



WP/05/128

IMF Working Paper

Too Much of a Good Thing? Credit Booms in Transition Economies: The Cases of Bulgaria, Romania, and Ukraine

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European Department

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Authorized for distribution by Emmanuel van der Mensbrugghe

June 2005

Abstract

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Rapid credit growth in Bulgaria, Romania, and Ukraine has been driven by successful macroeconomic stabilization, robust growth, and capital inflows. While financial deepening is both expected and welcome, the recent expansions appear to have been excessive, as evidenced by widening current account deficits in Bulgaria and Romania, and prudential concerns in Ukraine. Policy responses have included attempts to both moderate credit growth and offset its impact on domestic demand, with mixed success thus far.

JEL Classification Numbers: E51, E58, F41

Keywords: Credit boom, financial deepening, transition, Bulgaria, Romania, Ukraine

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¹ The authors would like to thank Emmanuel van der Mensbrugghe, Hans Flickenschild, Albert Jaeger, and Johannes Herderschee for helpful comments, Cathy Song for valuable research assistance, Thomas Walter for editorial comments, and Tony Torraca for editorial assistance.

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I. INTRODUCTION

1. **Rapid private sector credit growth has been among the most notable economic phenomena across many transition economies—particularly in the central and eastern European countries (CEECs)—over the past few years.**² Such lending booms have presented both opportunities and challenges to economic policymakers. On the one hand, the surge in financial intermediation reflects a welcome catch-up from low levels, and financial deepening is generally associated with increased growth and efficiency. On the other hand, rapid credit growth has been associated with macroeconomic and financial crises, emanating from macroeconomic imbalances and banking sector distress. Policymakers therefore face the dilemma of how to minimize the risks of financial crisis while still allowing bank lending to contribute to higher growth and efficiency.

2. **The recent experiences of three transition economies—Bulgaria, Romania, and Ukraine—provide useful case studies of credit booms in different macroeconomic and institutional settings.** Recent papers on credit booms have focused on large cross-country data sets. In contrast, this paper seeks to zero in on the experiences of a small set of countries with similar developmental characteristics. In Bulgaria and Romania, credit booms over the past two-three years have contributed importantly to widening macroeconomic imbalances and heightened external vulnerability. With limited monetary tools at their disposal, policymakers in these countries have tightened fiscal policy to offset the sharp increase in private sector consumption and investment. Nevertheless, sharply larger external current account deficits—albeit financed to a large extent by foreign direct investment (FDI) inflows—have generated concerns about external vulnerability, and the need to persevere with tight fiscal policies remains. In contrast, the credit boom in Ukraine was accompanied by strong output growth and large external current account surpluses, although inflation has picked up. Risks in terms of loan quality and the impact on banking sector stability are thus the predominant concerns rather than macroeconomic imbalances.

3. **This paper aims to address the following questions:**

- What has caused credit to expand rapidly in all three countries despite the different institutional settings and macroeconomic conditions?
- What are the challenges and opportunities created by the credit booms?

² IMF (2004) makes a distinction between rapid credit growth and a credit boom. The former can occur as part of financial deepening (trend) and normal cyclical upturns, while the latter represents an excessive and therefore unsustainable cyclical movement. While such a distinction may be sensible for advanced economies, the short time series and likelihood of a structural break in the series make such a distinction less meaningful for economies in transition. We therefore use the terms “rapid credit growth” and “credit boom” interchangeably in this paper.

- What have been the policy responses, and have they been effective?
4. The plan of the paper is as follows. The next section discusses the causes and characteristics of the credit booms, emphasizing the similarities and differences between the three countries. The subsequent section outlines both the opportunities and the risks arising from the rapid credit expansions, followed in Section IV by a discussion of the possible and actual policy responses. Section V concludes.

II. CAUSES AND CHARACTERISTICS OF THE CREDIT BOOMS

A. Background

5. **Credit has expanded rapidly in all three countries in an environment of strong GDP growth and generally falling inflation (Tables 1 and 2, and Box 1).** Driven by strong external and domestic demand, growth has averaged between 5 and 8 percent in the past five years. A generally countercyclical fiscal stance, as evidenced by the improving fiscal balances, and prudent monetary frameworks have led to single-digit or near-single-digit inflation. However, the external current account deficits have expanded considerably in Bulgaria and Romania, driven by strong domestic demand. In contrast, Ukraine has maintained large current account surpluses, largely driven by favorable terms of trade shocks and an undervalued exchange rate.

Table 1. Basic Economic Indicators, 2000-04
(Annual percent change, unless otherwise indicated)

	2000	2001	2002	2003	2004	Average
Bulgaria						
GDP growth	5.4	4.1	4.9	4.5	5.6	4.9
Inflation (end of period)	11.4	4.8	3.8	5.6	4.0	5.9
Current account balance (percent of GDP)	-5.6	-7.3	-5.6	-9.2	-7.5	-7.0
Budget balance (percent of GDP)	-1.0	-0.9	-0.6	-0.4	1.8	-0.2
Romania						
GDP growth	2.1	5.7	5.1	5.2	8.3	5.3
Inflation (end of period)	40.7	30.3	17.8	14.1	9.3	22.4
Current account balance (percent of GDP)	-4.6	-6.5	-4.4	-6.0	-7.5	-5.8
Budget balance (percent of GDP)	-4.0	-3.2	-2.6	-2.3	-1.1	-2.6
Ukraine						
GDP growth	5.9	9.2	5.2	9.6	12.1	8.4
Inflation (end of period)	25.8	6.1	-0.6	8.2	12.3	10.4
Current account balance (percent of GDP)	4.7	3.7	7.5	5.8	11.0	6.5
Budget balance (percent of GDP)	-1.3	-1.6	0.5	-0.9	-4.5	-1.6

Sources: National authorities; and IMF staff estimates.

Table 2. Bulgaria, Romania, and Ukraine in Comparison: An Overview

	Similarities	Differences
Credit growth		
Speed	In the top ten of transition countries; average credit flows in percent of GDP above 5 percent on average since 2002.	<i>Romania:</i> Credit growth picked up later than in Bulgaria and Ukraine.
Level of credit	Level of credit, measured as credit-to-GDP ratio, is still relatively low (below 36 percent).	<i>Romania:</i> Credit-to-GDP ratio is about half of Bulgaria's and two-thirds of Ukraine's.
Causes	Macroeconomic stabilization; robust growth and strong economic outlook; regained confidence and bank restructuring; remonetization; parents of foreign-owned banks seek high yields.	<i>Ukraine:</i> Foreign banks have played only a subordinate role.
Characteristics	Funding mostly through deposit growth and capital inflows (in particular in Bulgaria and Romania); large share of foreign-currency-denominated lending; household loans have expanded most rapidly but remain below business loans in absolute terms; maturities of loans have lengthened; few other investment opportunities.	
Macroeconomic conditions	Inflation in mid-single to low double digits; strong economic growth; relatively strong fiscal positions; large current account deficits in Bulgaria and Romania.	<i>Ukraine:</i> Large current account surpluses; substantial deterioration in fiscal position since mid-2004 and pickup in inflation.
Monetary policy regime	Exchange rate as nominal anchor (until November 2004 for Romania).	<i>Bulgaria:</i> Currency board arrangement (peg to euro). <i>Romania:</i> Managed float since November 2004; previously, managed crawl against euro within an unannounced band. <i>Ukraine:</i> De facto peg to U.S. dollar.
Capital account controls		<i>Bulgaria:</i> Open. <i>Romania:</i> Some controls, to be removed in part in 2005. <i>Ukraine:</i> Significant controls left.
Institutional environment	Improvements in the legal environment and financial supervision but still much need for further improvement to achieve EU standards.	Weakest institutions in Ukraine. According to EBRD index for financial sector reform (2004): <i>Ukraine:</i> 2.3; <i>Bulgaria:</i> 3.7; and <i>Romania:</i> 3.0.
Business environment/FDI	Bulgaria and Romania have benefited from their status as EU accession countries; large levels of FDI.	<i>Ukraine:</i> Weak business environment; lack of transparency; low level of FDI.
Banking system		
Ownership	Only small role for state-owned banks; mostly foreign owned in Bulgaria and Romania.	<i>Ukraine:</i> Mostly domestically owned.
Prudential indicators	Relatively strong in Bulgaria and Romania in terms of capital adequacy, provisioning, profitability, and nonperforming loans (NPLs).	<i>Ukraine:</i> Structural weaknesses, such as large share of related-party lending; inadequacy of provisions; high level of reported NPLs; low profitability.

