.8	1.9	1.9	2.0
Social protection	12.2	12.1	13.4	13.2	13.0
Statistical discrepancy (sales of nonfinancial assets)	0.0	0.0	0.0	0.0	0.0
Expense	31.3	32.6	33.9	35.1	34.3
Compensation of employees	2.6	3.5	3.9	4.0	3.9
Wages and salaries	1.0	2.6	3.0	3.0	3.0
Social contributions	1.6	0.8	1.0	1.0	0.9
Use of goods and services	7.0	7.8	7.9	7.6	7.4
Interest	3.7	2.2	2.1	1.8	1.6
Subsidies	1.8	1.8	2.1	2.0	1.8
Grants	2.4	3.1	2.2	4.2	4.0
To foreign governments	0.2	0.0	0.0	0.0	0.0
To international organizations	0.0	0.0	0.0	0.0	0.0
To other general government units	2.3	3.1	2.2	4.2	4.0
Social benefits	13.3	13.5	14.8	14.5	14.5
Social security benefits	....	11.4	11.9	12.0	12.1
Social assistance benefits	....	0.8	1.9	1.5	1.5
Employer social benefits	....	1.3	1.0	1.0	1.0
Other expense	0.4	0.7	0.8	1.0	1.1
Net Acquisition of Nonfinancial Assets	2.8	2.3	2.0	2.3	2.4
Fixed assets	2.8	2.3	2.1	2.3	2.3
Change in inventories	0.0	0.0	0.0	0.0	0.0
Nonproduced assets	0.0	0.0	0.0	0.1	0.2
Memorandum item					
Nominal GDP (in millions of leva)	29,709	32,335	34,547	38,275	41,948

Source: Bulgarian Ministry of Finance.

Table A24. Bulgaria: Cash Flow Statement—Budgetary Central Government (GFSM 2001 Definition) 2001–05

	2001	2002	2003	2004	2005
			(In millions of leva)		
Total outlays	10,139	11,293	12,417	14,324	15,403
General public services	2,412	2,339	2,127	3,017	3,063
Public debt transactions n.e.c.	1,096	702	721	693	680
Transfers of general character between levels of government	672	1,011	758	1,590	1,664
Defense	622	821	815	862	906
Public order and safety	554	865	949	1,056	1,140
Economic affairs	1,157	1,318	1,477	1,683	1,851
Agriculture, forestry, fishing and hunting	202	322	368	378	456
Fuel and energy	96	55	57	41	17
Mining, manufacturing, and construction	0	0	0	2	8
Transport	490	515	551	626	634
Housing and community amenities	193	105	87	101	91
Health	985	1,228	1,479	1,658	1,878
Recreation, culture and religion	143	151	195	198	212
Education	456	568	651	709	825
Social protection	3,622	3,898	4,637	5,041	5,437
Statistical discrepancy (sales of nonfinancial assets)					
Expense	9,293	10,533	11,711	13,426	14,396
Compensation of employees	783	1,123	1,356	1,528	1,620
Wages and salaries	312	856	1,027	1,154	1,243
Social contributions	471	267	328	374	378
Actual social contributions	471	267	328	374	378
Imputed social contributions	0	0	0	....	....
Use of goods and services	2,088	2,535	2,740	2,915	3,116
Interest	1,096	701	721	693	680
Subsidies	543	587	738	778	770
Grants	723	1,011	758	1,590	1,664
To foreign governments	51	0	0	0	0
To other general government units	672	1,011	758	1,590	1,664
Social benefits	3,945	4,349	5,122	5,537	6,093
Social security benefits	....	3,672	4,121	4,601	5,068
Social assistance benefits	....	250	665	555	618
Employer social benefits	....	427	336	382	408
Other expense	115	227	276	384	453
Net Acquisition of Nonfinancial Assets	846	759	706	898	1,007
Fixed assets	834	748	721	864	951
Change in inventories	-1	13	-12	-8	-14
Nonproduced assets	13	-1	-3	42	70
			(In percent of GDP)		
Total outlays	34.1	34.9	35.9	37.4	36.7
General public services	8.1	7.2	6.2	7.9	7.3
Public debt transactions n.e.c.	3.7	2.2	2.1	1.8	1.6
Transfers of general character between levels of government	2.3	3.1	2.2	4.2	4.0
Defense	2.1	2.5	2.4	2.3	2.2
Public order and safety	1.9	2.7	2.7	2.8	2.7
Economic affairs	3.9	4.1	4.3	4.4	4.4
Agriculture, forestry, fishing and hunting	0.7	1.0	1.1	1.0	1.1
Fuel and energy	0.3	0.2	0.2	0.1	0.0
Mining, manufacturing, and construction	0.0	0.0	0.0	0.0	0.0
Transport	1.6	1.6	1.6	1.6	1.5
Housing and community amenities	0.6	0.3	0.3	0.3	0.2
Health	3.3	3.8	4.3	4.3	4.5
Recreation, culture and religion	0.5	0.5	0.6	0.5	0.5
Education	1.5	1.8	1.9	1.9	2.0
Social protection	12.2	12.1	13.4	13.2	13.0
Statistical discrepancy (sales of nonfinancial assets)	0.0	0.0	0.0	0.0	0.0
Expense	31.3	32.6	33.9	35.1	34.3
Compensation of employees	2.6	3.5	3.9	4.0	3.9
Wages and salaries	1.0	2.6	3.0	3.0	3.0
Social contributions	1.6	0.8	1.0	1.0	0.9
Use of goods and services	7.0	7.8	7.9	7.6	7.4
Interest	3.7	2.2	2.1	1.8	1.6
Subsidies	1.8	1.8	2.1	2.0	1.8
Grants	2.4	3.1	2.2	4.2	4.0
To foreign governments	0.2	0.0	0.0	0.0	0.0
To international organizations	0.0	0.0	0.0	0.0	0.0
To other general government units	2.3	3.1	2.2	4.2	4.0
Social benefits	13.3	13.5	14.8	14.5	14.5
Social security benefits	....	11.4	11.9	12.0	12.1
Social assistance benefits	....	0.8	1.9	1.5	1.5
Employer social benefits	....	1.3	1.0	1.0	1.0
Other expense	0.4	0.7	0.8	1.0	1.1
Net Acquisition of Nonfinancial Assets	2.8	2.3	2.0	2.3	2.4
Fixed assets	2.8	2.3	2.1	2.3	2.3
Change in inventories	0.0	0.0	0.0	0.0	0.0
Nonproduced assets	0.0	0.0	0.0	0.1	0.2
Memorandum item					
Nominal GDP (in millions of leva)	29,709	32,335	34,547	38,275	41,948

Source: Bulgarian Ministry of Finance.

Table A25. Bulgaria: Cash Flow Statement—Extrabudgetary Accounts (GFSM 2001 Definition), 2001–05

	2001	2002	2003	2004	2005
			(In millions of leva)		
CASH FLOWS FROM OPERATING ACTIVITIES					
Cash receipts from operating activities	637	390	546	699	862
Taxes	53	2	0	0	0
Social contributions	0	0	0	0	0
Grants	395	364	531	683	789
Other receipts	189	25	14	16	73
Cash payments for operating activities	281	527	257	360	478
Compensation of employees	10	7	5	7	8
Purchases of goods and services	153	88	78	83	93
Interest	0	0	0	0	0
Subsidies	40	36	54	89	78
Grants	38	330	9	3	84
Social benefits	19	0	0	0	0
Other payments	22	66	110	178	214
Net cash inflow from operating activities	356	-137	289	339	384
CASH FLOWS FROM INVESTMENTS IN NONFINANCIAL ASSETS					
Net cash outflow from investments in nonfinancial assets	151	157	142	181	226
Fixed assets	153	157	142	180	213
Change in inventories	0	0	0	0	0
Nonproduced assets	-1	0	0	1	13
Cash surplus / deficit	205	-294	146	158	158
CASH FLOWS FROM FINANCING ACTIVITIES					
Net Acquisition of Financial Assets other than Cash	33	-27	60	-12	-104
Domestic	33	-27	60	-12	-104
Net Incurrence of Liabilities	40	39	-1	0	0
Domestic	2	0	-2	0	0
Foreign	38	39	0	0	0
Net cash inflow from financing activities	7	66	-61	12	104
Net change in the stock of cash	212	-228	85	170	263
			(In percent of GDP)		
CASH FLOWS FROM OPERATING ACTIVITIES					
Cash receipts from operating activities	2.1	1.2	1.6	1.8	2.1
Taxes	0.2	0.0	0.0	0.0	0.0
Social contributions	0.0	0.0	0.0	0.0	0.0
Grants	1.3	1.1	1.5	1.8	1.9
Other receipts	0.6	0.1	0.0	0.0	0.2
Cash payments for operating activities	0.9	1.6	0.7	0.9	1.1
Compensation of employees	0.0	0.0	0.0	0.0	0.0
Purchases of goods and services	0.5	0.3	0.2	0.2	0.2
Interest	0.0	0.0	0.0	0.0	0.0
Subsidies	0.1	0.1	0.2	0.2	0.2
Grants	0.1	1.0	0.0	0.0	0.2
Social benefits	0.1	0.0	0.0	0.0	0.0
Other payments	0.1	0.2	0.3	0.5	0.5
Net cash inflow from operating activities	1.2	-0.4	0.8	0.9	0.9
CASH FLOWS FROM INVESTMENTS IN NONFINANCIAL ASSETS					
Net cash outflow from investments in nonfinancial assets	0.5	0.5	0.4	0.5	0.5
Fixed assets	0.5	0.5	0.4	0.5	0.5
Change in inventories	0.0	0.0	0.0	0.0	0.0
Nonproduced assets	0.0	0.0	0.0	0.0	0.0
Cash surplus / deficit	0.7	-0.9	0.4	0.4	0.4
CASH FLOWS FROM FINANCING ACTIVITIES					
Net Acquisition of Financial Assets other than Cash	0.1	-0.1	0.2	0.0	-0.2
Domestic	0.1	-0.1	0.2	0.0	-0.2
Net Incurrence of Liabilities	0.1	0.1	0.0	0.0	0.0
Domestic	0.0	0.0	0.0	0.0	0.0
Foreign	0.1	0.1	0.0	0.0	0.0
Net cash inflow from financing activities	0.0	0.2	-0.2	0.0	0.2
Net change in the stock of cash	0.7	-0.7	0.2	0.4	0.6
Memorandum item					
Nominal GDP (in millions of leva)	29,709	32,335	34,547	38,275	41,948

Source: Bulgarian Ministry of Finance.

Table A26. Bulgaria: Cash Flow Statement—Social Security Funds (GFSM 2001 Definition), 2001–05

	2001	2002	2003	2004	2005
			(In millions of leva)		
CASH FLOWS FROM OPERATING ACTIVITIES					
Cash receipts from operating activities	4,105	4,264	4,646	5,100	5,549
Taxes	0	0	0	0	0
Social contributions	2,498	3,075	3,654	4,080	4,410
Grants	1,430	1,027	925	927	1,040
Other receipts	177	162	67	93	99
Cash payments for operating activities	3,869	4,173	4,637	5,073	5,572
Compensation of employees	41	34	43	53	59
Purchases of goods and services	34	21	22	53	55
Interest	2	1	1	1	1
Grants	0	5	4	5	5
Social benefits	3,793	4,111	4,568	4,961	5,451
Other payments	0	0	0	0	0
Net cash inflow from operating activities	235	91	9	27	-23
CASH FLOWS FROM INVESTMENTS IN NONFINANCIAL ASSETS					
Net cash outflow from investments in nonfinancial assets	18	4	2	9	9
Fixed assets	17	4	2	7	8
Change in inventories	0	0	0	0	0
Valuables	0	0	0	0	0
Nonproduced assets	1	0	0	2	1
Cash surplus / deficit	218	87	7	18	-32
CASH FLOWS FROM FINANCING ACTIVITIES					
Net Acquisition of Financial Assets other than Cash	0	2	-1	16	7
Domestic	0	2	-1	11	7
Net Incurrence of Liabilities	1	-1	-9	2	-25
Domestic	-11	0	2	0	-17
Foreign	13	-1	-12	2	-8
Net cash inflow from financing activities	1	-3	-8	-14	-32
Net change in the stock of cash	219	84	-1	4	-64
			(In percent of GDP)		
CASH FLOWS FROM OPERATING ACTIVITIES					
Cash receipts from operating activities	13.8	13.2	13.4	13.3	13.2
Taxes	0.0	0.0	0.0	0.0	0.0
Social contributions	8.4	9.5	10.6	10.7	10.5
Grants	4.8	3.2	2.7	2.4	2.5
Other receipts	0.6	0.5	0.2	0.2	0.2
Cash payments for operating activities	13.0	12.9	13.4	13.3	13.3
Compensation of employees	0.1	0.1	0.1	0.1	0.1
Purchases of goods and services	0.1	0.1	0.1	0.1	0.1
Interest	0.0	0.0	0.0	0.0	0.0
Grants	0.0	0.0	0.0	0.0	0.0
Social benefits	12.8	12.7	13.2	13.0	13.0
Other payments	0.0	0.0	0.0	0.0	0.0
Net cash inflow from operating activities	0.8	0.3	0.0	0.1	-0.1
CASH FLOWS FROM INVESTMENTS IN NONFINANCIAL ASSETS					
Net cash outflow from investments in nonfinancial assets	0.1	0.0	0.0	0.0	0.0
Fixed assets	0.1	0.0	0.0	0.0	0.0
Change in inventories	0.0	0.0	0.0	0.0	0.0
Valuables	0.0	0.0	0.0	0.0	0.0
Nonproduced assets	0.0	0.0	0.0	0.0	0.0
Cash surplus / deficit	0.7	0.3	0.0	0.0	-0.1
CASH FLOWS FROM FINANCING ACTIVITIES					
Net Acquisition of Financial Assets other than Cash	0.0	0.0	0.0	0.0	0.0
Domestic	0.0	0.0	0.0	0.0	0.0
Net Incurrence of Liabilities	0.0	0.0	0.0	0.0	-0.1
Domestic	0.0	0.0	0.0	0.0	0.0
Foreign	0.0	0.0	0.0	0.0	0.0
Net cash inflow from financing activities	0.0	0.0	0.0	0.0	-0.1
Net change in the stock of cash	0.7	0.3	0.0	0.0	-0.2
Memorandum item					
Nominal GDP (in millions of leva)	29,709	32,335	34,547	38,275	41,948

Source: Bulgarian Ministry of Finance.