Box 1. Macroeconomic Background

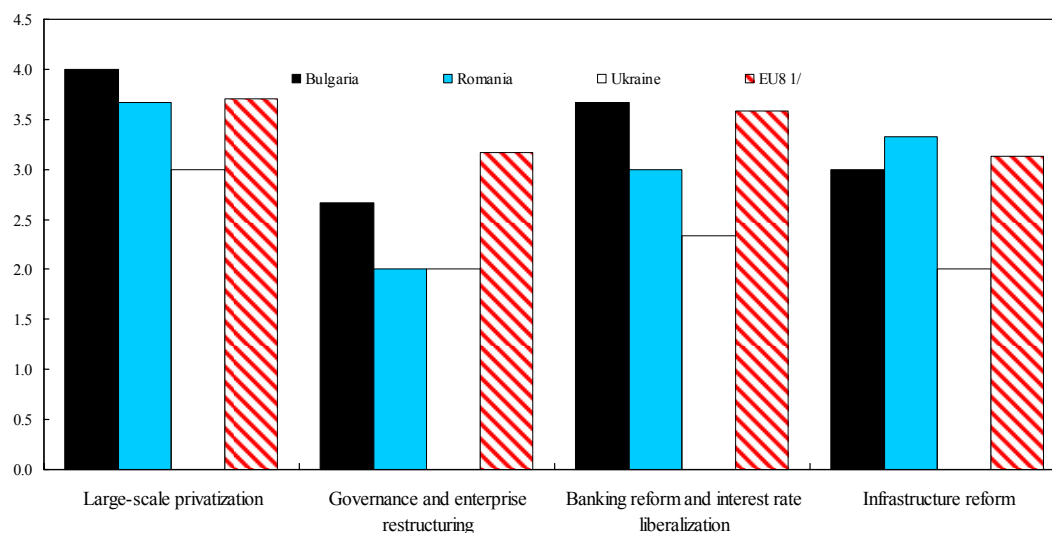
Bulgaria has enjoyed macroeconomic stability and sound growth since 1997. The establishment of the currency board set in train rapid disinflation to single digits and has helped restore confidence in the financial system. Tight fiscal policy and debt-management operations have cut public debt in half relative to GDP and sustained a manageable external current account deficit. Growth has been based on both external and domestic demand, with the latter assuming the leading role lately. Rapid credit growth has led to a construction and real estate boom, while privatization and good marketing have made tourism a leading sector as well. However, the sizable current account deficit has become a vulnerability, despite its being financed mostly by FDI.

Since mid-2001, Romania has enjoyed a period of strong real GDP growth and has generated steady disinflation. The country's gradual trade integration into the EU sustained double-digit export growth and gradually accelerating GDP growth. Budget and wage restraint and energy price adjustments moderated domestic demand initially. This allowed the National Bank of Romania (NBR) to successfully pursue disinflation by guiding exchange rate depreciation on a downward path. External competitiveness has been sustained through sizable productivity increases, moderate wage growth until 2003, and cuts in social security contribution rates. Beginning in 2002, improved macroeconomic conditions, the prospects for EU accession, and the wide yield differential between leu and foreign-currency-denominated assets resulted in sustained capital inflows, mostly in the form of bank borrowing and FDI, and substantial reserves accumulation. However, domestic demand accelerated in 2003-04, led by rapid credit expansion and fast real wage growth. As a result, the current account deficit surged to over 7½ percent of GDP in 2004, almost double its level two years previously. The strength of domestic demand is forcing the NBR to allow substantial exchange rate appreciation in support of continuing disinflation.

Six years after the 1998 crisis, Ukraine has continued to recover strongly. Over 2000-04, GDP growth averaged 8½ percent. External demand has been the main engine of growth, with buoyant metal prices and strong demand from Russia triggering a sharp and sustained export boom and resulting in consistent and large current account surpluses. The surge in credit to the private sector and rising disposable incomes have supported sizable consumption expansion. Fiscal policy remained prudent and inflation moderate through mid-2004. In the second half of 2004, however, the fiscal deficit surged to 4½ percent of GDP against the backdrop of an election-motivated increase in transfers, thereby adding to inflationary pressures. Inflation picked up from an average of 6 percent in 2001-2003 to 12 percent by end-2004. During the tumultuous presidential elections in late 2004, the National Bank of Ukraine (NBU) lost about one-fourth of its international reserves, and liquidity pressures emerged for the banking system when households withdrew 17 percent of their total deposits. Since the resolution of the political crisis, the financial market pressures have subsided, with sovereign spreads falling below precrisis levels, bank deposit flows reversing, and the NBU recouping more than its reserves losses by end-April 2005. In the context of an undervalued currency, rising capital inflows, and large increases in public wages and social spending under the 2005 budget, regaining control over inflation is the most important immediate challenge.

6. **The three countries are at different stages of the transition process.** Bulgaria and Romania are on the verge of European Union (EU) membership and have largely caught up with the central European transition economies in terms of structural reform indicators (Figure 1), although progress in corporate governance still lags behind. Structural reforms in Ukraine, on the other hand, have been much slower, and particularly accounting and reporting standards for corporates as well as corporate governance need to be strengthened for FDI to pick up.

Figure 1. Selected EBRD Transition Indicators, 2004



Source: EBRD Transition Report, 2004.

1/ The EU8 comprises the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, the Slovak Republic, and Slovenia.

7. **Developments in credit dynamics in all three countries have followed a bust-boom pattern.** After a sharp drop in financial intermediation during a deep macroeconomic/banking crisis, credit growth was initially subdued, reflecting low credit demand and banks' risk aversion. The subsequent stabilization and return of sound growth, together with banks' restructuring and balance sheet rehabilitation, has encouraged a rebirth of credit demand and banks to reassess positively their borrowers' creditworthiness, find new lending opportunities, and eventually even to engage in a race for market share, pushing up credit sharply.

8. **As elsewhere in the region, credit has grown rapidly in the three countries in the acceleration phase, albeit from a small base.** While credit-to-GDP ratios were in the teens when credit began to accelerate, real growth rates have been in the 30-50 percent range (Table 3). Annual flows, perhaps a better measure of the macroeconomic impact of credit, have ranged from 3 to 12 percent of GDP. Such credit dynamics are part of a regionwide trend. As Figure 2 illustrates, credit has been growing quickly in most CEECs in the past three years as well.

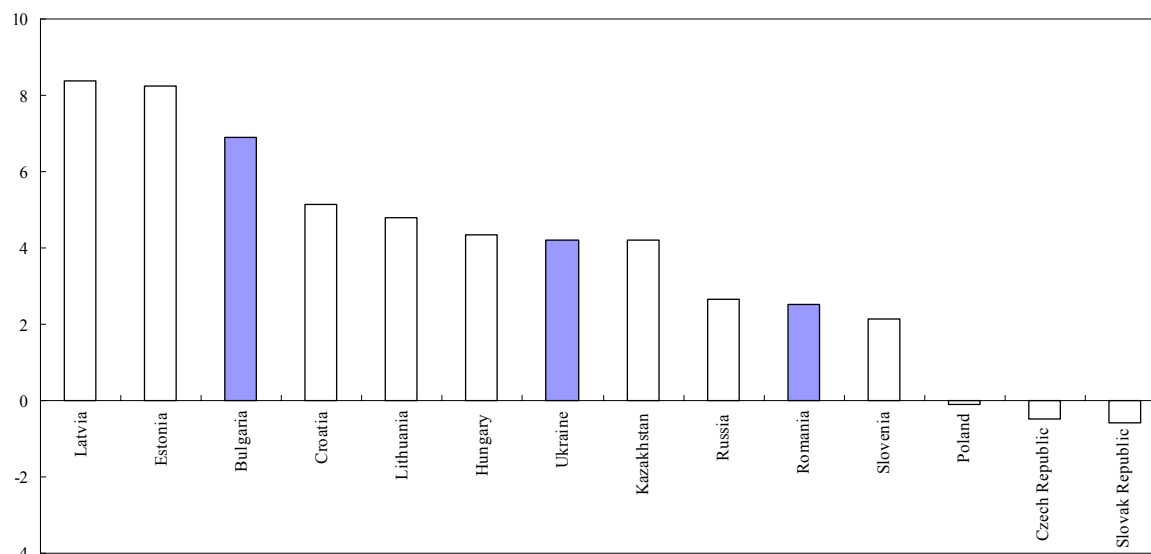
Table 3. Basic Credit Indicators, 2000-04

	2000	2001	2002	2003	2004
Bulgaria					
Real credit growth (in percent, year-on-year, deflated by CPI)	4.5	26.3	37.2	39.5	40.4
In local currency	11.9	26.6	23.7	37.7	27.9
In foreign currency	-6.6	25.9	61.8	42.1	57.3
Credit flows in percent of GDP	1.7	3.6	5.7	8.4	11.5
By currency: local	1.6	2.3	2.5	4.7	4.8
By currency: foreign currencies	0.2	1.2	3.2	3.7	6.7
By borrower: households	0.4	1.1	1.4	3.2	4.9
By borrower: companies	1.4	2.5	4.3	5.2	6.6
Credit stock in percent of GDP (year-end)	12.2	14.5	19.0	26.3	35.4
By currency: local	7.9	9.4	11.1	15.1	18.5
By currency: foreign currencies	4.3	5.2	8.0	11.2	16.9
By borrower: households	2.3	3.1	4.3	7.2	11.5
By borrower: private companies	9.3	10.8	14.1	18.4	23.2
By borrower: state-owned enterprises (SOEs)	0.6	0.6	0.7	0.7	0.7
Share of foreign currency deposits as percent of total	54.0	52.8	49.6	48.0	43.1
Share of foreign currency loans as percent of total	35.5	35.4	41.8	42.5	47.6
Romania					
Real credit growth (in percent, year-on-year, deflated by CPI), composite	7.9	28.0	32.4	56.8	40.5
In local currency	-5.4	20.0	19.1	77.4	11.2
In foreign currency (in €)	15.8	33.2	40.4	38.1	60.5
Credit flows in percent of GDP	0.6	2.9	3.3	6.2	5.6
By currency: local	0.8	1.5	1.3	3.6	1.0
By currency: foreign currencies	-0.2	1.5	2.1	2.6	4.2
By borrower: households	0.1	0.3	0.8	2.9	1.9
By borrower: companies	0.4	2.6	2.5	3.4	3.3
Credit stock in percent of GDP (year-end)	9.3	10.1	11.8	15.9	17.9
By currency: local	3.8	4.1	4.4	7.1	7.0
By currency: foreign currencies	5.5	6.1	7.4	8.8	10.9
By borrower: households	0.5	0.7	1.4	3.9	5.1
By borrower: private companies	7.5	8.0	8.9	10.5	11.5
By borrower: SOEs	1.4	1.4	1.5	1.5	1.3
Share of foreign currency deposits as percent of total	47.0	49.3	44.7	42.5	41.2
Share of foreign currency loans as percent of total	59.5	59.8	62.7	55.4	60.8
Ukraine 1/					
Real credit growth (in percent, year-on-year, deflated by CPI)	28.6	32.7	48.4	51.2	16.9
In local currency	37.4	32.7	52.9	53.4	15.7
In foreign currency (in \$)	17.9	32.8	41.9	47.8	18.7
Credit flows in percent of GDP	4.7	4.2	6.2	10.5	6.7
By currency: local	3.1	2.5	4.0	6.6	4.0
By currency: foreign currencies	1.5	1.8	2.2	3.9	2.8
By borrower: households	0.2	0.2	0.8	2.1	1.7
By borrower: companies	4.5	4.0	5.4	8.4	5.0
Credit stock in percent of GDP (year-end)	12.3	14.4	19.3	27.0	27.1
By currency: local	7.3	8.5	11.7	16.6	17.2
By currency: foreign currencies	5.1	5.9	7.6	10.4	11.0
By borrower: households	0.6	0.7	1.5	3.3	4.4
By borrower: private companies	10.6	12.3	16.2	21.5	21.9
By borrower: SOEs	1.1	1.4	1.6	2.1	1.9
Share of foreign currency deposits as percent of total	41.4	41.3	39.5	38.5	39.1
Share of foreign currency loans as percent of total	38.5	32.9	32.6	32.2	36.5

Sources: Bulgarian National Bank; National Bank of Romania; National Bank of Ukraine; and IMF staff estimates.

1/ During the tumultuous presidential elections in late 2004, the banking sector lost substantial amounts of deposits and had to temporarily reduce lending.

Figure 2. Credit Growth in Transition Economies, 2002-04 1/ 2/
(Average annual change in the credit-to-GDP ratio)



Sources: IMF, *International Financial Statistics*; *World Economic Outlook*; and IMF staff estimates.

1/ Bank credit to the private sector.

2/ During the tumultuous presidential elections in Ukraine in late 2004, the banking sector lost substantial amounts of deposits and had to temporarily reduce lending.

9. **The banking sector is still relatively small in all three countries despite the large number of banks and rapid asset growth over the past four years (Table 4).** Relative to GDP, Bulgaria's banking system—consisting of 29 banks and 6 branches of foreign banks—is the largest, with total assets of 46 percent of GDP. The assets of Ukraine's 158 banks amount to 37 percent of GDP. However, many of the banks are small, and most are affiliated with corporates. Romania has 32 banks and 7 branches, with assets of 35 percent of GDP.

10. **Most banks are private now in these countries, and foreign ownership dominates in Bulgaria and Romania.** State ownership is limited to two or three banks in each country, including the state savings banks in Romania and Ukraine, which have state guarantees for their deposits. In both countries, these institutions are being restructured, and Romania is aiming to privatize its bank by mid-2006. Through the privatization process, large European banks acquired most of the banking system assets in Bulgaria and Romania; however, the share of foreign-owned banks is much smaller in Ukraine, reflecting the difficult business environment.

11. **The institutional framework of the financial sector is generally adequate in Bulgaria and Romania, but still exhibits weaknesses in Ukraine despite recent progress.** Financial Sector Assessment Program (FSAPs) conducted in the three countries in 2002–03 gave generally good marks to the authorities' regulatory framework and supervisory activity in Bulgaria and Romania but pointed out various shortcomings in Ukraine. Recommendations for Bulgaria and Romania included strengthening supervision on a

consolidated basis and training bank supervisors in international accounting standards. For Ukraine, the advice focused on the need to achieve international standards, in particular in terms of related-party lending, identification of bank owners, banks' risk management practices as well as the need to raise capital requirements and tighten the definition of capital. While progress on the last two suggestions was made, including by raising the minimum capital adequacy ratio from 8 percent to 10 percent, the first three issues have not yet been appropriately tackled. These remaining institutional weaknesses, as well as the prominence of domestic bank ownership, make Ukraine's banking sector weaker than Bulgaria's and Romania's.

Table 4. Ownership of the Banking Sector, 2000-04

	2000	2001	2002	2003	2004
Bulgaria					
Number of banks and bank branches	35	35	34	35	35
Private	31	31	31	33	33
Domestic	8	6	7	8	9
Foreign 1/	23	25	24	25	24
o/w: foreign bank branches	8	7	6	6	6
State-owned 2/	4	4	3	2	2
Share of assets of largest 10 banks in total assets	83	78	79	78	78
Romania					
Number of banks and bank branches	41	41	39	38	39
Private	37	38	36	35	36
Domestic	8	6	4	7	6
Foreign 1/	29	32	32	29	30
o/w: foreign bank branches	8	8	8	8	7
State-owned 2/	4	3	3	3	3
Share of assets of largest 10 banks in total assets	...	...	...	80	80
Ukraine					
Number of banks and bank branches	153	152	157	158	160
Private	151	150	155	156	158
Domestic	120	122	135	137	139
Foreign 1/	31	28	20	19	19
o/w: foreign bank branches	0	0	0	0	0
State-owned 2/	2	2	2	2	2
Share of assets of largest 10 banks in total assets	55	53	54	54	55

Sources: Bulgarian National Bank; National Bank of Romania; National Bank of Ukraine; and IMF staff estimates.

1/ Banks where foreign parties hold more than 50 percent of the total outstanding share value.

2/ Banks where state institutions yield effective control.

12. **Episodes of economic instability in the past have caused dollarization, which has proved difficult to reverse.** Even though confidence in local currencies has been partly restored following successful inflation stabilization, and real local currency deposit interest rates have been high in Romania and Ukraine, the share of foreign-currency-denominated deposits remains large in all three countries. At the same time, borrowers, mindful of the lower effective cost of foreign-currency-denominated loans, have maintained about 40-

60 percent of their loans in foreign currency, thereby exposing the banking sector to indirect foreign exchange risk (Table 3). By aiming, explicitly or implicitly, at some measure of exchange rate stability throughout most of the period analyzed (Box 2), monetary policy frameworks have inadvertently encouraged demand for foreign-currency-denominated loans.

Box 2. Monetary Policy Frameworks

The Bulgarian National Bank (BNB) operates a currency board arrangement. It has three key features: (i) a fixed exchange rate peg to the euro; (ii) automatic convertibility, a commitment on the part of the BNB to buy and sell foreign currency at the fixed rate; and (iii) a prohibition on domestic credit creation by the BNB. The latter implies that the BNB cannot affect the money supply through open market operations or the extension of domestic credit. The only remaining monetary policy instrument is reserve requirements on commercial bank liabilities. Although this has generally not been used as a discretionary policy instrument, the credit boom recently prompted some adjustments to reserve requirements in an effort to reduce commercial bank liquidity. The BNB has also imposed quarterly ceilings on bank credit growth, with punitive marginal reserve requirements if those ceilings are exceeded.

The NBR is in transition from an effectively exchange-rate-based framework to inflation targeting. Until November 2004, the central bank relied on the exchange rate as an implicit nominal anchor, guiding it broadly in line with the annual disinflation target and moderate real effective appreciation. The existing restrictions on capital flows afforded the NBR a degree of autonomy in setting its policy interest rate, which it used mainly to support the targeted exchange rate dynamics and reserves accumulation. In view of its transition to inflation targeting in 2005, the NBR recently stopped announcing real appreciation targets and limited its interventions in the foreign currency market. The monetary policy stance is signaled through the main policy interest rate, which serves as a ceiling for the NBR's sterilization and liquidity-managing tools of deposit auctions and certificates of deposits. Changes in reserve requirements on leu and foreign currency deposits are a secondary, rarely used instrument. The forthcoming liberalization of nonresident deposits with local banks, a component of Romania's accession to the EU, will challenge monetary policy implementation, owing to the still wide yield differential between assets in leu and foreign currencies.

Although the de facto peg of the hryvnia to the U.S. dollar has been the main feature of the NBU's policy framework, a move to a new regime is contemplated. The exchange rate appreciated only marginally against the U.S. dollar between 2000 and March 2005, and monetary policy was largely accommodative. The strong accumulation of international reserves during that period was only partly sterilized, mainly by the relatively tight fiscal stance, rather than by active monetary policy operations. However, rapid base money and broad money growth was mirrored by strong money demand, thus keeping inflationary pressures in check before 2004. The surge of inflation to 15 percent since then has made it apparent that the de facto peg is unlikely to deliver low and stable inflation against the backdrop of an undervalued currency and prospects of rising capital inflows. In April 2005, the NBU therefore allowed the exchange rate to appreciate by 4.6 percent but has left it unchanged since, even though it contemplates a move to more exchange rate flexibility and inflation targeting in the medium term.

B. Causes of Credit Booms

13. **The common factors behind the sharp credit acceleration in all three countries are successful postcrisis macroeconomic stabilization and robust growth, restoration of confidence in the banking sector, and sizable foreign exchange inflows.** All three countries went through deep macroeconomic and financial crises in the second half of the 1990s, which all but halted financial intermediation for a while. Prudent macroeconomic policies, leading to fast disinflation, quickly rebounding GDP, and rapidly rising profits and incomes, whetted appetite for borrowing and improved banks' perception of the borrowers' creditworthiness. The entry of reputable international banks and strengthening of the regulatory and supervisory frameworks of the central banks restored the population's confidence in the banking sector, leading to a quick rise in deposits and pressure to find profitable asset placements. At the same time, sharply declining budget deficits and ample external budgetary financing limited government paper issuance. Finally, a fall in the country risk premia and improved business conditions gave and still give rise to large capital inflows, coming mainly through the mostly foreign-owned banking sector, and adding to supply-side pressures to lend.