Table A27. Bulgaria: Cash Flow Statement—Local Governments (GFSM 2001 Definition), 2001–05

	2001	2002	2003	2004	2005
			(In millions of leva)		
CASH FLOWS FROM OPERATING ACTIVITIES					
Cash receipts from operating activities	1,987	2,451	2,093	2,303	2,394
Taxes	1,020	1,227	1,107	429	464
Social contributions	0	0	0	0	0
Grants	673	1,013	759	1,591	1,665
Other receipts	294	211	227	282	266
Cash payments for operating activities	1,839	2,281	1,955	2,076	2,225
Compensation of employees	700	823	957	1,046	1,070
Purchases of goods and services	630	758	769	915	1,020
Interest	10	11	2	4	6
Subsidies	....	185	202	90	105
Grants	46	141	2	0	0
Social benefits	....	347	6	5	5
Other payments	....	17	17	15	19
Net cash inflow from operating activities	149	170	138	227	169
CASH FLOWS FROM INVESTMENTS IN NONFINANCIAL ASSETS					
Net cash outflow from investments in nonfinancial assets	148	201	204	196	309
Fixed assets	0	230	264	274	451
Nonproduced assets	0	-29	-60	-78	-141
Cash surplus / deficit	1	-31	-66	31	-140
CASH FLOWS FROM FINANCING ACTIVITIES					
Net Acquisition of Financial Assets other than Cash	-56	-53	-55	-46	-59
Domestic	-56	-53	-55	-46	-59
Net Incurrence of Liabilities	-46	-14	33	26	100
Domestic	24	10	17	3	75
Foreign	-70	-24	15	24	24
Net cash inflow from financing activities	10	39	87	73	158
Net change in the stock of cash	11	8	21	104	18
			(In percent of GDP)		
CASH FLOWS FROM OPERATING ACTIVITIES					
Cash receipts from operating activities	6.7	7.6	6.1	6.0	5.7
Taxes	3.4	3.8	3.2	1.1	1.1
Social contributions	0.0	0.0	0.0	0.0	0.0
Grants	2.3	3.2	2.2	4.2	4.0
Other receipts	1.0	0.6	0.7	0.7	0.6
Cash payments for operating activities	6.2	7.1	5.7	5.4	5.3
Compensation of employees	2.4	2.5	2.8	2.7	2.6
Purchases of goods and services	2.1	2.3	2.2	2.4	2.4
Interest	0.0	0.0	0.0	0.0	0.0
Subsidies	....	0.6	0.6	0.2	0.3
Grants	0.2	0.4	0.0	0.0	0.0
Social benefits	....	1.1	0.0	0.0	0.0
Other payments	....	0.1	0.0	0.0	0.0
Net cash inflow from operating activities	0.5	0.5	0.4	0.6	0.4
CASH FLOWS FROM INVESTMENTS IN NONFINANCIAL ASSETS					
Net cash outflow from investments in nonfinancial assets	0.5	0.6	0.6	0.5	0.7
Fixed assets	0.0	0.7	0.8	0.7	1.1
Nonproduced assets	0.0	-0.1	-0.2	-0.2	-0.3
Cash surplus / deficit	0.0	-0.1	-0.2	0.1	-0.3
CASH FLOWS FROM FINANCING ACTIVITIES					
Net Acquisition of Financial Assets other than Cash	-0.2	-0.2	-0.2	-0.1	-0.1
Domestic	-0.2	-0.2	-0.2	-0.1	-0.1
Net Incurrence of Liabilities	-0.2	0.0	0.1	0.1	0.2
Domestic	0.1	0.0	0.1	0.0	0.2
Foreign	-0.2	-0.1	0.0	0.1	0.1
Net cash inflow from financing activities	0.0	0.1	0.3	0.2	0.4
Net change in the stock of cash	0.0	0.0	0.1	0.3	0.0
Memorandum item					
Nominal GDP (in millions of leva)	29,709	32,335	34,547	38,275	41,948

Source: Bulgarian Ministry of Finance.

Table A28. Bulgaria: Monetary Survey, 2001–05

	2001	2002	2003	2004	2005
			(In millions of leva)		
Broad money	12,401	13,857	16,566	20,394	25,260
Currency outside banks	3,081	3,335	3,874	4,628	5,396
Deposits	9,319	10,519	12,591	15,674	19,841
in levs	4,400	5,302	6,514	8,873	11,097
in foreign currency	4,919	5,218	6,077	6,802	8,744
Repos and debt securities issued	...	3	102	92	23
in levs	...	3	86	92	23
in foreign currency	...	0	16	0	0
Long term financial liabilities	2,888	3,402	3,982	4,767	6,216
Deposits 1/	15	94	202	394	617
in levs	12	74	118	181	254
in foreign currency	2	20	84	213	362
Debt securities issued	6	16	54	177	210
in levs	0	5	5	44	40
in foreign currency	6	11	49	133	171
Capital and reserves	2,867	3,293	3,726	4,196	5,389
Net foreign assets	9,454	9,892	10,049	11,194	13,221
BNB	5,485	6,982	8,545	11,571	13,343
DMB	3,969	2,910	1,504	-377	-122
Net domestic assets	5,835	7,368	10,499	13,967	18,255
Domestic credit	6,009	7,656	10,251	13,757	18,300
Lev credit	3,002	4,227	5,643	8,131	8,754
Government (net) 2/	138	472	218	724	-1,079
Non-government	2,864	3,755	5,425	7,407	9,833
Nonfinancial corporations	1,960	2,437	3,086	3,346	3,835
Nonbank financial corporations	15	33	60	168	136
Households and NPISHs	888	1,285	2,279	3,894	5,862
Foreign currency credit	3,006	3,430	4,608	5,626	9,546
Government (net) 2/	1,427	788	546	-1,063	716
Non-government	1,579	2,642	4,062	6,689	8,830
Nonfinancial corporations	1,489	2,472	3,646	5,947	7,603
Nonbank financial corporations	44	70	194	262	160
Households and NPISHs	46	100	223	480	1,066
Fixed assets	879	951	1,183	1,337	1,575
Other items net	-1,052	-1,239	-935	-1,127	-1,620
			(Percent change from previous year)		
Broad money	25.8	11.7	19.6	23.1	23.9
Lev deposits	28.0	20.5	22.9	36.2	25.1
Foreign currency deposits	21.6	6.1	16.5	11.9	28.6
Domestic credit	26.0	27.4	33.9	34.2	33.0
Non-government	31.9	31.1	44.5	36.5	32.7
Nonfinancial corporations	25.3	24.3	26.6	8.4	14.6
Nonbank financial corporations	81.4	111.7	82.7	179.7	-18.9
Households and NPISHs	48.4	44.7	77.4	70.8	50.5
			(In millions of euros)		
Foreign currency deposits	2,515	2,668	3,107	3,478	4,471
(In percent of broad money)	39.7	37.7	36.7	33.4	34.6
Net foreign assets	4,834	5,058	5,138	5,723	6,760
BNB	2,805	3,570	4,369	5,916	6,822
DMB	2,029	1,488	769	-193	-62

Source: Bulgarian National Bank.

1/ Long-term deposits include deposits with agreed maturity over 2 years and deposits redeemable at notice over 3 months which are not included in broad money.
2/ Includes net claims on central government and gross claims on local government and SSF's.

Table A29. Bulgaria: Foreign Assets of the Banking System, 2001-06

		BNB International Reserves						Deposit Money Banks		Banking System	
		Foreign assets 1/	International reserves	IMF purchases	Net reserves 2/	Foreign liabilities	Net foreign assets	Foreign assets 3/	Foreign currency deposits 4/	Foreign assets 5/	Broad money
		(In millions of U.S. dollars)									
2001:	March	3,163	3,080	1,284	1,796	1,284	1,879	2,173	1,834	5,336	4,617
	June	3,123	3,040	1,261	1,779	1,261	1,862	2,069	1,826	5,191	4,537
	Sep.	3,203	3,120	1,221	1,899	1,221	1,982	2,154	1,800	5,357	5,183
	Dec.	3,581	3,580	1,109	2,471	1,109	2,472	2,102	1,629	5,683	5,588
2002:	March	3,210	3,210	1,073	2,137	1,073	2,137	2,103	1,626	5,313	5,500
	June	4,034	4,033	1,060	2,974	1,060	2,974	1,882	1,399	5,916	6,173
	Sep.	4,284	4,283	1,065	3,219	1,065	3,219	1,992	1,512	6,276	6,460
	Dec.	4,747	4,747	1,043	3,704	1,043	3,704	2,018	1,479	6,765	7,352
2003:	March	4,793	4,792	1,069	3,724	1,069	3,724	2,108	1,538	6,901	7,611
	June	5,522	5,522	1,085	4,437	1,085	4,438	1,899	1,356	7,422	8,371
	Sep.	5,888	5,887	1,169	4,718	1,169	4,719	2,097	1,443	7,985	9,081
	Dec.	6,705	6,705	1,188	5,517	1,188	5,518	1,939	1,197	8,644	10,698
2004	March	6,573	6,559	1,241	5,318	1,241	5,333	2,029	1,267	8,602	10,504
	June	7,443	7,428	1,190	6,239	1,190	6,253	2,284	1,495	9,726	11,287
	Sep.	7,732	7,717	1,167	6,550	1,167	6,565	2,200	1,465	9,932	11,905
	Dec.	9,238	9,222	1,179	8,043	1,179	8,059	3,126	1,930	12,364	14,203
2005	March	8,763	8,748	1,109	7,639	1,109	7,654	2,969	1,848	11,732	15,381
	June	9,026	9,012	1,005	8,008	1,005	8,021	2,784	1,362	11,810	14,082
	Sep.	8,803	8,789	937	7,852	937	7,866	2,927	1,815	11,730	14,620
	Dec.	8,708	8,695	660	8,035	660	8,048	3,272	2,174	11,980	15,236
2006	March	8,507	8,493	433	8,060	433	8,074	3,836	2,554	12,344	15,817

Source: Bulgarian National Bank.

1/ Includes international reserves and other foreign assets of BNB

2/ International reserves net of outstanding purchases from the IMF.

3/ Includes claims in non-convertible currency and other illiquid assets in addition to claims on nonresident banks.

4/ Includes overnight deposits, deposits with agreed maturity and deposits redeemable at notice in foreign currency with non-residents (to date, the latter category has been zero).

5/ Includes foreign assets of BNB and foreign assets of DMB.

Table A30. Bulgaria: Composition of Broad Money, 2001-06

	Currency	Overnight deposits			Narrow	Deposits with agreed maturity up to 2 years			Deposits redeemable at notice up to 3 months				Repurchase	Debt securities	Broad money
	outside banks	in lev	in foreign currency	total	money (MI)	in lev	in foreign currency	total	in lev	in foreign currency	total	M2	agreements	issued up to 2 years	(M3)
								(In millions of leva)							
2001: March	2,225	1,785	899	2,684	4,909	1,474	2,859	4,333	471	512	983	10,225	...	...	10,225
June	2,428	1,610	1,001	2,612	5,039	1,804	2,576	4,380	488	557	1,045	10,464	...	...	10,464
Sep.	2,602	1,672	1,042	2,714	5,316	1,901	2,798	4,699	509	579	1,088	11,102	...	...	11,102
Dec.	3,081	1,802	1,150	2,952	6,033	2,050	3,085	5,135	548	684	1,232	12,401	...	...	12,401
2002: March	2,855	1,737	1,069	2,806	5,661	2,075	3,345	5,420	566	682	1,248	12,330	...	...	12,330
June	2,828	1,573	1,135	2,708	5,537	2,247	3,094	5,342	564	660	1,223	12,101	...	2	12,103
Sep.	3,022	1,781	1,166	2,947	5,969	2,230	3,314	5,544	590	710	1,300	12,813	...	2	12,815
Dec.	3,335	2,207	1,154	3,361	6,696	2,449	3,333	5,782	645	731	1,376	13,854	...	3	13,857
2003: March	3,088	1,999	1,187	3,186	6,274	2,434	3,435	5,870	655	742	1,397	13,542	118	3	13,662
June	3,356	2,227	1,251	3,479	6,834	2,530	3,385	5,915	687	761	1,448	14,197	128	2	14,328
Sep.	3,624	2,437	1,356	3,792	7,416	2,646	3,481	6,127	728	802	1,530	15,073	165	5	15,243
Dec.	3,874	2,927	1,229	4,156	8,030	2,797	4,018	6,815	790	830	1,620	16,465	99	2	16,566
2004: March	3,723	2,818	1,295	4,112	7,835	2,950	4,187	7,137	829	878	1,707	16,678	125	2	16,806
June	3,961	2,920	1,541	4,461	8,422	3,081	4,714	7,795	888	927	1,816	18,033	126	2	18,161
Sep.	4,342	3,332	1,565	4,897	9,239	3,289	4,117	7,407	924	1,104	2,029	18,675	87	2	18,763
Dec.	4,628	4,122	1,548	5,670	10,298	3,698	4,229	7,927	1,053	1,024	2,077	20,302	92	0	20,394
2005 March	4,487	4,497	2,346	6,843	11,331	4,582	4,971	9,553	1,091	1,201	2,292	23,176	30	0	23,205
June	4,848	4,198	2,121	6,319	11,167	4,566	4,867	9,433	1,061	1,088	2,150	22,749	28	0	22,778
Sep.	5,213	4,411	1,942	6,353	11,566	4,848	5,095	9,943	1,099	1,122	2,222	23,730	15	0	23,746
Dec.	5,396	4,959	2,089	7,047	12,443	4,981	5,502	10,483	1,158	1,153	2,311	25,237	23	0	25,260
2006 March	5,113	4,905	2,354	7,258	12,371	5,049	5,779	10,828	1,166	1,173	2,339	25,538	20	0	25,558
								(In percent of broad money)							
2001: March	21.8	17.5	8.8	26.2	48.0	14.4	28.0	42.4	4.6	5.0	9.6	100.0	...	...	100.0
June	23.2	15.4	9.6	25.0	48.2	17.2	24.6	41.9	4.7	5.3	10.0	100.0	...	...	100.0
Sep.	23.4	15.1	9.4	24.4	47.9	17.1	25.2	42.3	4.6	5.2	9.8	100.0	...	...	100.0
Dec.	24.8	14.5	9.3	23.8	48.7	16.5	24.9	41.4	4.4	5.5	9.9	100.0	...	...	100.0
2002: March	23.2	14.1	8.7	22.8	45.9	16.8	27.1	44.0	4.6	5.5	10.1	100.0	...	...	100.0
June	23.4	13.0	9.4	22.4	45.7	18.6	25.6	44.1	4.7	5.5	10.1	100.0	...	0.0	100.0
Sep.	23.6	13.9	9.1	23.0	46.6	17.4	25.9	43.3	4.6	5.5	10.1	100.0	...	0.0	100.0
Dec.	24.1	15.9	8.3	24.3	48.3	17.7	24.1	41.7	4.7	5.3	9.9	100.0	...	0.0	100.0
2003: March	22.6	14.6	8.7	23.3	45.9	17.8	25.1	43.0	4.8	5.4	10.2	99.1	0.9	0.0	100.0
June	23.4	15.5	8.7	24.3	47.7	17.7	23.6	41.3	4.8	5.3	10.1	99.1	0.9	0.0	100.0
Sep.	23.8	16.0	8.9	24.9	48.7	17.4	22.8	40.2	4.8	5.3	10.0	98.9	1.1	0.0	100.0
Dec.	23.4	17.7	7.4	25.1	48.5	16.9	24.3	41.1	4.8	5.0	9.8	99.4	0.6	0.0	100.0
2004: March	22.2	16.8	7.7	24.5	46.6	17.6	24.9	42.5	4.9	5.2	10.2	99.2	0.7	0.0	100.0
June	21.8	16.1	8.5	24.6	46.4	17.0	26.0	42.9	4.9	5.1	10.0	99.3	0.7	0.0	100.0
Sep.	23.1	17.8	8.3	26.1	49.2	17.5	21.9	39.5	4.9	5.9	10.8	99.5	0.5	0.0	100.0
Dec.	22.7	20.2	7.6	27.8	50.5	18.1	20.7	38.9	5.2	5.0	10.2	99.5	0.5	0.0	100.0
2005: March	19.3	19.4	10.1	29.5	48.8	19.7	21.4	41.2	4.7	5.2	9.9	99.9	0.1	0.0	100.0
June	21.3	18.4	9.3	27.7	49.0	20.0	21.4	41.4	4.7	4.8	9.4	99.9	0.1	0.0	100.0
Sep.	22.0	18.6	8.2	26.8	48.7	20.4	21.5	41.9	4.6	4.7	9.4	99.9	0.1	0.0	100.0
Dec.	21.4	19.6	8.3	27.9	49.3	19.7	21.8	41.5	4.6	4.6	9.1	99.9	0.1	0.0	100.0
2006: March	20.0	19.2	9.2	28.4	48.4	19.8	22.6	42.4	4.6	4.6	9.2	99.9	0.1	0.0	100.0

Source: Bulgarian National Bank.

Table A31. Bulgaria: Nominal Interest Rates and Exchange Rates, 2001–06

		BNB basic rate	DMB lending rate		Time deposit rate		Time deposit	Lev per U.S. dollar	
		Annual	Short-term	Long-term	overnight	time deposit	EUR	End-month	Month average
2001:	Jan.	4.4	14.2	16.4	0.4	3.1	3.5	2.1046	2.0848
	Feb.	4.1	12.5	14.4	0.4	3.2	3.4	2.1149	2.1223
	Mar.	4.2	10.6	15.7	0.4	3.1	3.3	2.2145	2.1513
	Apr.	4.3	9.7	14.6	0.4	3.2	3.1	2.1676	2.1919
	May	4.4	10.7	15.5	0.4	3.1	2.9	2.3064	2.2339
	Jun.	4.5	12.2	15.9	0.4	3.3	2.6	2.3064	2.2925
	Jul.	4.5	11.7	14.0	0.4	3.4	2.9	2.2340	2.2730
	Aug.	4.7	12.1	14.1	0.4	3.8	3.0	2.1357	2.1726
	Sep.	4.7	11.8	14.8	0.4	3.0	2.6	2.1420	2.1413
	Oct.	4.6	9.8	15.3	0.4	2.9	2.7	2.1631	2.1593
	Nov.	4.7	11.9	15.5	0.4	2.5	2.3	2.1981	2.2020
	Dec.	4.7	13.2	14.5	0.4	3.4	2.2	2.2193	2.1916
2002:	Jan.	4.8	10.1	15.7	0.4	2.7	2.2	2.2645	2.2147
	Feb.	4.6	9.8	15.7	0.5	2.9	2.2	2.2608	2.2480
	Mar.	4.5	9.7	14.0	0.4	2.4	2.2	2.2419	2.2337
	Apr.	4.1	10.1	14.3	0.5	3.0	2.2	2.1712	2.2096
	May.	3.9	9.6	13.9	0.5	2.9	2.1	2.0836	2.1312
	Jun.	3.7	9.7	14.6	0.5	3.2	2.1	1.9607	2.0478
	Jul.	3.7	10.3	14.5	0.5	3.5	2.2	1.9992	1.9715
	Aug.	3.8	9.9	13.2	0.5	3.0	2.4	1.9891	2.0004
	Sep.	3.8	10.1	14.5	0.5	3.0	2.1	1.9836	1.9954
	Oct.	3.7	8.7	14.0	0.5	3.2	2.2	1.9828	1.9935
	Nov.	3.7	9.0	14.2	0.6	3.1	2.2	1.9702	1.9533
	Dec.	3.4	10.2	14.2	0.5	3.2	2.2	1.8850	1.9245
2003:	Jan.	3.2	8.8	13.6	0.6	3.2	2.1	1.8083	1.8417
	Feb.	2.5	9.8	13.7	0.6	3.2	2.1	1.8140	1.8155
	Mar.	2.5	9.1	13.8	0.6	3.3	2.0	1.7952	1.8103
	Apr.	2.6	8.7	14.3	0.6	3.2	1.9	1.7571	1.8035
	May	3.0	10.5	13.6	0.6	3.2	2.0	1.6544	1.6836
	Jun.	2.9	10.1	14.4	0.6	3.2	2.0	1.7116	1.6772
	Jul.	2.5	8.7	13.1	0.5	3.1	1.9	1.7281	1.7200
	Aug.	2.5	7.8	13.9	0.5	3.2	1.9	1.7899	1.7564
	Sep.	2.6	9.7	13.2	0.6	2.9	1.8	1.6785	1.7455
	Oct.	2.6	8.1	12.8	0.6	2.9	1.9	1.6829	1.6729
	Nov.	2.6	9.3	12.9	0.6	3.0	2.0	1.6307	1.6718
	Dec.	2.7	9.5	12.9	0.5	3.2	2.2	1.5486	1.5931
2004:	Jan.	2.8	8.9	13.0	0.6	3.2	2.1	1.5793	1.5499
	Feb.	2.5	8.9	12.6	0.6	3.2	2.3	1.5750	1.5467
	Mar.	2.4	9.1	12.8	0.6	3.1	2.0	1.6000	1.5945
	Apr.	2.6	8.6	13.0	0.6	3.2	2.1	1.6371	1.6335
	May	2.8	9.1	13.1	0.6	3.2	2.0	1.6034	1.6315
	Jun.	3.8	11.0	13.2	0.6	3.1	2.2	1.6091	1.6114
	Jul.	2.4	8.5	12.8	0.6	3.1	2.1	1.6246	1.5947
	Aug.	2.4	9.1	13.0	0.6	3.3	2.0	1.6149	1.6065
	Sep.	2.4	9.1	12.7	0.6	3.3	2.1	1.5761	1.6001
	Oct.	2.4	9.3	12.4	0.6	3.3	2.1	1.5356	1.5663
	Nov.	2.4	9.6	12.5	0.6	3.2	2.2	1.4711	1.5057
	Dec.	2.4	8.7	12.2	0.6	3.0	2.2	1.4359	1.4606
2005:	Jan.	2.4	8.0	12.6	0.6	3.0	2.1	1.5004	1.4910
	Feb.	1.9	8.0	11.9	0.6	3.0	2.0	1.4753	1.5030
	Mar.	1.9	8.4	10.9	0.8	3.2	2.4	1.5087	1.4823
	Apr.	2.0	9.7	10.7	0.6	3.3	2.0	1.5095	1.5118
	May	2.0	8.8	11.7	0.6	3.2	2.1	1.5861	1.5432
	Jun.	2.1	9.2	11.3	0.6	3.4	2.2	1.6175	1.6079
	Jul.	2.0	7.6	11.6	0.7	3.3	2.3	1.6173	1.6249
	Aug.	2.0	7.4	11.6	0.6	3.3	2.2	1.6034	1.5912
	Sep.	2.0	7.0	11.0	0.7	3.3	2.2	1.6242	1.5973
	Oct.	2.0	7.1	10.4	0.7	3.3	2.2	1.6267	1.6279
	Nov.	2.0	9.1	9.9	0.6	3.3	2.2	1.6619	1.6596
	Dec.	2.1	7.7	9.7	0.6	3.4	2.4	1.6579	1.6498
2006	Jan.	2.2	8.2	10.1	0.6	3.3	2.3	1.6140	1.6140
	Feb.	2.3	9.2	9.9	0.6	3.5	2.4	1.6470	1.6383
	Mar.	2.3	8.3	9.6	0.6	3.6	2.4	1.6159	1.6272

Source: Bulgarian National Bank.