14. **The foundation for the current credit boom in these countries was laid in the years following the crises.** Banks initially maintained high cash balances, built up net foreign assets (Bulgaria), and invested mostly in government securities (Romania).³ This risk-averse behavior in part reflected a lack of information (including too short a credit history) about prospective borrowers, doubts about contract enforcement, and the loss of a large client base, as the state-owned enterprises (SOEs) were now not deemed creditworthy without state guarantees. Aided by economic recovery, a return of confidence, strengthening of bank balance sheets, and privatization of state banks, this risk-averse behavior gradually gave way to increased lending. At the same time, the legal, supervisory, and accounting framework under which banks were operating was strengthened, laying the foundation for increased bank lending. The framework was strengthened by (i) expanding the regulatory powers of the central banks; (ii) strengthening prudential regulations and supervision, including raising minimum capital adequacy requirements; (iii) strengthening creditors' rights; and (iv) introducing international accounting standards.

15. **The ongoing credit boom reflects a mix of supply- and demand-side factors.** In broad terms, the credit boom reflects a catching up from depressed levels of postcrisis bank lending and is thus part of a process of financial deepening. The following factors are especially important:

³ Due to the financial crisis in Ukraine during which the government had to restructure its debt, banks in Ukraine initially shied away from government securities.

- The newly privatized banks have been keen to boost profitability and market share. With high capital adequacy ratios, banks managed to increase profitability by shifting the composition of their assets toward loans. In Bulgaria and Romania, this more aggressive stance has been actively encouraged by the banks' foreign parents. Many of the banks' foreign owners are domiciled in less profitable mature markets, so parents have encouraged their subsidiaries and branches to pursue aggressive loan portfolio expansion to gain market share and improve consolidated results, thereby contributing to the acceleration of credit. In Ukraine, where foreign banks are less prominent, the lack of other investment opportunities has forced banks to expand their loan portfolios in pursuit of higher profits.
- Banks' ability to fund loan expansion has been boosted by strong capital inflows, mostly through the banking system, amid high global liquidity, low interest rates, and increased confidence associated with Bulgaria's and Romania's prospective EU accession and Ukraine's large current account surpluses.
- The greater supply of credit has been matched by increased demand from both businesses and households. For the former, a newfound confidence in the future—prompted by rising profits and, for Bulgaria and Romania, strong EU accession prospects—has boosted investment intentions and demand for credit. For the latter, consumer and mortgage credit has taken off partly because household demand for durables and real estate has increased from previously depressed levels as households have felt more confident in their ability to service debt, and partly because the banks have offered new products with more flexible terms.
- Finally, an additional factor explaining the credit boom may be crowding in: bank credit to the public sector has declined substantially, reflecting small general government fiscal deficits or even surpluses and the availability of ample external financing and privatization revenue.

C. Characteristics of Credit Booms

16. **A fast expansion of credit to households and a relative decline in loans to SOEs are common in all three countries (Table 3).** Households have converted their confidence in a permanently rising disposable income into a sharp rise in consumer and mortgage loans. In Bulgaria and Romania, the share of household loans has surged to one-third of total loans while it is still much lower in Ukraine (16 percent) despite a rapid acceleration over the past years. The increase in credits to households has been matched by a declining share of SOEs in nongovernment credit, partly reflecting major progress in privatization. In all three countries, business credit remains the largest component of total credit.

17. **Widespread lending in foreign currencies is another common feature (Table 3).** Despite different monetary frameworks (Box 2), the expected cost of foreign currency credit is perceived to be lower than local currency loans in all three countries (a belief validated ex

post for the time being as well). In Bulgaria, the currency board has assured borrowers of exchange rate stability, while banks still charge higher rates for loans in domestic currency.⁴ In Romania, the sharp drop in the risk premium after EU accession became near certain has led to strong and persistent inflows, which has significantly lowered the effective cost of foreign currency credit. In Ukraine, the de facto exchange rate peg has also provided an incentive for a rise in foreign currency credit, closely associated with the boom in loans to households; however, local currency loans in Ukraine have expanded even faster, in contrast to the other two countries. In all three countries, most enterprises that borrow in foreign currency do not appear to be hedged, except for the natural hedge enjoyed by exporters.

18. Services and industry still get the lion's share of credit in all three countries (Table 5). Trade and construction have been steadily gaining share everywhere, while industry has been increasing its relative borrowing (from a low level) only in Bulgaria. The share of loans going to the service sector has declined in Bulgaria—albeit from a high level—and was stable or increased in Romania and Ukraine.

Table 5. Sectoral Composition of Credit, 2000-04 1/
(Percent of total)

	2000	2001	2002	2003	2004
Bulgaria 2/					
Industry	...	...	26	30	31
Agriculture	...	...	2	3	4
Services	...	...	69	64	61
Trade	...	...	25	30	36
Transportation	...	...	5	3	3
Construction	...	...	1	2	4
Public administration and other	...	...	1	1	0
Romania					
Industry	53	52	48	44	41
Agriculture	4	3	3	3	3
Services	36	38	41	40	39
Construction	5	4	4	4	5
Public administration and other	2	3	3	8	12
Ukraine					
Industry	40	40	38	35	33
Agriculture	4	7	7	8	8
Services	40	39	44	46	47
Trade	37	36	40	42	42
Transportation	3	3	4	5	4
Construction	2	2	2	3	3
Public administration and other	13	12	8	9	9

Sources: Bulgarian National Bank; National Bank of Romania; National Bank of Ukraine; and IMF staff estimates.

1/ Excluding credit to individuals. Data in this presentation deviate somewhat from the balance sheet numbers due to different data sources.

2/ Prior to July 1, 2004, only loans exceeding 10,000 leva were reported; since then, all loans have been reported.

⁴ This partly reflects market segmentation, with households and businesses that do not have access to foreign currency loans having to borrow in domestic currency.

19. There has been a marked shift from short- to medium- and long-term credit.

Between end-2000 and end-2004, short-term credit (maturity less than one year) in Romania and Ukraine declined from 72 percent to 42 percent of the total, and from 82 to 46 percent, respectively. In Bulgaria, over the same period, short-term credit's share (including overdrafts) fell from 34 percent to about 24 percent. The preponderance of longer-term lending is a reflection of the increased confidence of both creditors and debtors.

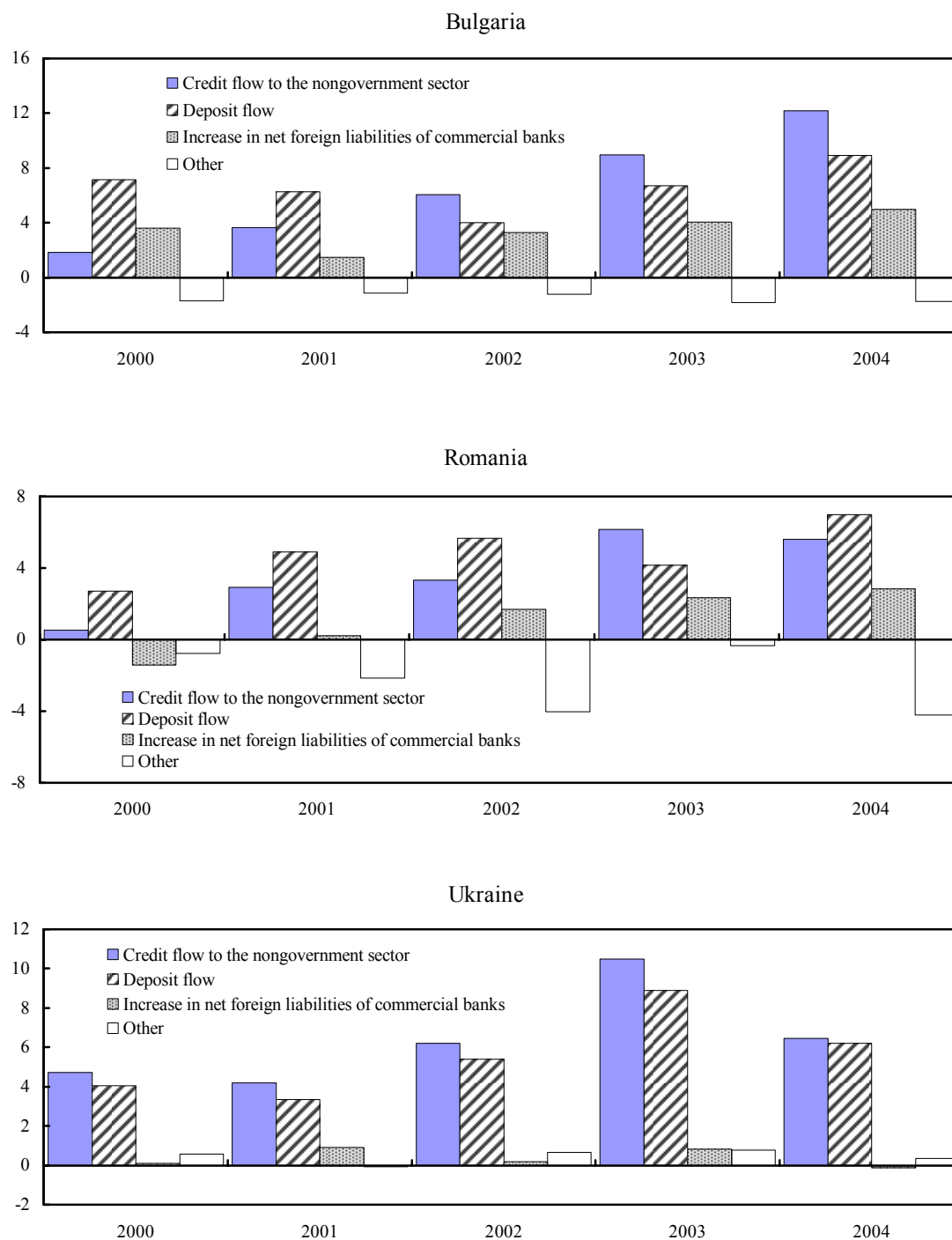
20. In all three countries, banks have extended loans at very high, though falling, real interest rates and intermediation spreads in local currency.