Table A32. Bulgaria: National Bank Balance Sheet, 2002-06

	2002				2003				2004				2005				2006
	Mar.	Jun.	Sep.	Dec.	Mar.	Jun.	Sep.	Dec.	Mar.	Jun.	Sep.	Dec.	Mar.	Jun.	Sep.	Dec.	Mar.
	(In millions of leva)																
Reserve money	3,794	3,692	3,841	4,482	4,089	4,304	4,605	5,266	4,978	5,236	6,012	7,058	6,662	7,286	7,837	8,351	8,347
Currency in circulation	3,019	3,023	3,250	3,628	3,329	3,618	3,919	4,264	4,029	4,285	4,694	5,020	4,823	5,221	5,611	5,867	5,529
DMB reserves (net)	775	669	591	854	760	686	686	1,002	949	952	1,318	2,038	1,839	2,065	2,225	2,484	2,818
Net foreign assets	4,791	5,831	6,385	6,982	6,685	7,596	7,921	8,545	8,532	10,062	10,347	11,571	11,547	12,974	12,775	13,343	13,047
Net domestic assets	-997	-2,139	-2,544	-2,500	-2,596	-3,292	-3,315	-3,278	-3,554	-4,825	-4,335	-4,513 0	-4,885	-5,688	-4,938	-4,992	-4,700
Government credit (net)	958	-195	-360	-251	-358	-1,051	-1,068	-508	-747	-2,085	-1,985	-1,837	-1,917	-2,670	-2,091	-2,219	-1,993
Claims on DMBs (FX)	18	18	15	15	6	6	6	6	6	6	6	6	6	5	5	5	5
Claims on DMBs (leva)	9	9	9	9	0	0	0	0	0	0	0	0	0	0	0	0	0
Other items net	-1,983	-1,972	-2,208	-2,273	-2,244	-2,247	-2,254	-2,777	-2,814	-2,747	-2,358	-2,683 0	-2,975	-3,023	-2,852	-2,778	-2,712
	(Percent change from previous quarter)																
Memorandum items:																	
Broad money	-0.6	-1.8	5.9	8.1	-1.4	4.9	6.4	8.7	1.4	8.1	3.3	8.7	13.8	-1.8	4.3	6.4	1.2
Lev money	-3.3	-0.3	5.7	13.3	-4.0	7.5	7.0	9.8	-0.6	5.1	9.4	13.6	8.1	0.1	6.0	6.0	-1.6
Reserve money	-5.9	-2.7	4.0	16.7	-8.8	5.2	7.0	14.4	-5.5	5.2	14.8	17.4	-5.6	9.4	7.6	6.6	-0.1
Contributions to reserve money growth																	
NFA	-12.7	21.7	9.5	9.3	-4.3	13.6	4.3	7.9	-0.1	17.9	2.8	11.8	-0.2	12.4	-1.5	4.4	-2.2
NDA	-31.4	114.6	18.9	-1.7	3.8	26.8	0.7	-1.1	8.4	35.8	-10.1	4.1	8.3	16.4	-13.2	1.1	-5.8
Reserve money multiplier (Ratio)																	
Broad money	3.2	3.3	3.3	3.1	3.3	3.3	3.3	3.1	3.4	3.5	3.1	2.9	3.5	3.1	3.0	3.0	3.1

Source: Bulgarian National Bank.

Table A33. Bulgaria: Commercial Bank Indicators, 2003-05

	2003				2004				2005			
	Mar.	Jun.	Sep.	Dec. 1/	Mar.	Jun.	Sep.	Dec. 1/	Mar.	Jun.	Sep.	Dec. 1/
Liquidity Ratios and Capital Adequcy												
Primary liquidity, percent of deposits 2/	9.0	9.8	9.3	12.0	9.9	9.9	11.5	13.7	10.2	12.3	12.7	12.8
Secondary liquidity, percent of deposits 3/	27.1	26.0	24.3	26.2	24.6	27.1	26.1	31.7	27.7	30.2	29.8	31.3
Capital base (in billions of leva)	1,830	1,959	2,057	2,153	2,286	2,125	2,171	2,321	2,540	2,722	2,870	2,985
Total risk component (in billions of leva)	7,526	8,207	8,954	9,700	10,742	11,584	12,674	13,999	16,521	16,337	18,038	19,475
Total capital adequacy (in percent)	24.3	23.9	23.0	22.2	21.3	18.4	17.1	16.6	15.4	16.7	15.9	15.3
Quality of Credit Portfolio												
Total (in billions of leva) 4/	10,286	10,547	11,393	11,957	13,234	14,551	15,639	17,726	22,414	20,721	21,746	24,223
Standard (in percent)	93.9	94.0	94.1	93.7	94.5	94.6	94.4	94.5	94.8	94.1	93.7	94.2
Watch (in percent)	2.8	2.8	2.6	3.0	2.5	3.0	3.1	2.7	2.9	3.1	3.3	3.1
Substandard (in percent)	0.9	0.8	0.9	0.8	0.7	0.5	0.6	1.2	1.0	1.1	1.2	1.1
Non-performing (in percent)	2.4	2.5	2.5	2.5	2.3	1.9	1.9	1.6	1.4	1.7	1.8	1.7
Provisions (in percent)	3.3	3.2	3.2	3.1	2.9	2.7	2.8	2.7	2.4	2.8	2.7	2.7

Source: Bulgarian National Bank based on audited annual reports of the commercial banks.

1/Annual closing of accounts .

2/ Primary liquidity is defined as the sum of cash, balances on settlement accounts with BNB, and the minimum reserves over the deposit base.

3/ Secondary liquidity is defined as primary liquidity plus the balances on settlement accounts with other commercial banks, overnight bank deposits, and government securities with maturity of up to 3 months.

4/ Exposures to financial institutions and to NFI and other clients.

Table A34. Bulgaria: Consolidated Income Statement of the Banking System, 2003-05

	2003				2004				2005			
	Mar.	Jun.	Sep.	Dec. 1/	Mar.	Jun.	Sep.	Dec. 1/	Mar.	Jun.	Sep.	Dec. 1/
	(In millions of leva, cumulative)											
Interest Income	223	466	726	1,015	300	639	1,002	1,408	430	907	1,406	1,961
on Banks and Other Financial Institutions	17	32	46	60	13	28	47	69	28	58	92	128
on Loans and Advances to Non-Financial Institutions and other Clients	172	358	564	799	246	526	829	1,173	360	763	1,179	1,641
Income on Investment Securities	34	76	115	153	41	83	125	165	42	85	133	190
Divident income	0	0	2	2	0	1	1	1	0	0	2	2
Interest Expense	59	121	188	261	78	161	257	365	130	275	431	599
on Deposits by Banks and Other Financial Institutions	9	18	26	38	12	28	44	62	28	62	95	128
on Deposits by Non-Financial Institutions and Other Clients	44	90	141	194	53	108	169	235	78	163	258	359
on Borrowings	6	13	20	29	12	25	44	68	24	50	78	112
Net Interest Income	164	346	538	753	222	477	744	1,043	299	632	975	1,362
Operating Income/Loss Before Tax and Extraordinary Items	152	263	349	380	142	275	409	496	157	344	555	651
Other Non-Interest Income	65	143	233	329	94	202	312	399	124	265	409	550
Overhead Expenses	160	331	507	721	189	397	616	892	243	498	752	1,100
Net Profit/Loss	125	218	294	319	114	224	335	421	129	277	462	573
Revaluation Extraordinary Gain/Loss	9	18	30	36	-1	2	5	27	-6	-19	-15	22
Profit/Loss Before Taxation	161	281	379	416	141	277	415	523	151	325	540	674

Source: Bulgarian National Bank.
1/Annual closing of accounts.

Table A35. Bulgaria: Bank Market Structure, 2001–05

	2001	2002	2003	2004	2005
	(In millions of leva unless indicated otherwise)				
Banking system					
Total assets	12,221	14,557	17,323	24,870	32,886
of which: three largest banks	5,634	6,296	7,031	9,017	11,086
Total deposits	9,555	11,282	13,602	19,530	25,428
of which: three largest banks	4,598	5,027	5,707	7,390	8,522
Total private credit	3,475	4,926	9,355	13,776	18,341
of which: three largest banks	784	1,194	3,233	5,040	6,685
Capital and reserves	1,655	1,936	2,277	2,732	3,463
of which: three largest banks	811	964	1,149	1,287	1,559
Number of institutions	35	34	35	35	34
Group I (large banks)					
Total assets	8,722	10,746	12,730	18,090	24,217
Total deposits	7,006	8,425	10,199	14,379	18,647
Total private credit	1,922	3,287	6,831	10,189	13,701
Capital and reserves	1,215	1,465	1,752	2,014	2,574
Number of institutions	9	10	10	10	10
Group II (medium & small banks)					
Total assets	2,506	2,924	3,669	4,950	6,878
Total deposits	1,791	2,077	2,564	3,434	5,114
Total private credit	971	1,081	1,931	2,801	3,583
Capital and reserves	412	438	500	650	801
Number of institutions	19	18	19	19	18
Group III (foreign branches)					
Total assets	993	887	924	1,829	1,791
Total deposits	758	780	839	1,717	1,667
Total private credit	582	557	594	786	1,057
Capital and reserves	28	33	24	68	88
Number of institutions	7	6	6	6	6
	(In percent of total banking sector)				
3 largest banks					
Total assets	46.1	43.3	40.6	36.3	33.7
Total deposits	48.1	44.6	42.0	37.8	33.5
Total private credit	37.6	34.5	32.9	36.6	36.4
Capital and reserves	28.4	33.8	54.0	47.1	45.0
Group I (large banks)					
Total assets	71.4	73.8	73.5	72.7	73.6
Total deposits	73.3	74.7	75.0	73.6	73.3
Total private credit	55.3	66.7	73.0	74.0	74.7
Capital and reserves	73.4	75.7	76.9	73.7	74.3
Group II (medium & small banks)					
Total assets	20.5	20.1	21.2	19.9	20.9
Total deposits	18.7	18.4	18.9	17.6	20.1
Total private credit	27.9	21.9	20.6	20.3	19.5
Capital and reserves	24.9	22.6	22.0	23.8	23.1
Group III (foreign branches)					
Total assets	8.1	6.1	5.3	7.4	5.4
Total deposits	7.9	6.9	6.2	8.8	6.6
Total private credit	16.7	11.3	6.3	5.7	5.8
Capital and reserves	1.7	1.7	1.1	2.5	2.6

Source: Bulgarian National Bank.

Table A36. Bulgaria: Sectoral Distribution of Commercial Banks' Loans Registered in the Credit Registry, 2004–05 (In millions of leva)

	2004		2005	
	Total	Percent	Total	Percent
Consumer loans	3,888	28.6	6,277	34.2
Agriculture and forestry	413	3.0	479	2.6
Mining	92	0.7	116	0.6
Manufacturing	2,398	17.6	2,767	15.1
Energy and energy resources	370	2.7	345	1.9
Building	358	2.6	683	3.7
Trade, maintenance and technical equipment	3,382	24.9	4,253	23.2
Hotels and restaurants	620	4.6	740	4.0
Transport, warehousing and communications	480	3.5	546	3.0
Financial intermediaries	209	1.5	181	1.0
Real estate	633	4.7	897	4.9
State government and defense	20	0.1	30	0.2
Education	4	0.0	7	0.0
Healthcare and social activities	53	0.4	90	0.5
Other activities	656	4.8	947	5.2
Exterritorial organizations and agencies	11	0.1	7	0.0
TOTAL	13,586	100.0	18,365	100.0

Source: Bulgarian National Bank Credit Registry.