A dearth of alternative sources of corporate financing (e.g., corporate bonds and stock market initial public offerings) has led the banks to compete on terms like the range and fees for services rather than on deposit and loan rates. In Romania, the high reserve requirements have also contributed to the spread. Ukraine is an exception, as lower operating and provisioning costs have enabled banks to cut lending rates, causing an 18 percentage point fall in the deposit loan interest rate spread since end-2000.

21. Banks have funded the expansion of credit mostly through mobilization of deposits (Figure 3).

Deposit growth has been relatively quick, owing to improved confidence, remittances from abroad, and, in Romania, high real leu deposit rates. In addition, a reduction of placements abroad, reflecting low global interest rates and a rapid accumulation of foreign liabilities, has resulted in a sharp drop in banks' net foreign assets. To a lesser extent, additional capital—either from the parent bank or through issuance of subordinated debt—has also been a source, but only for banks with capital adequacy ratios near the regulatory minimum.

Figure 3. Credit and Bank Liabilities, 2000-04
(In percent of GDP)



Sources: Central banks; and IMF staff estimates.

III. OPPORTUNITIES AND RISKS

A. Opportunities

22. **An increase in the level of financial intermediation is associated with an increase in the long-run growth rate of the economy.** The theoretical and empirical literature generally supports the view that financial sector development increases economic growth.⁵ There are various channels through which financial development can contribute to economic growth, including by collecting information and thereby improving the allocation of capital; sharing risk; and pooling savings and raising the efficiency of financial intermediation. Indeed, by easing financing constraints, increased bank lending can contribute to higher investment and consumption, and, ultimately, a higher standard of living.

23. **From a structural perspective, the increase in financial intermediation in the three countries can therefore be considered beneficial.** Per capita GDP in Bulgaria, Romania, and Ukraine is still well below the average of EU countries and CEECs. To the extent that financial deepening raises the country's potential growth rate—through increases in the marginal productivity of capital and higher private savings and investment—recent developments in these countries should in principle be welcomed.

24. **At the same time, episodes of rapid bank lending also entail risks.** The risks can be broadly grouped into two categories: (i) the emergence or worsening of macroeconomic imbalances (“macro risk”); and (ii) risks to financial sector stability owing to deteriorating bank asset quality (“credit risk”). When they materialize, these two risks are typically mutually reinforcing, creating boom-bust cycles in credit and asset markets and large swings in macroeconomic fundamentals. Moreover, the two types of risk may also be causally linked: abrupt corrections of macroeconomic imbalances have in some instances triggered financial sector distress, while the latter has caused economic disruptions. This section discusses each of these risks in turn and how they apply to the countries being studied. In particular, Subsection B on macroeconomic risks will focus on Bulgaria and Romania, where the credit booms have increased macroeconomic risks associated with higher external vulnerabilities. In contrast, Subsection C on prudential risks will focus mostly on Ukraine, where the credit boom has been accompanied by increased banking sector vulnerabilities.

B. Macroeconomic Risks

25. **Rapid credit growth poses potential risks for macroeconomic stability.** Increased credit availability eases liquidity constraints on households and firms, leading to higher consumption and investment. Given short-run supply constraints, this upward shift in credit-financed domestic demand would tend to exert upward pressure on prices in asset, goods, and labor markets. Concurrently, demand for foreign goods—both consumption and

⁵ IMF (2004) summarizes the state of play in the literature; a more extensive discussion of both the theory and empirics regarding finance and growth can be found in Levine (2003).

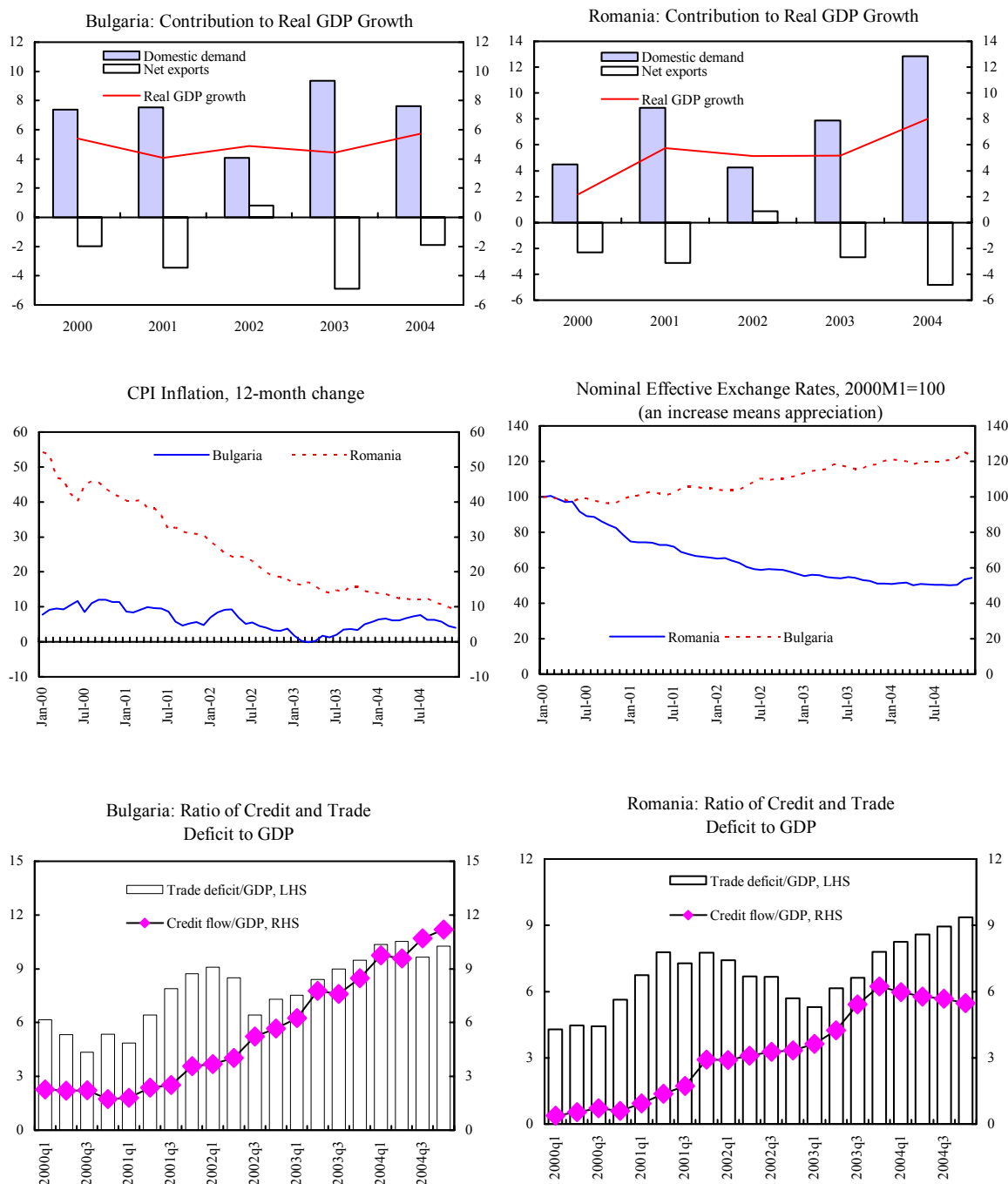
investment—will rise, causing a deterioration in the trade balance. Thus, if left unchecked, a rapid increase in credit can boost domestic prices and wages—which at an unchanged nominal exchange rate could reduce international competitiveness—and heighten external vulnerabilities. Indeed, in characterizing emerging market credit booms, IMF (2004) notes that there is almost a 70 percent probability that a credit boom coincides with either a consumption or investment boom, and that credit booms are often associated with banking and currency crises. The same paper also concludes that emerging market credit booms have not, on average, resulted in higher inflation—partly reflecting the high degree of trade openness in these economies—but rather have led to a deterioration of the current account and nominal exchange rate appreciation.

26. **The experience of Bulgaria and Romania accords well with these priors (Figure 4).** Both countries have seen domestic demand contributions to real GDP growth rise sharply, while net export contributions have turned negative. These shifts have coincided with the rapid increase in bank lending documented in Section II. Consumer price inflation has remained relatively tame in both countries, partly reflecting lower food prices due, in turn, to strong agricultural output, and nominal effective exchange rate appreciation in Bulgaria has offset the impact of higher oil prices. Thus, overheating has so far largely been manifested in widening trade deficits, owing to rapid growth in imports.⁶

27. **In contrast, Ukraine's macroeconomic imbalances are of a different nature and have been driven by different shocks than in Bulgaria and Romania.** Ukraine has registered large current account surpluses in recent years on the back of strong export commodity prices and an undervalued currency. With most of the terms of trade gains going to high-savings groups (a reflection of the ownership structure of Ukraine's economy, including the export sector) the impact on domestic demand and inflationary pressures remained subdued though mid-2004 against large idle capacities, a tight fiscal stance, and rapid remonetization. The subsequent pickup of inflationary pressures can be attributed mainly to expansionary fiscal policy, emerging capacity bottlenecks, rapidly rising wages and pensions, and an accommodative monetary policy stance.

⁶ Developments in bank credit are probably more closely mirrored in the trade rather than the current account. In Bulgaria, for example, the current account deficit narrowed in 2004 despite an acceleration in credit growth as the invisibles strengthened substantially; the trade deficit, meanwhile, remained at a very high level (14 percent of GDP) despite favorable movements in the terms of trade. Competitiveness does not appear to have been a significant factor in the deterioration of trade balances in Bulgaria and Romania.