Table A37. Bulgaria: Financial Sector Structure, 2001–05

	2001	2002	2003	2004	2005
			(Number of institutions)		
Banks	35	34	35	35	34
Foreign-owned banks	25	24	25	25	24
Domestic banks	10	10	10	10	10
Private banks	6	7	8	8	8
Public banks	4	3	2	2	2
Group I (large banks)	9	10	10	10	10
Group II (medium & small banks)	19	18	19	19	18
Group III (foreign branches)	7	6	6	6	6
Non-bank financial institutions					
Securities firms	97	97	108	93	88
Finance companies	63	67	87	62	59
Collective investment schemes 1/	3	4	5	9	26
Insurance companies	32	32	31	31	31
General (non-life) insurance	20	20	20	20	19
Life insurance	12	12	11	11	12
Pension funds 2/	8	8	8	8	8
			(Assets in millions of leva)		
Total financial sector	13,112	15,718	18,951	27,494	36,686
Banks	12,221	14,557	17,324	24,870	32,886
Group I (large banks)	8,722	10,746	12,716	18,090	24,217
Group II (medium & small banks)	2,506	2,924	3,679	4,950	6,878
Group III (foreign branches)	993	887	929	1,829	1,791
Nonbank financial institutions	891	1,161	1,627	2,625	3,801
Securities firms 3/ 4/	-	-	323	820	1,323
Finance companies	0	0	0	0	0
Collective investment schemes	11	13	18	56	94
Insurance companies	691	811	801	947	1,253
General (non-life) insurance	462	572	567	675	900
Life insurance	229	239	233	272	353
Helth-insurance companies	-	-	-	14	18
Pension funds	189	337	486	787	1,112
			(Assets in percent of total)		
Banks	93.2	92.6	91.4	90.5	89.6
Group I (large banks)	66.5	68.4	67.1	65.8	66.0
Group II (medium & small banks)	19.1	18.6	19.4	18.0	18.7
Group III (foreign branches)	7.6	5.6	4.9	6.7	4.9
Nonbank financial institutions	6.8	7.4	8.6	9.5	10.4
Securities firms 3/	-	-	1.7	3.0	3.6
Finance companies	0.0	0.0	0.0	0.0	0.0
Collective investment schemes	0.1	0.1	0.1	0.2	0.3
Insurance companies	5.3	5.2	4.2	3.4	3.4
General (non-life) insurance	3.5	3.6	3.0	2.5	2.5
Life insurance	1.7	1.5	1.2	1.0	1.0
Helth-insurance companies	-	-	-	0.1	0.1
Pension funds	1.4	2.1	2.6	2.9	3.0

Sources: Bulgarian National Bank, and Financial Supervision Commission.

1/ Under the Bulgarian legislation the CIS are open-end investment companies, closed-end investment companies and contractual funds.

2/ Under the Bulgarian legislation each pension company manages up to 3 pension funds, one fund for mandatory pension insurance, one fund for occupational pension insurance and one fund for voluntary pension insurance. The data refers to the number of pension companies.

3/ The Financial Supervision Commission (FSC) has no consolidated data on securities firms for 1999-2002.

4/ Total assets of non-banking investment intermediaries (in due form of valuation of the Ordinance 6 on the capital adequacy and liquidity of the investment intermediaries).

Table A38. Bulgaria: Non-Bank Financial Sector, 2001–05
(In millions of leva unless specified otherwise)

	2001	2002	2003	2004	2005
Insurance sector					
Number of companies	32	32	31	31	31
Non-life	20	20	20	20	19
Life	12	12	11	11	12
of which : majority foreign-owned	14	15	16	16	16
Non-life	10	10	10	10	10
Life	4	5	5	6	6
Total assets	691	811	801	947	1,253
Non-life	462	572	567	675	900
Life	229	239	233	272	353
Total loans	19	16	5	10	7
Non-life	1	0	0	3	0
Life	18	16	5	7	7
Assets (in percent of GDP)	2.3	2.5	2.3	2.5	3.0
Non-life	1.6	1.8	1.6	1.8	2.1
Life	0.8	0.7	0.7	0.7	0.8
Expenses 1/					
Non-life	749	849	1,118	1,388	1,574
Life	136	207	221	249	335
Income 2/					
Non-life	750	863	1,135	1,432	1,603
Life	128	206	167	250	319
Premium income	478	616	666	834	1,071
Non-life	391	467	592	733	921
Life	87	149	75	101	150
Life insurance penetration rate 3/	2	2	2	2	3
Pension funds					
Number of funds 4/	8	8	8	8	8
Total assets	187	332	511	787	1,112
Mandatory		42	114	261	441
Occupational	52	95	144	201	253
Voluntary	135	196	253	325	418
Assets (in percent of GDP)	0.6	1.0	1.5	2.1	2.7
Average rate of return on assets					
Mandatory	-	14	11	11	9
Occupational	-	6	10	11	10
Voluntary	-	9	11	10	10
Number of insured persons (in thousands)	597	642	2,295	2,716	2,972
Mandatory	-	2	1,614	2,005	2,240
Occupational	145	155	165	176	182
Voluntary	452	485	516	535	550
Securities sector					
Securities firms					
Number of securities firms	65	70	108	93	88
Assets of securities firms	-	-	323	820	1,323
Investment firms					
Number of investment firms and contractual funds	3	4	5	9	26
Assets of investment firms	11	13	18	56	94
Assets of investment firms (in percent of GDP)	0.0	0.0	0.1	0.1	0.2
Bulgarian Stock Exchange (BSE)					
Number of listed companies on the official market	30	31	35	34	34
Number of companies admitted for trading on unofficial market	372	325	303	307	309
Turnover on BSE	141	359	653	1,011	3,183
Stock exchange capitalization	1,104	1,375	2,722	4,033	8,434
Stock exchange capitalization (in percent of GDP)	3.7	4.3	7.9	10.5	20.1
Stock exchange index value 5/	119	183	454	625	826

Source: Financial Supervision Commission.
1/ Total technical expenses.
2/ Total technical income.
3/ The ratio of gross premium income to GDP.
4/ Under the Bulgarian legislation each pension company manages up to 3 pension funds, one fund for mandatory pension insurance, one fund for occupational pension insurance and one fund for voluntary pension insurance. The data refers to the number of pension companies.
5/ Base=100 on October 17, 2000.

Table A39: Bulgaria. Developments in the Insurance sector, 2001-05
(In millions of leva unless specified otherwise)

	2001	2002	2003 December	2004 December	2005 March	2005 June	2005 September	2005 December
Insurance sector								
Number of companies	32	31	31	31	31	31	32	31
Non-life	20	20	20	20	20	20	21	19
Life	12	11	11	11	11	11	11	12
of which : majority foreign-owned	14	15	17	17	18	19	19	20
Non-life	10	10	11	11	11	12	12	12
of which : majority foreign-owned								
Life	4	5	6	6	7	7	7	8
of which : majority foreign-owned	5	6						
of which : majority-owned by banks	0	0	0	0	0	0	0	0
of which : majority-owned by the government	3	1	1	1	1	1	1	1
Non-life	2	1	1	1	1	1	1	1
Life	1	0	0	0	0	0	0	0
Balance sheet information								
Total assets	691	811	801	947	1,034	1,097	1,122	1,226
Non-life	462	572	567	675	741	785	794	873
Life	229	239	233	272	292	312	328	352
Total loans, other than loans to commercial banks	19	16	5	10	6	7	26	7
Non-life	1	0	0	3	0	0	19	0
Life	18	16	5	7	6	7	7	7
Deposited with or lent to commercial banks	74	67	113	132	203	166	172	169
Non-life	62	59	102	104	169	129	133	132
Life	12	8	11	28	34	37	39	37
Investments in government securities	107	139	158	211	222	276	260	307
Non-life	52	67	91	148	172	202	181	217
Life	54	71	67	63	50	75	79	90
Investments in other assets	492	588	524	594	603	649	664	742
Non-life	347	445	374	420	401	455	462	524
Life	145	143	150	174	202	194	203	218
Investments outside Bulgaria	0	0	0	0	0	0	0	1
Life	691		0	0	0	0	0	1
Total paid up capital of insurance companies	176	188	201	210	213	218	220	225
Non- life	119	129	140	147	150	155	156	160
Life	58	58	61	63	63	63	64	65
Other liabilities to commercial banks	0	1	1	1	1	1	1	2
Non-life	0	1	0	0	1	1	1	1
Life	0	0	0	1	0	0	0	1
Other liabilities to the government 1/	7	54	52	51	8	8	5	8
Non-life	6	45	48	48	7	7	4	8
Life	1	9	4	3	1	1	1	1

Source: Financial Supervision Commission.
1/ Data after December 2004 represents liabilities to the government. Data prior to December 2004 includes government and other liabilities.

Table A40. Bulgaria: Developments in the Pension Fund Sector, 2003–05
(In millions of leva)

Indicators	2003 December	2004 December	2005 December
Pension funds			
Number of funds	8	8	8
Mandatory /Universal/			
Sum of investments	110	261	434
Of which: lend to or deposited with banks	14	49	75
Of which: invested in government securities	79	149	238
Of which: invested in securities traded at regulated financial markets	16	29	75
- shares	...	11	31
- corporate bonds	...	18	44
Of which: invested in municipal bonds	0	2	3
Of which: invested in mortgage bonds	0	29	35
Of which: invested in real estate	0	1	1
Of which: invested in derivatives	0	0	0
Of which: invested abroad	0	2	6
Sum of pecuneary means /cash/	...	1	1
Sum of current receivables	...	1	7
Sum of balance assets	...	263	442
Sum of current liabilities	...	2	1
Sum of net assets	114	261	441
Sum of investments	140	204	250
Of which: lend to or deposited with banks	22	38	41
Of which: invested in government securities	96	117	140
Of which: invested in securities traded at regulated financial markets	19	20	43
- shares	...	5	20
- corporate bonds	...	15	23
Of which: invested in municipal bonds	1	2	2
Of which: invested in mortgage bonds	0	23	20
Of which: invested in real estate	1	3	0
Of which: invested in derivatives	0	0	0
Of which: invested abroad	0	0	3
Sum of pecuneary means /cash/	...	0	0
Sum of current receivables	...	1	5
Sum of balance assets	...	205	255
Sum of current liabilities	...	4	2
Sum of net assets	144	201	253
Voluntary			
Sum of investments	239	322	398
Of which: lend to or deposited with banks	52	65	93
Of which: invested in government securities	140	172	182
Of which: invested in securities traded at regulated financial markets	36	34	67
- shares	...	10	29
- corporate bonds	...	24	38
Of which: invested in municipal bonds	1	1	2
Of which: invested in mortgage bonds	0	38	45
Of which: invested in real estate	8	9	6
Of which: invested in derivatives	0	0	0
Of which: invested abroad	0	2	4
Sum of pecuneary means /cash/	...	4	4
Sum of current receivables	...	0	19
Sum of balance assets	...	326	421
Sum of current liabilities	...	1	3
Sum of net assets	253	325	418
Total sum of investments	...	786	1,082
Total sum of pecuneary means	...	5	5
Total sum of current receivables	...	3	30
Total sum of balance assets	...	794	1,117
Total sum of current liabilities	...	7	5
Total sum of net assets	...	787	1,112
Mandatory	114	261	441
Occupational	144	201	253
Voluntary	253	325	418
Average rate of return on assets 1/			
Mandatory	11	11	9
Occupational	11	11	10
Voluntary	10	10	10
Number of persons covered by the pension plan (in thousand)	2,295	2,716	2,972
Mandatory	1,614	2,005	2,240
Occupational	165	176	182
Voluntary	516	535	550

Source: Financial Supervision Commission.
1/ Annualized weighted average rate of return for 24 months period.

Table A41. Bulgaria: Developments in the Securities Sector, 2004–05
(In millions of leva unless specified otherwise)

	2004 December	2005 March	2005 June	2005 September	2005 December
Securities sector					
Securities firms					
Number of securities firms	93	90	88	88	88
Of which: majority owned by commercial banks	31	30	28	29	29
Assets of securities firms	820	1,339	1,406	1,381	1,323
Investment companies					
Assets of investment companies					
Of which : pecunaery means	8	16	23	22	26
- deposited with commercial banks	*5*	*11*	*12*	*19*	22
Of which : invested in government securiteis	6	9	12	10	8
Of which : invested in shares	8	15	16	21	27
Of which : invested in corporate bonds	5	11	14	20	23
Of which: invested in municipal bonds	0	0	0	1	2
Of which: invested in mortgage bonds	2	2	4	5	6
Of which : invested in compensation instruments	2	0	0	0	0
Of which: invested in eurobonds	1	1	1	1	1
Of which : invested abroad	0	0	0	1	1
Non-financial assets	0	1	1	0	1
Other assets					
Sum of balance assets	34	57	73	82	95
Special purpose vehicles (SPV)					
Number of special purpose vehicle	5	7	9	10	13
Of which: specialised in real estates securitisation	...	...	1	1	1
Of which: specialised in receivables securitisation	...	...	8	9	12
Assets of special purpose vehicle	...	...			
Of which: investment property	...	...	*23*	*26*	62
Of which: investment property in process of construction	...	...	*1*	*0*	0
Of which: pecunaery means	...	...	*41*	*40*	60
Of which: receivables	...	...	*1*	*2*	4
Other assets	...	...	*1*	*1*	3
Sum of balance assets	...	...	67	69	129
Assets of special purpose vehicle					
Of which: pecunaery means	...	...	*0*	*1*	0
Of which: interests receivables	...	...	*0*	*0*	0
Of which: short-term commercial loans receivables (up to 1 year)	...	...	*1*	*1*	1
Of which: long-term commercial loans receivables (over 1 year)	...	...	*5*	*5*	4
Sum of balance assets	...	...	6	6	5
Bulgarian Stock Exchange (BSE)					
Number of listed companies on the official market	30	31	35	34	34
Number of companies admitted for trading on unofficial market	372	325	303	307	309
Turnover on BSE	141	359	653	1,011	3,183
Stock exchange capitalization	1,104	1,375	2,722	4,033	8,434
Stock exchange index SOFIX value	119	183	454	625	826

Source: Financial Supervision Commission.

Table A42. Bulgaria: Claims Under Lease Contracts–Stocks
(In thousands of leva)

	9/30/2005	12/31/2005	3/31/2006 [1/]
By type of asset	992,209	1,246,422	1,443,839
Financial lease	961,287	1,208,009	1,401,654
Machinery and industrial equipment	239,845	301,327	390,136
Computers and other IT eqiupment	7,855	6,864	7,140
Transport and commercial vehicles	323,058	351,644	413,594
Cars	324,369	402,060	451,178
Real estate	37,226	96,680	100,680
Other	28,934	49,434	38,924
Operational lease	30,922	38,413	42,185
Machinery and industrial equipment	1,094	1,267	496
Computers and other IT eqiupment	479	469	384
Transport and commercial vehicles	8,412	8,992	11,301
Cars	20,936	26,581	30,004
Real estate	0	738	0
Other	1	366	0
By maturity	992,209	1,246,422	1,443,839
Financial lease	961,287	1,208,009	1,401,654
Regular	925,534	1,176,155	1,349,962
Up to 1 year	107,757	125,661	104,208
Over 1 up to 5 year	791,789	947,374	1,137,502
Over 5 years	25,988	103,121	108,252
Overdue	35,753	31,853	51,691
Operational lease	30,922	38,413	42,185
Up to 1 year	14	830	66
Over 1 up to 5 year	30,908	37,583	42,119
Over 5 years	0	0	0
Financial lease by sectors and main industry	961,287	1,208,009	1,401,654
Resident sector	961,287	1,207,728	1,401,537
Nonfinancial corporations	797,939	996,927	1,151,479
Agriculture, hunting, fishing, forestry	17,728	21,736	22,822
Mining and quarrying	12,315	13,945	14,678
Manufacturing	138,610	189,907	227,522
Electricity, gas and water supply	4,610	3,930	6,777
Construction	78,733	109,553	138,139
Trade and repair of motor vehicles, motorcycles; personal and household goods appliances	203,772	227,044	261,054
Hotels and restaurants	27,579	77,130	79,627
Transport, storage and communication	139,421	154,660	168,525
Real estate, renting and other business activities	16,528	18,745	40,669
Education	843	3,407	3,661
Health and social work	3,770	5,397	7,087
Other utilities, social and personal services	154,028	171,472	180,919
Monetary financial institutions	2,878	2,817	3,388
Other financial corporations	1,725	4,244	8,519
Government sector	1,469	1,608	542
Households and NPISHs	157,276	202,132	237,609
Nonresident sector	0	281	117

Source: Reports from leasing companies.
1/ Preliminary data.

Table A43. Bulgaria: Summary Balance of Payments, 2001–05
(In millions of euros unless specified otherwise)

	2001	2002	2003	2004	2005
CURRENT ACCOUNT	-855	-402	-972	-1,131	-2,531
Trade balance	-1,778	-1,878	-2,426	-2,953	-4,369
Exports (f.o.b.)	5,714	6,063	6,668	7,985	9,454
y-o-y change (in percent)	9	6	10	20	18
Imports (f.o.b.)	-7,493	-7,941	-9,094	-10,938	-13,823
y-o-y change (in percent)	15	6	15	20	26
Services, net	331	505	553	692	667
Of which: Exports of travel services	1,119	1,241	1,499	1,789	1,932
Income, net	30	404	288	238	247
Of which: Income to direct investors	-166	-237	-493	-609	-533
Current transfers, net	562	566	613	891	924
CAPITAL AND FINANCIAL ACCOUNT	755	1,843	2,325	2,911	2,874
Capital transfers, net	0	0	0	0	-1
Foreign direct investment, net	893	951	1,827	2,244	1,856
Of which: Privatization receipts	21	144	312	936	0
Portfolio investment, net	94	-99	-191	-563	-757
Other investment, net	-232	991	689	1,230	1,776
General government	-343	-144	-92	-20	-61
Domestic banks	-31	532	621	445	1,099
Other private sector	142	603	160	806	738
Errors and omissions	526	-723	-722	-380	226
OVERALL BALANCE	425	717	630	1,400	569
FINANCING	-425	-717	-630	-1,400	-569
Gross international reserves (increase: -) 1/	-318	-578	-817	-1,493	-324
Use of Fund credit, net	-185	-155	35	-29	-361
Purchases	150	116	130	62	0
Repurchases	-336	-270	-95	-91	-361
Exceptional financing, net	78	15	151	123	116
MEMORANDUM ITEMS					
Gross international reserves (stock, e.o.p.) 2/	4,063	4,575	5,309	6,770	7,370
In months of prospective GNFS imports	5.2	5.6	5.7	6.0	5.3
In percent of short-term debt	373	302	330	257	207
Current account + FDI	37	549	855	1,112	-675
(in percent of GDP)	0.2	3.3	4.8	5.7	-3.1
Current account (in percent of GDP)	-5.6	-2.4	-5.5	-5.8	-11.8
Merchandise trade account (in percent of GDP)	-11.7	-11.4	-13.7	-15.1	-20.4
Merchandise exports (in percent of GDP)	37.6	36.7	37.8	40.8	44.1
Merchandise imports (in percent of GDP)	49.3	48.0	51.5	55.9	64.5
Gross external debt (stock, e.o.p.)	11,935	10,769	10,641	12,572	14,530
(In percent of annual GDP)	78.6	65.1	60.2	64.2	67.7
Public	9,698	7,961	7,048	6,428	5,148
Private	2,236	2,808	3,593	6,144	9,383
Short-term debt (in percent of total debt, e.o.p.)	9.1	14.1	14.3	21.0	24.5
Net external debt (in percent of GDP) 3/	33.3	23.4	19.5	15.8	17.8
GDP	15,184	16,533	17,663	19,570	21,448

Sources: Bulgarian National Bank, and Fund staff estimates.

1/ Excluding valuation changes.
2/ Including valuation changes.
3/ External debt minus gross foreign assets of the banking system.

Table A44. Bulgaria: Current Account, 2001–05

	2001	2002	2003	2004	2005
	(In millions of euros)				
Current Account	-855	-402	-972	-1,131	-2,531
Goods, services, and income, net	-1,417	-968	-1,585	-2,023	-3,455
Credit	8,934	9,540	10,541	12,454	14,077
Debit	-10,351	-10,508	-12,126	-14,477	-17,532
Goods, net	-1,778	-1,878	-2,426	-2,953	-4,369
Credit	5,714	6,063	6,668	7,985	9,454
Debit	-7,493	-7,941	-9,094	-10,938	-13,823
Services, net	331	505	553	692	667
Credit	2,429	2,455	2,729	3,262	3,444
Transportation	719	700	733	825	896
Travel	1,119	1,241	1,499	1,789	1,932
Other services	591	514	497	648	616
Debit	-2,098	-1,950	-2,176	-2,569	-2,777
Transportation	-899	-598	-679	-861	-968
Travel	-628	-812	-911	-1,075	-1,040
Other services	-571	-539	-586	-634	-770
Income, net	30	404	288	238	247
Credit	791	1,022	1,144	1,208	1,178
Monetary authorities	113	126	147	118	171
General government	82	64	48	38	15
Banks	77	56	26	39	87
Other sectors	519	776	924	1,012	905
Debit	-760	-617	-857	-969	-931
Monetary authorities	-5	-1	0	0	0
General government	-499	-310	-295	-274	-273
Banks	-197	-115	-117	-235	-284
Other sectors	-60	-191	-444	-461	-374
Current transfers, net	562	566	613	891	924
Credit	674	677	762	1,051	1,098
General government	202	145	149	236	332
Other sectors	472	532	613	815	765
Debit	-112	-111	-150	-160	-173
General government	-46	-16	-28	-26	-24
Other sectors	-66	-95	-122	-133	-149
Memorandum items:		(In percent of GDP)			
Goods, services, and income, net	-9.3	-5.9	-9.0	-10.3	-16.1
Goods, net	-11.7	-11.4	-13.7	-15.1	-20.4
Services, net	2.2	3.1	3.1	3.5	3.1
Income, net	0.2	2.4	1.6	1.2	1.2
Current transfers, net	3.7	3.4	3.5	4.6	4.3

Sources: Bulgarian National Bank, and Fund staff estimates.

Table A45. Bulgaria: Commodity Composition of Exports, 2001-05

	In millions of euros					In percent of total exports				
	2001	2002	2003	2004	2005	2001	2002	2003	2004	2005
Consumer goods	1,917	2,134	2,441	2,623	2,729	33.5	35.2	36.6	32.9	28.9
Food	219	247	299	349	405	3.8	4.1	4.5	4.4	4.3
Tobacco	21	16	17	23	17	0.4	0.3	0.3	0.3	0.2
Beverages	77	75	73	72	84	1.4	1.2	1.1	0.9	0.9
Clothing and footwear	1,140	1,258	1,458	1,549	1,540	20.0	20.8	21.9	19.4	16.3
Medicines and cosmetics	180	168	163	153	166	3.1	2.8	2.4	1.9	1.8
Furniture and household appliances	147	211	246	279	315	2.6	3.5	3.7	3.5	3.3
Others	132	159	184	198	201	2.3	2.6	2.8	2.5	2.1
Raw materials	2,331	2,535	2,759	3,478	4,056	40.8	41.8	41.4	43.6	42.9
Iron and steel	396	393	541	805	763	6.9	6.5	8.1	10.1	8.1
Other metals	475	470	535	747	943	8.3	7.8	8.0	9.3	10.0
Chemicals	226	216	229	255	280	3.9	3.6	3.4	3.2	3.0
Plastics and rubber	144	153	172	199	250	2.5	2.5	2.6	2.5	2.6
Fertilizers	97	63	79	58	89	1.7	1.0	1.2	0.7	0.9
Textiles	206	240	278	294	308	3.6	4.0	4.2	3.7	3.3
Raw materials for the food industry	172	321	218	278	409	3.0	5.3	3.3	3.5	4.3
Wood products, paper and paperboard	142	158	197	229	232	2.5	2.6	2.9	2.9	2.4
Cement	33	29	29	23	22	0.6	0.5	0.4	0.3	0.2
Raw tobacco	45	50	50	92	79	0.8	0.8	0.7	1.2	0.8
Others	395	443	430	499	680	6.9	7.3	6.4	6.2	7.2
Investment goods	699	802	912	1,075	1,448	12.2	13.2	13.7	13.5	15.3
Machines and equipment	263	298	310	357	415	4.6	4.9	4.7	4.5	4.4
Electrical machines	82	67	113	96	116	1.4	1.1	1.7	1.2	1.2
Vehicles	36	68	69	84	238	0.6	1.1	1.0	1.0	2.5
Spare parts and equipment	156	171	193	239	316	2.7	2.8	2.9	3.0	3.3
Others	163	199	228	300	363	2.8	3.3	3.4	3.8	3.8
Total non energy commodities	4,947	5,472	6,112	7,176	8,232	86.6	90.3	91.7	89.9	87.1
Mineral fuels, oils and electricity	767	591	557	809	1,222	13.4	9.7	8.3	10.1	12.9
Petroleum products	507	358	385	625	976	8.9	5.9	5.8	7.8	10.3
Others	261	233	172	184	246	4.6	3.8	2.6	2.3	2.6
TOTAL EXPORTS, FOB	5,714	6,063	6,668	7,985	9,454	100.0	100.0	100.0	100.0	100.0

Source: Bulgarian National Bank.