Figure 4. Bulgaria and Romania: Selected Economic Indicators, 2000-04
(In percent, unless otherwise indicated)



Sources: National authorities; IMF, *International Financial Statistics*; and IMF staff estimates.

28. **Econometric analysis suggests that rapid credit expansion in Bulgaria and Romania has been a significant factor in explaining the deteriorating trade balance, although tighter fiscal policy has helped moderate the impact (Table 6; for an overview of the methodology, see Box 3).** The estimation results suggest that each percentage point of GDP of additional credit leads to a deterioration in the balance of goods and nonfactor services (with a one-quarter lag) of about 0.4 percentage point of GDP for Bulgaria and 0.7 percentage point of GDP for Romania. The change in the fiscal stance is also an important determinant of changes in the trade balance: a 1 percentage point increase in the fiscal balance improves the trade balance by 0.2 percentage point (with a one-quarter lag). The same-size response in both countries probably reflects the broad similarity in the use of the exchange rate as a nominal anchor during the analyzed period, despite the different monetary policy frameworks (see Box 2). The results also suggest that private savings provide a significant but incomplete Ricardian offset to changes in public savings, albeit somewhat above what is typical for a developing country (Chinn and Prasad, 2003). Finally, it seems that, in terms of the efficiency of policy instruments, moderating credit growth in these two countries is more powerful than attempts to offset it by tightening the fiscal stance (see Section IV).

Table 6. Impact of Credit Growth on the Trade Balance
(Dependent variable: trade balance-to-GDP ratio)

	Coefficient	Std. Error	<i>t</i> -Stat	Prob.
Constant	-0.031	0.010	-3.043	0.004
Fixed effects: Bulgaria	-0.008			
Romania	0.008			
Lagged trade balance	0.197	0.156	1.262	0.214
Lagged fiscal balance	0.190	0.097	1.952	0.058
Lagged credit flow				
Bulgaria	-0.442	0.151	-2.930	0.006
Romania	-0.706	0.189	-3.735	0.001
Change in GDP	-0.050	0.051	-0.982	0.332
Memo items:				
Sample: 1999Q2-2004Q4				
Total pool (balanced) observations	46			
Adjusted <i>R</i> -squared	0.621			
Durbin Watson stat	1.975			
<i>F</i> -stat	13.312			
Prob(<i>F</i> -stat)	0.000			

Source: IMF staff estimates based on data from national authorities.

Box 3. The Relationship Between Credit Growth and Trade Balance in Bulgaria and Romania

There are different ways of analyzing the impact of credit growth on the external balance. One option, described in Duenwald and Joshi (2004), is to use a financial programming model in which an increase in credit to the nongovernment sector, for a given level of the change in broad money, the fiscal balance, and the change in net foreign assets of the nonbank sector, translates into a worsening of the current account balance. This effect can be numerically derived. A second approach, adopted in this paper, is to specify a behavioral relationship between the two variables and fit this model to the data.

Our chosen model is loosely based on Bussière and others (2004). Their paper uses a modified intertemporal current account model to analyze current account dynamics in a mix of advanced and transition economies. The standard model is augmented to explain two stylized facts: (i) the persistence of current account positions; and (ii) the observed impact of the fiscal balance on the current account. The authors explain the former by habit formation and the latter by the presence of liquidity-constrained agents whose current income (and thus spending) is influenced by fiscal policy. The following dynamic model is tested:

$$CA_{it} = \alpha + \beta CA_{it-1} + \phi X_{it} + \varepsilon_{it},$$

where i and t represent the cross-sectional and time dimensions, respectively, CA stands for the current account-to-GDP ratio, and X represents other explanatory variables: the change in net output (GDP less investment and government spending), the fiscal surplus, relative income, the relative investment ratio, and the relative public expenditure ratio (relative to the sample average, to capture the catch-up effect of higher growth and investment in lower-income countries). Using dynamic panel estimation, this model is fitted to data from 21 industrial countries and the EU-acceding countries, plus Bulgaria and Romania. The results suggest that the lagged current account and the fiscal balance have a significant impact on the current account for the panel of countries studied.

Our paper modifies the above model in three ways. First, we use the goods and nonfactor services trade balance instead of the current account balance, in part because movements in the current account partly reflect large inward transfers, which are not germane to the links we are trying to identify. Second, we replace the investment ratio, net output, and relative income variables with the credit-to-GDP ratio and the change in GDP. In Bussière and others (2004), these variables reflect two catch-up effects on the current account: consumption smoothing in anticipation of higher future permanent income and higher investment driven by the higher return on capital in poorer countries. We capture these effects from the financing side, as both consumption and investment are financed either out of current income (GDP) or by borrowing. Third, we lag by one period the fiscal balance and the credit variable to reflect the lags with which they likely affect the trade balance; however, we do not lag the change in current income (GDP), which is spent upon realization. Our tested model therefore takes the following form:

$$TB_{it} = \alpha + \beta TB_{it-1} + \gamma \Delta Y_t + \phi X_{it-1} + \varepsilon_{it},$$

where i represents Bulgaria and Romania, TB the trade balance (goods and services), X contains the flow in credit and the change in the fiscal balance, and Y is the change in GDP. All variables are quarterly, scaled by GDP, and seasonally adjusted. The data period is too short to conduct stationarity tests, but the flow specification of the variables and scaling by GDP suggest likely stationarity. Using the cross-section generalized least squares estimator, and allowing country-specific effects for several variables, the model was fitted to the data. The results (Table 6) suggest that, over this sample period, changes in the flow of credit and the fiscal balance (one-period lag in each case) had significant (and, of course, opposite) effects on the trade balances in the two countries.

C. Risks for Banking Sector Stability

29. **Rapid credit growth can trigger banking sector distress through two channels: macroeconomic imbalances and deterioration of loan quality.** If the rapid expansion of bank loans leads to large current account deficits and is accompanied by fiscal deficits and inflationary pressures, as described in the previous subsection, an economy becomes increasingly vulnerable to macroeconomic shocks. A sudden reversal in capital flows or other external shocks, as well as the need for swift and drastic policy responses, could bring about a hard landing for the economy, as evidenced by higher interest rates, a slowdown in growth, a drop in asset prices, and pressures on the exchange rate. Whether this hard landing causes any distress for the banking sector will depend on the sector's exposure to those risks in relation to its financial buffers.

30. **Loan quality is not only susceptible to macroeconomic shocks but also to banks' excessive risk taking.** Risk assessments may suffer due to the vast amount of new loans extended. Loan officers may be overburdened and agree to riskier loans that are not appropriately priced. Moreover, lending booms can facilitate "evergreening" when new loans are used to service existing debt. At the same time, banks may neglect to further diversify their loan portfolios in an environment in which they can service existing clients. And finally, the perceived risk of loans may be underestimated during lending booms because the risk assessments are based on the current strong economy and rising values of underlying collateral.⁷

31. **Thus, rapid credit growth has been one of the most robust leading indicators for banking distress even though the majority of lending booms has not resulted in banking crises.**⁸ Numerous studies have found that periods of significant and accelerating credit growth often preceded banking crises.⁹ The likelihood of a banking crisis following a lending boom is estimated to be as high as 20 percent, depending on the data set and methodology used. Prominent examples include the Scandinavian banking crises in the early 1990s, Mexico's banking crisis in 1994, and the Asian financial crisis in 1997-98. As depicted in

⁷ As a result, in most countries lending is strongly procyclical: in upswings, lending is extended much faster than real GDP, and in recessions it contracts stronger than output.

⁸ The risks for financial sector stability are predominantly linked to the speed of credit growth rather than the stock of credit or money. Nevertheless, the level of financial intermediation may affect the costs for the economy of financial sector distress. See Hoelscher and Quintyn (2003) for an attempt to estimate the costs of financial crises.

⁹ Eichengreen and Arteta (2001) find robustness in these results by testing the findings of earlier studies by Gavin and Hausmann (1996), Kaminsky and Reinhart (1999), and Gourinchas, Valdes, and Landerretche (2001). Other papers that support the importance of lending booms for banking crises are, for example, IMF (2004), Drees and Pazarbasioglu (1998), Hardy and Pazarbasioglu (1998), and Demirguc-Kunt and Detragiache (1997).

Table 7, the ratio of credit to GDP increased rapidly in those countries, with the increase averaging 5.2 percentage points per year in the five years leading up to the crisis and dropping precipitously afterward.¹⁰

Table 7. Credit to GDP Ratio in Banking-Crisis Countries 1/
(In percent)

	<i>t</i> -6	<i>t</i> -5	<i>t</i> -4	<i>t</i> -3	<i>t</i> -2	<i>t</i> -1	<i>t</i>	<i>t</i> +1	<i>t</i> +2	<i>t</i> +3
Finland (<i>t</i> =1991)	60.1	63.9	69.2	78.3	81.2	86.0	93.7	89.8	81.0	69.0
Indonesia (<i>t</i> =1997)	45.8	45.5	48.9	51.9	53.5	55.4	60.8	53.2	20.5	21.1
Korea (<i>t</i> =1997)	52.6	52.2	52.2	53.8	53.2	57.6	64.8	71.7	79.5	87.6
Mexico (<i>t</i> =1994)	8.5	13.8	16.3	20.4	27.8	28.9	34.9	25.2	15.6	17.7
Norway (<i>t</i> =1987)	31.3	32.1	33.2	37.3	44.1	55.0	61.7	63.1	64.3	63.5
Philippines (<i>t</i> =1997)	17.8	20.4	26.4	29.1	37.5	49.0	56.5	48.0	42.0	39.2
Sweden (<i>t</i> =1990)	40.7	39.3	42.1	44.3	52.2	57.2	56.1	52.5	52.8	40.9
Thailand (<i>t</i> =1997)	67.7	72.2	80.1	91.0	97.7	101.7	121.1	114.6	108.1	85.7

Sources: IMF, *International Financial Statistics*; and IMF staff estimates.