Table A46. Bulgaria: Commodity Composition of Imports, 2001-05

	In millions of euros					In percent of total imports				
	2001	2002	2003	2004	2005	2001	2002	2003	2004	2005
Consumer goods	1,140	1,253	1,476	1,895	2,259	14.0	14.9	15.4	16.3	15.4
Food, drinks and tobacco	209	235	265	306	387	2.6	2.8	2.8	2.6	2.6
Furniture and household appliances	206	251	321	395	470	2.5	3.0	3.3	3.4	3.2
Medicines and cosmetics	286	295	315	425	466	3.5	3.5	3.3	3.7	3.2
Clothing and footwear	50	78	110	120	137	0.6	0.9	1.1	1.0	0.9
Automobiles	214	204	244	385	480	2.6	2.4	2.5	3.3	3.3
Others	176	190	221	263	319	2.2	2.3	2.3	2.3	2.2
Raw materials	3,130	3,266	3,849	4,602	5,284	38.5	38.8	40.1	39.6	36.0
Ores	278	209	313	450	590	3.4	2.5	3.3	3.9	4.0
Iron and steel	165	166	248	459	585	2.0	2.0	2.6	3.9	4.0
Other metals	91	83	96	130	202	1.1	1.0	1.0	1.1	1.4
Textiles	1,061	1,163	1,321	1,357	1,343	13.0	13.8	13.8	11.7	9.1
Wood products, paper and paperboard	189	198	212	248	292	2.3	2.4	2.2	2.1	2.0
Chemicals	207	216	232	257	277	2.5	2.6	2.4	2.2	1.9
Plastics and rubber	319	363	439	553	696	3.9	4.3	4.6	4.8	4.7
Raw materials for the food industry	172	192	198	241	222	2.1	2.3	2.1	2.1	1.5
Raw skins	88	86	101	91	96	1.1	1.0	1.1	0.8	0.7
Raw tobacco	29	31	20	31	15	0.4	0.4	0.2	0.3	0.1
Others	531	560	668	786	963	6.5	6.7	6.9	6.8	6.6
Investment goods	2,038	2,110	2,466	3,085	4,047	25.1	25.1	25.7	26.6	27.6
Machines and equipment	705	810	937	1,052	1,396	8.7	9.6	9.8	9.1	9.5
Electrical machines	357	282	317	350	460	4.4	3.4	3.3	3.0	3.1
Vehicles	453	438	542	837	1,212	5.6	5.2	5.6	7.2	8.3
Spare parts and equipment	273	310	360	414	510	3.4	3.7	3.7	3.6	3.5
Others	249	271	310	432	469	3.1	3.2	3.2	3.7	3.2
Total non energy commodities	6,307	6,630	7,791	9,582	11,589	77.6	78.8	81.1	82.5	78.9
Mineral fuels, oils and electricity	1,821	1,675	1,690	1,942	2,960	22.4	19.9	17.6	16.7	20.2
Fuels	1,611	1,574	1,530	1,726	2,584	19.8	18.7	15.9	14.9	17.6
Crude oil and Natural gas	1,390	1,362	1,302	1,483	2,283	17.1	16.2	13.6	12.8	15.6
Coal	170	162	185	212	258	2.1	1.9	1.9	1.8	1.8
Others	210	101	160	216	377	2.6	1.2	1.7	1.9	2.6
Others	210	101	160	216	377	2.6	1.2	1.7	1.9	2.6
TOTAL IMPORT, CIF	8,128	8,411	9,611	11,620	14,682	100.0	100.0	100.0	100.0	100.0

Source: Bulgarian National Bank.

Table A47. Bulgaria: Direction of Trade, 2001-05 1/
(In percent of total)

	2001		2002		2003		2004		2005	
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
OECD countries 2/	70.7	59.0	72.8	61.1	71.9	62.4	70.4	60.6	67.0	56.3
Of which:										
Austria	1.7	2.0	1.7	2.1	2.0	2.2	2.2	2.4	1.9	2.2
Belgium	4.9	1.5	4.8	1.4	6.1	1.4	5.9	1.4	6.0	1.2
France	5.6	6.0	5.3	5.7	5.1	5.6	4.5	5.3	4.6	4.7
Germany	9.5	15.3	9.5	14.3	10.8	14.3	10.2	14.6	9.8	13.6
Greece	8.8	5.7	9.2	6.0	10.4	6.7	9.9	5.7	9.4	5.0
Italy	15.0	9.6	15.4	11.3	14.0	10.2	13.1	9.8	12.0	9.0
Japan	0.3	1.1	0.2	1.1	0.2	1.3	0.1	1.3	0.1	1.2
Netherlands	1.6	1.8	1.8	2.0	1.5	1.8	1.3	1.7	1.2	1.4
Spain	3.3	1.7	3.4	1.9	2.7	2.2	3.4	2.1	3.3	1.9
Turkey	8.1	3.8	9.3	4.9	9.2	6.1	10.0	6.0	10.5	6.0
United States	5.6	2.6	4.7	2.2	4.5	2.6	4.5	2.2	3.0	2.6
United Kingdom	2.6	2.5	2.9	2.6	2.5	2.5	2.5	2.4	2.2	2.3
Non-OECD countries	29.3	41.0	27.2	38.9	28.1	37.6	29.6	39.4	33.0	43.7
Of which:										
Czech Republic	0.4	1.6	0.5	1.6	0.6	1.6	0.6	1.7	0.5	1.5
Hungary	0.6	1.1	0.7	1.3	0.8	1.2	0.9	1.2	0.8	1.2
Macedonia	2.2	0.3	2.2	0.2	2.1	0.2	2.1	0.4	2.0	0.5
Poland	0.7	1.5	0.7	1.3	0.8	1.4	1.0	1.5	1.1	1.6
Romania	2.5	2.4	2.8	2.0	3.0	2.4	4.0	2.9	3.8	3.7
Russia	2.3	20.0	1.6	14.7	1.4	12.6	1.3	12.6	1.3	15.6
Serbia/Montenegro	4.1	0.3	3.0	0.3	3.3	0.3	3.5	0.4	3.0	0.5
Ukraine	1.2	3.2	0.9	3.1	0.8	3.9	0.8	4.1	0.7	3.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Memorandum items:										
European Union 3/	54.8	49.4	55.7	50.3	56.5	49.6	54.2	48.2	51.6	43.9
CEFTA members 4/	4.8	7.6	5.4	7.3	5.9	7.9	7.1	8.7	7.0	9.2

Source: Bulgarian National Bank.

1/ Imports and exports recorded according to the date at which goods cross the border.
2/ Excluding Czech Republic, Hungary, Poland, and Slovak Republic.
3/ Excluding new entrants (Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovak Republic, Slovenia).
4/ Includes Czech Republic, Hungary, Poland, Romania, Slovak Republic, and Slovenia.

Table A48. Bulgaria: Tourism Indicators, 2001-05

	2001	2002	2003	2004	2005	2001	2002	2003	2004	2005
	(In thousands)					(Percent change)				
Number of tourist arrivals	3,186	3,433	4,048	4,630	4,837	14.4	7.8	17.9	14.4	4.5
Of which:										
European Union	1,133	1,365	1,690	2,484	2,624	23.9	20.5	23.8	47.0	5.7
Of which:										
Greece	388	429	587	751	666	7.0	10.5	36.9	27.9	-11.3
Germany	395	503	559	597	582	39.5	27.4	11.2	6.7	-2.4
United Kingdom	80	122	171	275	374	28.9	52.8	40.3	61.1	36.1
Russia	158	125	150	149	175	19.3	-20.6	19.8	-0.6	17.4
Macedonia	660	640	695	682	581	-2.3	-3.0	8.5	-1.8	-14.8
Serbia and Montenegro	385	554	614	597	534	64.6	43.8	10.8	-2.7	-10.5
Memorandum item:										
Travel receipts (in millions of euros)	1,084	1,203	1,460	1,746	1,888	-7.2	11.0	21.3	19.6	8.1
	(In percent of total)					(Percent change)				
European Union	35.6	39.8	41.7	53.6	54.2	8.3	11.8	5.0	28.5	1.1
Of which:										
Greece	12.2	12.5	14.5	16.2	13.8	-6.5	2.6	16.1	11.8	-15.1
Germany	12.4	14.6	13.8	12.9	12.0	22.0	18.2	-5.7	-6.7	-6.6
United Kingdom	2.5	3.5	4.2	5.9	7.7	12.7	41.8	19.0	40.9	30.3
Russia	5.0	3.7	3.7	3.2	3.6	4.3	-26.4	1.6	-13.1	12.4
Macedonia	20.7	18.6	17.2	14.7	12.0	-14.4	-10.0	-7.9	-14.2	-18.4
FR Yugoslavia	12.1	16.1	15.2	12.9	11.0	29.6	33.5	-6.04	-15.0	-14.4

Source: State Agency for Tourism - Bulgaria.

Table A49. Bulgaria: Financial Account, 2001–05
(In millions of euros)

	2001	2002	2003	2004	2005
Financial Account	755	1,843	2,325	2,911	2,875
Direct investment abroad	-11	-29	-23	166	-256
Direct investment in Bulgaria	903	980	1,851	2,727	1,789
Portfolio investment assets	-25	227	-69	-1	-8
Equity securities	-40	-15	-13	-22	-3
Debt securities	16	243	-56	20	-5
Portfolio investment liabilities	119	-326	-122	-562	-749
Equity securities	-10	-24	-20	1	71
Debt securities	129	-302	-102	-563	-821
Other investment assets	-117	332	229	-753	124
Trade credits	0	-2	0	-157	-29
Loans	18	-18	-29	-82	-30
General Government	0	0	0	0	0
Banks	0	-44	-31	-29	-18
Other sectors	18	26	2	-53	-13
Currency and deposits	-108	333	266	-611	-352
General Government	0	0	0	18	0
Banks	-149	346	281	-554	-340
Other sectors	41	-13	-15	-75	-12
Other forex deposits	0	0	0	0	0
Other assets	-27	18	-8	97	535
Other	0	0	0	0	0
Other investment liabilities	-115	659	460	1,983	1,652
Trade credits	-130	204	-83	88	156
Loans	-193	161	197	1,362	1,044
Monetary authorities	0	0	0	0	0
General Government	-340	-144	-92	-38	-61
Banks	9	42	53	405	477
Other sectors	138	263	236	995	628
Currency and deposits	47	98	259	514	385
Other liabilities	161	196	88	20	67
Other	0	0	0	0	0

Source: Bulgarian National Bank.

Table A50. Bulgaria: Foreign Direct Investment by Sector and Country of Origin, 2001–05
(In percent of total)

	2001	2002	2003	2004	2005
Foreign direct investment by sector:					
Financial intermediation	15.1	14.8	23.9	8.8	34.4
Transport, storage and communication	27.5	23.1	8.2	15.6	9.5
Wholesale and retail trade; repair of motor vehicles, motorcyc	14.5	25.2	23.4	19.4	8.7
Manufacturing	31.7	8.4	28.3	16.8	8.1
Electricity, gas and water supply	0.3	7.4	0.4	25.9	0.5
Hotels and restaurants	2.2	0.9	1.3	1.0	2.9
Real estate, renting and business activities	1.6	6.2	9.0	8.0	22.7
Construction	2.1	3.4	0.3	2.9	9.6
Other	4.9	10.5	5.1	1.8	3.7
Total	100.0	100.0	100.0	100.0	100.0
Foreign direct investment by country of origin:					
Austria	11.5	17.8	11.4	26.4	24.1
Belgium and Luxembourg	7.5	0.0	1.5	3.7	5.3
Cyprus	2.2	-0.9	5.8	3.2	0.5
France	1.9	1.0	1.1	1.8	1.4
Germany	8.3	9.4	5.2	10.4	4.1
Greece	29.6	24.2	10.7	7.4	10.1
Hungary	0.1	1.1	18.1	1.8	4.2
Italy	18.0	2.8	4.8	3.1	5.0
Korea	-1.1	0.0	0.0	0.0	0.0
Netherlands	9.9	3.4	11.6	13.3	-7.0
Spain	0.6	0.0	0.2	0.3	2.0
Switzerland	4.1	4.0	6.9	4.1	10.9
Turkey	-1.2	1.7	-0.3	2.1	1.3
United Kingdom	2.5	0.1	4.6	2.0	14.5
United States	5.5	6.2	6.1	4.2	3.0
Other countries	0.7	29.2	12.4	16.2	20.6
Total	100.0	100.0	100.0	100.0	100.0
Foreign direct investment by capital type:					
Equity capital	69.7	65.0	58.8	68.2	42.0
Of which: from privatization	2.4	15.0	17.4	35.3	0.0
Other capital	29.5	25.7	29.2	15.9	46.3
Reinvested earnings	0.8	9.3	11.9	15.9	11.7
Total	100.0	100.0	100.0	100.0	100.0
Memorandum items:					
Inward direct investment (in millions of euros)	903	980	1851	2727	1789
Bulgarian direct investment abroad (in millions of euros)	11	29	23	-166	256

Source: Bulgarian National Bank.