1/ *t* is the year of the crisis.

32. Prudential indicators point to the strength of banks in Bulgaria and Romania, while Ukraine's banking system seems plagued by structural weaknesses (Table 8).

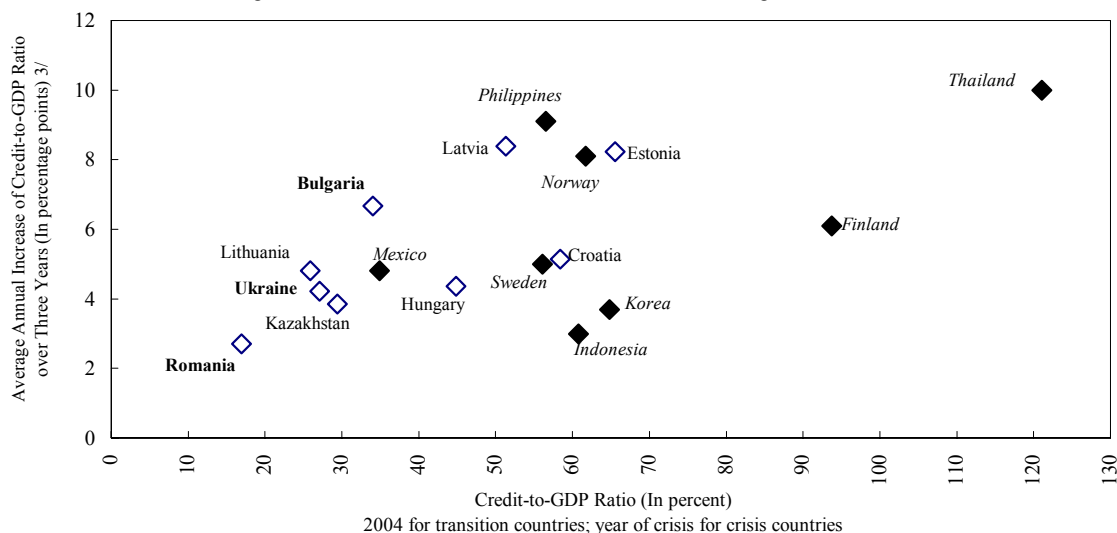
Despite the ongoing credit acceleration, banks in Bulgaria and Romania are well capitalized and liquid. Healthy profitability and low nonperforming loan (NPL) ratios foretell continuing credit expansion for years to come.¹¹ In contrast, Ukrainian banks suffer from large shares of related-party lending and NPLs, while profitability has remained low.

33. While macroeconomic imbalances are largest in Bulgaria and Romania, the risks from financial sector distress are highest in Ukraine. The level of credit in all three countries is still much below that of many prominent crisis countries, but the speed of credit expansion in Bulgaria and Ukraine has reached levels comparable to them (Figure 5). However, institutional and structural factors put the banking systems in Bulgaria and Romania on a much stronger footing than Ukraine's. In the EBRD's index on banking sector reform, both surpass Ukraine (Figure 6), and Bulgaria is now on par with countries that have already acceded to the EU. The large share of foreign ownership and relatively strong prudential indicators also indicate that the banking systems in Bulgaria and Romania are relatively well shielded from shocks. Nevertheless, credit risk through exchange rate exposure is a concern in all three countries, given the large shares of often unhedged foreign currency loans.

¹⁰ Cottarelli, Dell'Ariccia, and Vladkova-Hollar (2005) report that, in the years preceding banking crisis, countries' credit-to-GDP ratios grew by between 5 and 10 percentage points of GDP annually.

¹¹ The NPL ratio includes loans classified as substandard, doubtful, and loss.

Figure 5. Credit Growth in Transition Economies and Banking-Crisis Countries 1/ 2/



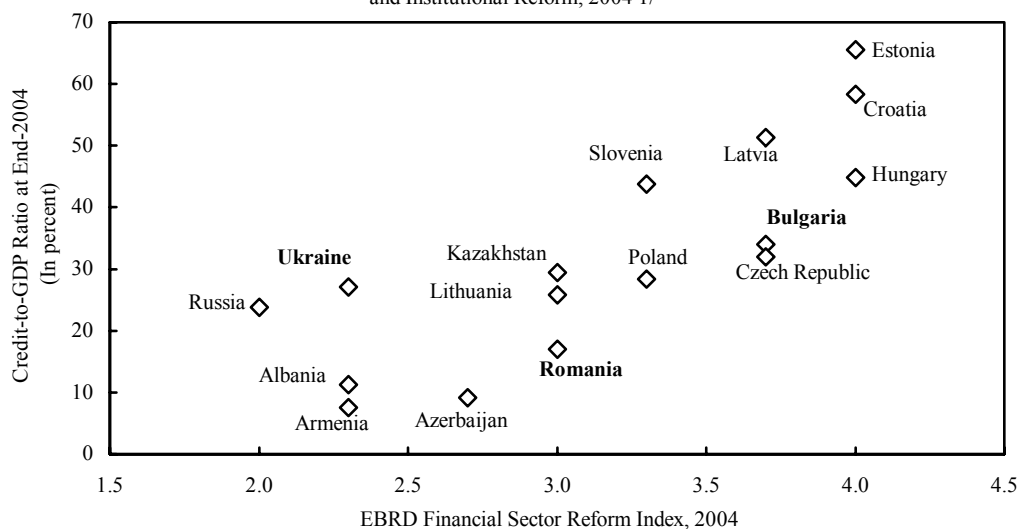
Sources: IMF, *International Financial Statistics*; and IMF staff estimates.

1/ Private sector credit.

2/ Crisis countries are depicted in italics.

3/ 2002-04 for transition countries. Biggest average annual three-year increase before crisis for crisis countries.

Figure 6. Transition Economies: Credit-to-GDP Ratio and Institutional Reform, 2004 1/



Sources: IMF, *International Financial Statistics*; *EBRD Transition Report 2004*; and IMF staff estimates.

1/ Private sector credit.

34. **The financial condition of banks in Ukraine remains opaque.** In light of widespread related-party lending practices, the only recently strengthened definitions of bank capital,¹² and weaknesses in banks' risk management and loan practices, as well as the lack of transparency in the enterprise sector, which impedes banks' risk assessment, the true resilience of banks to withstand a deterioration in credit quality is unclear. In particular, the buildup of cushions, in the form of capital and provisions, has not kept pace with the rapid credit expansion in Ukraine, and banks' profitability has remained much below those in most other transition economies. Poor asset diversification—due to the lack of other investment opportunities, about two-thirds of banks' total assets in Ukraine are loans, higher than in Bulgaria (56 percent of total assets), Romania (47 percent of total assets), or other transition economies—is another concern (see Schaechter (2005) for a more detailed analysis).

Table 8. Prudential Indicators of the Banking Sector, 2000-04
(In percent)

	2000	2001	2002	2003	2004
Bulgaria					
Capital adequacy ratios	35.6	31.3	25.2	22.0	16.1
Nonperforming loans/total loans	17.3	13.1	8.6	7.3	6.9
Return on assets	3.1	2.9	2.1	2.4	2.1
Return on equity	22.5	22.0	16.4	22.8	20.6
Liquid assets/total assets	26.0	25.5	29.3	25.5	31.6
Romania					
Capital adequacy ratios	23.8	28.8	24.6	20.0	18.8
Nonperforming loans/total loans	6.4	3.9	2.8	8.3	8.1
Return on assets	1.5	3.1	2.7	2.4	2.5
Return on equity	12.5	21.8	18.8	18.2	19.3
Liquid assets/total assets 1/	-	-	78.6	62.7	63.6
Ukraine					
Capital adequacy ratios	15.5	20.7	18.0	15.2	16.8
Nonperforming loans/total loans 2/	29.6	25.1	21.9	28.3	30.0
Return on assets	-0.1	1.2	1.2	1.0	1.1
Return on equity	-0.5	7.5	8.0	7.6	8.4
Liquid assets/total assets	20.8	15.3	13.5	15.3	16.7

Sources: Bulgarian National Bank; National Bank of Romania; National Bank of Ukraine; and IMF staff estimates.

1/ Liquid assets are assets with residual maturity of up to three months.

2/ The NBU estimates that about 94 percent of loans classified as substandard are being timely serviced.

¹² A major revision to the definition of capital was to exclude accrued income and tie the inclusion of revaluation gains of fixed assets to strict auditing procedures.

IV. POLICY OPTIONS AND AUTHORITIES' RESPONSES

35. Policymakers face a number of difficult questions in deciding how to respond to a credit boom:

- On what basis should the judgment be made as to whether credit is expanding too quickly? Are there speed limits?
- Assuming it is decided that credit is growing too quickly, how should the policy response be apportioned between (i) offsetting the effects of the credit boom with other policy instruments and (ii) moderating the credit boom itself?
- Is it advisable to use prudential measures for macroeconomic objectives?

36. Deciding whether a credit expansion is excessive or not is difficult both in general and for the three countries. During the convergence process, a certain degree of reintermediation, higher consumption and investment growth, and wider external current account deficits is to be expected. Unfortunately, the academic literature provides few reliable guideposts in answering the question of “how fast is too fast.” In principle, an equilibrium level of credit could be calculated, based on a country’s economic and institutional fundamentals.¹³ This can then be compared with the current level of credit. However, while such a calculation might provide a “target,” it does not provide any guidance on how rapidly a country should move to that equilibrium level. In the case of Bulgaria, the gap between the estimated equilibrium ratio and the actual has been narrowing very rapidly: in 2001, before the credit boom got into full swing, the credit-to-GDP ratio was 14½ percent, and by end-2004 it had reached about 35½ percent. Thus, the credit-to-GDP ratio rose by about 7 percentage points on average per year, a pace that has been associated with banking crises in other countries. In Romania and Ukraine, the credit-to-GDP ratio has risen more slowly, at 2½ and 4¼ percentage points, respectively, on average during the same period.

37. The test of whether credit is growing too rapidly should be based on the extent to which the risks identified earlier—macroeconomic and prudential—appear to be materializing. On the domestic side, is inflation (in goods, assets, and labor markets) rising, and if so, is this linked to the credit boom? On the external side, are trade/current account balances deteriorating beyond what could be deemed sustainable? In assessing the current account position, two questions are critical: (i) to what extent is rapid credit growth

¹³ Given the ongoing structural changes in such transition economies, however, these estimates of equilibrium credit must be taken with a grain of salt. A recent attempt at such estimates is Cottarelli, Dell’Ariccia, and Vladkova-Hollar (2005), who calculate equilibrium credit-to-GDP ratios for a number of CEECs. For Bulgaria and Romania, the estimated ratios are 52.6 percent and 58 percent, compared with ratios of 35.4 percent and 17.9 percent, respectively, at end-2004. These estimates are based on 2002 data and are now somewhat dated.

responsible for the deterioration in the current account balance? and (ii) what is the level of the current account balance that stabilizes the external debt-to-GDP ratio over the medium term?¹⁴ Answering the latter question depends crucially on assumptions regarding the future size of non-debt-creating inflows.¹⁵ Finally, an assessment of prudential risks would involve monitoring closely indicators of banking system health, such as NPL ratios, capital adequacy ratios, loan concentration ratios, and balance sheet mismatches (especially maturity and currency). Assessing such risks is a complicated task for supervisors, as it is difficult to disentangle boom excesses from equilibrium trends. In addition, certain indicators—for instance, NPL ratios—are lagging indicators of emerging risks, and reliable early warning indicators for banking fragility remain largely elusive.

38. These risks have emerged to varying degrees and in varying forms in Bulgaria, Romania, and Ukraine. As noted above, in Bulgaria and Romania external balances have tended to weaken beyond what would be considered prudent or sustainable levels, but no significant price pressures stemming from the credit boom have emerged. In Ukraine, the situation is reversed: the current account has been in a very large surplus and inflation has recently been trending up, driven mainly by large increases in social expenditure. On the prudential side, as previously discussed, the banking systems in Bulgaria and Romania appear to be healthy, while vulnerabilities are greater in Ukraine. Overall, these considerations point to a need to rein in these countries' credit expansions, a policy that has been pursued by all three in the past two years (see para. 40).

39. The menu of available policy options depends on the country's policy framework and institutional setting.¹⁶ The tools include macroeconomic policies (fiscal, monetary, and exchange rate policies), regulatory and supervisory policies, administrative measures (such as controls on capital inflows), and market development measures. Many credit boom countries have used a combination of the above policies. Constraints on policy options relate to the type of monetary/exchange rate policy framework and to the institutional setting: with a fixed exchange rate regime, traditional monetary policy tools (e.g., changes in interest rates, open market operations) are ineffective, particularly in cases with open capital accounts. In such a setting, efforts to drain liquidity from the domestic banking system to reduce funding sources

¹⁴ Aside from medium-term considerations, prudence suggests keeping the current account at manageable levels to reduce vulnerability to sudden reversals in capital. A recent survey of early warning system models by Berg, Borensztein, and Pattillo (2004) reports widespread use of the current account as one of the predictive variables. For instance, Goldstein, Kaminsky, and Reinhart (2000) find the current account deficit to be among the best predictors of currency crises.

¹⁵ In this context, imports related to FDI are often thought to be self-financing as they generate future exports; however, to the extent investment is made in nontraded sectors, this argument cannot be made.

¹⁶ For a fuller discussion of policy options, see Hilbers and others (2005).

will be frustrated: as long as returns on lending remain high, nonbank/cross-border flows will quickly replenish funding sources. Regulatory and supervisory policies aim to ensure banking sector health; their effectiveness in moderating credit growth has not yet been established, and there is a general consensus that such measures cannot substitute for monetary policy.¹⁷ Thus, if supervisors try to reduce credit growth, they may in fact divert it to less supervised channels (e.g., leasing companies). However, in combination with monetary policy, changes in the prudential regime can help avoid excessive credit growth. Administrative measures—for instance, general or bank-by-bank credit ceilings, or capital inflow controls—are generally viewed as a last resort, owing to their bluntness and distortionary effects. Finally, market development measures,—including establishment of credit registries to improve the credit culture and development of securities markets to reduce dependence on bank credit—may help, but the impact is likely to be marginal and of a more medium-term nature.

40. The authorities in the three countries understand the risks associated with the credit booms and have responded in varying ways and degrees to both offset and moderate rapid credit growth:

- In **Bulgaria**, policy options are constrained by the currency board arrangement. The main response has been a tightening of fiscal policy, both through higher revenue—reflecting mostly cyclical factors and improved compliance in the face of lower taxes—and expenditure restraint. A host of monetary measures—notably moral suasion, a tightening of reserve requirements and prudential supervision, and, most recently, quantitative restrictions on credit (enforced with the help of marginal reserve requirements for banks exceeding the limits)—have been implemented. The tightening of reserve requirements last year does not appear to have reduced credit growth, although such growth may have been even higher otherwise. It is too early to assess the impact of the quantitative limits on credit expansion that took effect on April 1, 2005, but a significant diversion to other forms of financing (nonbank/cross border) is likely. Going forward, it is possible that further fiscal tightening would be necessary should the monetary measures prove ineffective in preventing a further widening of external imbalances.
- In **Romania**, a combination of fiscal policy, monetary policy, and prudential measures has been used to both moderate and offset credit growth. Fiscal policy has

¹⁷ Dynamic provisioning is one technique that has been used to address risks arising from the procyclicality of credit. The main rationale for its use is to address a systematic underpricing of risk during cyclical upswings. Dynamic provisioning links the provisioning rates to the average probability of default for different types of assets over the business cycle (see e.g. Bank for International Settlements, 2001). However, the technique has generated objections from the accounting and tax professions on the grounds that these provisions do not relate to identified risks. Options for provisioning loans in partially dollarized economies are discussed in Del Mar Cacha and Morales (2003).

- been consistently tightened, with the general government deficit narrowing from 3.2 percent of GDP in 2001 to 1.1 percent in 2004. The NBR tried interest rate hikes in 2003 but had to reverse course in 2004, as falling inflation and large capital inflows made high real interest rates both unjustifiable and untenable. Moreover, these hikes merely changed the composition of credit in favor of foreign currency loans without reducing the overall credit flow. As the boom occurred mostly in loans to households, the NBR tightened households' eligibility for credit by lowering the ceiling on the maximum monthly payment-to-net income ratios, standardizing the downpayment for mortgage loans at 25 percent, and strengthening the required guarantees/collateral. Finally, the reserve requirement on foreign-currency-denominated bank liabilities was increased and extended to liabilities with residual maturity longer than two years. These measures did reduce credit growth somewhat, but a further fiscal tightening is likely to be necessary in the period ahead to support efforts on the monetary side.
- **In Ukraine**, the focus was on bank regulatory and supervisory measures. The NBU raised the minimum capital adequacy ratio, strengthened the definition of capital, tightened loan classification rules, raised provisioning requirements for foreign-currency-denominated loans, tightened related-party lending regulations, and put in place a new risk assessment methodology for its supervisors. These measures were aimed at strengthening banks' resilience to shocks. Credit growth decelerated during 2004 (even when the sharp drop during the political crisis is excluded), but it is unclear to what extent this can be attributed to the NBU's responses. Going forward, further progress in strengthening bank regulation and supervision, as well as the institutional environment, is needed, with particular focus on related-party lending.

V. CONCLUDING REMARKS

41. **Like other countries in central and eastern Europe, Bulgaria, Romania, and Ukraine have experienced rapid increases in bank credit to the private sector.** In part, this reflects economic convergence and a reversal of years of financial repression, and is likely to give a much needed boost to per capita incomes. However, the credit expansion has been excessive: in Bulgaria and Romania, from the point of view of macroeconomic stability; and in Ukraine, from the point of view of financial sector stability.
42. **The booms reflect broadly similar causes.** On the demand side, macroeconomic stabilization and robust growth have lifted households' confidence that rises in income will be permanent and boosted businesses' willingness to invest. As for credit supply, bank privatization, improved creditor rights, large capital inflows triggered by low credit demand abroad, and diminishing opportunities for alternative asset placements have increased banks' propensity to lend.
43. **The impact of the credit booms has varied in the three countries.** In Bulgaria and Romania, rapid credit growth has contributed to wider trade and current account deficits. This hypothesis was tested and confirmed with the use of a pooled regression, which also suggested a significant role for fiscal policy in offsetting the impact of rapid credit

expansion. In Ukraine, in contrast, concerns about the credit boom have largely reflected financial sector vulnerabilities.

44. **Policy responses in the three countries have been tailored to address the identified risks, but further action is probably necessary.** In Bulgaria and Romania, such action will probably continue to emphasize tighter macroeconomic policies, although supervisors will need to remain vigilant to ensure continued financial sector health, particularly as credit may be diverted to less supervised channels. In Ukraine, stronger prudential and supervisory policies will remain at the heart of efforts to reduce financial vulnerabilities. In all three countries, these efforts to maintain macroeconomic and financial sector stability will be part of a broader framework of prudent fiscal and incomes policies and structural reform.

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