Table A51. Bulgaria: External Debt Stock, 2001–05
(In millions of euros)

Gross external Debt By Institutional Sector	2001	2002	2003	2004	2005
GROSS EXTERNAL DEBT (I+II+III+IV+V)	11,935	10,769	10,641	12,572	14,530
I. General Government	9,143	7,446	6,624	5,825	4,398
Short-term	0	0	0	0	0
Money Market Instruments	0	0	0	0	0
Loans	0	0	0	0	0
Trade credits	0	0	0	0	0
Other debt liabilities	0	0	0	0	0
Arrears	0	0	0	0	0
Other	0	0	0	0	0
Long-term	9,143	7,446	6,624	5,825	4,398
Bonds and Notes	5,659	4,683	3,929	3,145	2,114
Bonds and Notes held by residents	-62	-321	-347	-289	-446
Loans	3,547	3,084	3,042	2,968	2,729
Trade credits	0	0	0	0	0
Other debt liabilities	0	0	0	0	0
II. Monetary Authorities	74	20	0	0	0
Short-term	0	0	0	0	0
Money Market Instruments	0	0	0	0	0
Loans	0	0	0	0	0
Currency and deposits	0	0	0	0	0
Other debt liabilities	0	0	0	0	0
Arrears	0	0	0	0	0
Other	0	0	0	0	0
Long-term	74	20	0	0	0
Bonds and Notes	0	0	0	0	0
Loans	74	20	0	0	0
Currency and deposits	0	0	0	0	0
Other debt liabilities	0	0	0	0	0
III. Banks	292	416	790	1,692	2,522
Short-term	242	311	602	1,126	1,695
Money Market Instruments	0	0	0	0	0
Loans	12	13	10	26	157
Currency and deposits	230	298	497	999	1,397
Other debt liabilities	0	0	96	102	142
Arrears	0	0	0	0	0
Other	0	0	96	102	142
Long-term	50	105	188	566	827
Bonds and Notes	0	0	0	6	7
Loans	50	105	188	560	820
Currency and deposits	0	0	0	0	0
Other debt liabilities	0	0	0	0	0
IV. Other Sectors	1,762	2,209	1,873	3,012	3,920
Short-term	845	1,204	923	1,301	1,869
Money Market Instruments	0	0	0	0	0
Loans	110	150	268	502	856
Trade credits	736	1,055	654	799	1,012
Other debt liabilities	0	0	0	0	0
Arrears	0	0	0	0	0
Other	0	0	0	0	0
Long-term	917	1,005	950	1,711	2,052
Bonds and Notes	0	0	3	3	3
Loans	851	954	947	1,708	2,049
Trade credits	0	0	0	0	0
Other debt liabilities	65	50	0	0	0
V. Direct investment: Intercompany Lending	663	677	1,354	2,042	3,690
Debt liabilities to affiliated enterprises	0	0	6	7	3
Arrears			0	0	0
Other	0	0	6	7	3
Debt liabilities to direct investors	663	677	1,348	2,036	3,687
Arrears			0	0	0
Other	663	677	1,348	2,036	3,687

Source: Bulgarian National Bank.

Table A52. Bulgaria: External Debt Service, 2002–05
(In millions of euros)

	Amortizations				Interest				Total			
Debt Service By Institutional Sector	2002	2003	2004	2005	2002	2003	2004	2005	2002	2003	2004	2005
GROSS EXTERNAL DEBT (I+II+III+IV+V)	1,027	967	2,258	5,298	377	367	353	411	1,403	1,333	2,611	5,709
I. General Government	561	359	1,136	2,077	315	296	273	272	876	655	1,409	2,350
Short-term	0	0	0	0	0	0	0	0	0	0	0	0
Money Market Instruments	0	0	0	0	0	0	0	0	0	0	0	0
Loans	0	0	0	0	0	0	0	0	0	0	0	0
Trade credits	0	0	0	0	0	0	0	0	0	0	0	0
Other debt liabilities	0	0	0	0	0	0	0	0	0	0	0	0
Arrears	0	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0	0
Long-term	561	359	1,136	2,077	315	296	273	272	876	655	1,409	2,350
Bonds and Notes	112	95	654	1,259	190	223	203	191	302	318	858	1,450
Bonds and Notes held by residents	0	-4	182	212	0	-21	-18	-17	0	-25	164	195
Loans	449	268	299	607	125	94	89	98	574	362	388	705
Trade credits	0	0	0	0	0	0	0	0	0	0	0	0
Other debt liabilities	0	0	0	0	0	0	0	0	0	0	0	0
									0	0	0	0
II. Monetary Authorities	51	19	0	0	1	0	0	0	52	20	0	0
Short-term	0	0	0	0	0	0	0	0	0	0	0	0
Money Market Instruments	0	0	0	0	0	0	0	0	0	0	0	0
Loans	0	0	0	0	0	0	0	0	0	0	0	0
Currency and deposits	0	0	0	0	0	0	0	0	0	0	0	0
Other debt liabilities	0	0	0	0	0	0	0	0	0	0	0	0
Arrears	0	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0	0
Long-term	51	19	0	0	1	0	0	0	52	20	0	0
Bonds and Notes	0	0	0	0	0	0	0	0	0	0	0	0
Loans	51	19	0	0	1	0	0	0	52	20	0	0
Currency and deposits	0	0	0	0	0	0	0	0	0	0	0	0
Other debt liabilities	0	0	0	0	0	0	0	0	0	0	0	0
									0	0	0	0
III. Banks	123	301	287	1,376	4	6	18	21	127	306	305	1,397
Short-term	108	269	255	1,201	1	0	4	1	109	269	258	1,202
Money Market Instruments	0	0	0	0	0	0	0	0	0	0	0	0
Loans	8	16	14	32	1	0	4	1	9	16	17	33
Currency and deposits	100	101	119	1,112	0	0	0	0	100	101	119	1,112
Other debt liabilities	0	151	122	57	0	0	0	0	0	151	122	57
Arrears	0	0	0	0	0	0	0	0	0	0	0	0
Other	0	151	122	57	0	0	0	0	0	151	122	57
Long-term	16	32	33	175	3	5	14	20	19	38	47	195
Bonds and Notes	5	10	0	1	0	0	0	0	5	10	0	1
Loans	10	22	33	174	3	5	14	20	13	28	47	195
Currency and deposits	0	0	0	0	0	0	0	0	0	0	0	0
Other debt liabilities	0	0	0	0	0	0	0	0	0	0	0	0
									0	0	0	0
IV. Other Sectors	123	191	584	764	40	46	43	84	164	236	627	848
Short-term	15	46	293	92	3	12	6	4	18	58	299	97
Money Market Instruments	0	0	0	0	0	0	0	0	0	0	0	0
Loans	14	45	293	92	3	12	6	4	17	57	299	97
Trade credits	0	0	0	0	0	0	0	0	0	0	0	0
Other debt liabilities	0	0	0	0	1	1	0	0	1	1	0	0
Arrears	0	0	0	0	1	1	0	0	1	1	0	0
Other	0	0	0	0	0	0	0	0	0	0	0	0
Long-term	109	145	291	672	37	33	37	80	146	178	328	752
Bonds and Notes	0	0	0	0	0	0	0	0	0	0	0	0
Loans	109	145	291	672	37	33	37	80	146	178	328	752
Trade credits	0	0	0	0	0	0	0	0	0	0	0	0
Other debt liabilities	0	0	0	0	0	0	0	0	0	0	0	0
									0	0	0	0
V. Direct investment: Intercompany Lending	168	97	251	1,081	16	19	19	33	184	116	269	1,114
Debt liabilities to affiliated enterprises	0	0	0	0	0	0	0	0	0	0	0	0
Arrears	0	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0	0
Debt liabilities to direct investors	168	97	251	1,081	16	19	19	33	184	116	269	1,114
Arrears	0	0	0	0	0	0	0	0	0	0	0	0
Other	168	97	251	1,081	16	19	19	33	184	116	269	1,114

Source: Bulgarian National Bank.

Table A53. Bulgaria: Currency Composition of External Debt, 2001–05
(In percent of total; end of period)

	2001	2002	2003	2004	2005
Gross external debt					
Euro	21.3	38.1	47.8	61.2	73.6
U.S. Dollar	64.0	48.6	39.5	28.4	19.5
SDR	11.2	9.8	8.9	6.9	3.9
Japanese Yen	2.6	2.4	2.1	1.6	1.5
Other	0.8	1.1	1.8	1.9	1.5
Public sector					
Euro	17.5	31.8	38.4	43.0	55.3
U.S. Dollar	66.2	52.2	45.3	39.4	27.8
SDR	12.9	12.7	13.1	14.9	12.7
Japanese Yen	3.0	3.1	3.0	2.5	3.5
Other	0.3	0.2	0.2	0.3	0.6
Private sector, total					
Euro	48.9	59.0	67.5	77.0	81.6
U.S. Dollar	47.1	37.0	27.1	18.9	15.9
BGN	2.9	2.0	3.5	0.9	1.2
CHF	0.6	1.2	1.0	1.8	0.1
Other	0.6	0.9	0.9	1.4	1.2
Private sector, commercial banks					
Euro	49.8	54.7	70.6	76.6	86.4
U.S. Dollar	38.2	30.8	12.7	8.1	7.3
BGN	11.0	10.2	10.9	7.7	5.4
CHF	0.4	3.6	3.7	6.5	0.1
Other	0.6	0.7	2.0	1.2	0.8
Private sector, companies					
Euro	48.4	59.5	70.9	79.3	81.3
U.S. Dollar	50.3	38.3	26.5	17.2	14.6
Other	1.3	2.2	2.7	3.5	4.1

Sources: Bulgarian National Bank, and Ministry of Finance.

Table A54. Bulgaria: Intersectoral Asset and Liability Position (end-December 2005, in millions of EUR)
Holder of Liability (Creditor)

Issuer of Liability (Debtor)	Government Sector (I)	Financial Private Sector (II)	Nonfinancial Private Sector (III)	Rest of the World (IV)	Total
Government and BNB					
Monetary Base					
Total Other Liabilities		1,461.8		4,397.6	5,859.4
Short-term		63.5		0.0	63.5
Domestic Currency		39.5		0.0	39.5
Foreign Currency		24.0		0.0	24.0
Medium- and Long-Term		1,398.3		4,397.6	5,795.9
Domestic Currency		738.3		13.8	752.1
Foreign Currency		660.0		4,383.8	5,043.8
Financial Private Sector					
Total Liabilities	670.0		3,154.3	2,659.0	6,483.3
Short-term	614.1		3,074.7	1,746.5	5,435.2
Domestic Currency	346.7		1,998.6	131.7	2,477.1
Foreign Currency	267.3		1,076.1	1,614.8	2,958.1
Medium- and Long-Term	55.9		79.6	912.5	1,048.1
Domestic Currency	55.9		36.5	4.7	97.1
Foreign Currency	0.0		43.1	907.9	950.9
Equity	23.8		77.4	1,347.1	1,448.4
Nonfinancial Private Sector					
Total Liabilities		5,743.0		7,473.8	13,216.8
Short-term		1,792.9		4,172.2	5,965.1
Domestic Currency		821.4		93.3	914.7
Foreign Currency		971.6		4,078.9	5,050.4
Medium- and Long-Term		3,950.0		3,301.6	7,251.6
Domestic Currency		1,062.3		15.1	1,077.4
Foreign Currency		2,887.7		3,286.5	6,174.3
Equity		25.5		4,257.4	4,282.9
Rest of the World					
Total Liabilities	9,052.4	2,835.4	910.3		12,798.0
Currency and Short-term		2,251.1	858.8		3,109.9
Medium- and Long-Term		584.2	51.5		635.7
Equity		3.3	80.0		83.3
Total					
Total liabilities	9,722.4	10,040.2	4,064.6	14,530.4	
Short-term	614.1	4,107.6	3,933.5	5,918.6	
Domestic Currency	346.7	860.9	1,998.6	225.0	
Foreign Currency	267.3	995.6	1,076.1	5,693.6	
Medium- and Long-Term	55.9	5,932.6	131.1	8,611.7	
Domestic Currency	55.9	1,800.6	36.5	33.5	
Foreign Currency	0.0	3,547.7	43.1	8,578.2	
Equity	23.8	28.8	157.4	5,604.5	

Source: Bulgarian National Bank.

Table A55. Bulgaria: Import Tariffs, 2001–06 1/
(In percent unless otherwise indicated)

	2001	2002	2003	2004	2005	2006
All products:						
Minimum MFN tariff rate	0	0	0	0	0	0
Maximum MFN tariff rate	74	74	75	75	75	75
Simple average MFN tariff rate 2/	12.4	11.1	11.2	11.6	11.5	11.8
Number of tariff lines	10,500	10,619	10,606	10,373	10,302	10,044
Industrial products:						
Minimum MFN tariff rate	0	0	0	0	0	0
Maximum MFN tariff rate	30	27	27	27	26.8	26.8
Simple average MFN tariff rate 2/	10.0	8.6	8.6	8.7	8.6	8.8
Number of tariff lines	8,112	8,178	8,165	7,962	7,916	7,670
Agricultural products:						
Minimum MFN tariff rate	0	0	0	0	0	0
Maximum MFN tariff rate	74	74	75	75	75	75
Simple average MFN tariff rate 2/	21.9	21.3	21.6	22.9	22.9	23.5
Number of tariff lines	2,388	2,441	2,441	2,411	2,386	2,374
Memorandum item:						
Import surcharge	0	0	0	0	0	0

Sources: Customs agency, and Fund staff estimates.

1/ Applied ad valorem tariffs as at 1 January each year.
2/ Excluding the ad-valorem equivalent of mixed tariffs.