

Credit Growth in Central and Eastern Europe Revisited

This short study builds on earlier work by Égert, Backé and Zumer that analyzes data up to the end of 2004 and presents updated results on the deviations of private sector credit-to-GDP levels from their estimated equilibrium levels in the ten new Central, Eastern and Southeastern European EU Member States and in Croatia. The study uses new data on lending and its determinants until end-2006, which show that the levels of private sector credit to GDP continued to catch up with their long-run equilibrium levels in 2005 and 2006. Moreover, in a few countries, credit levels have already become fairly elevated relative to the underlying fundamentals. The paper discusses implications for policymaking in European emerging economies on the basis of these developments, focusing on the contributions the most important policy domains can make to managing dynamic financial sector deepening and its implications for macroeconomic developments.

Peter Backé,
Balázs Égert
and Zoltan Walko¹

1 Introduction and Previous Analytical Work

Most Central, Eastern and Southeastern European (CESEE) countries have recorded high private sector lending growth in recent years, and the expansion of credit to this sector has become one of the key topics of the economic policy debate in the emerging economies of Europe. A comprehensive account of these issues can be found in Enoch and Ötoker-Robe (2007).

Given the continued fast growth of private sector lending, one of the focal questions that has increasingly moved center stage is whether credit expansion has become, or is about to become, excessive in the CESEE countries. A number of papers have addressed this question over the last few years (including Cottarelli, Dell’Ariccia and Vladkova-Hollar, 2005; Égert, Backé and Zumer, 2006, which also contains a concise literature overview; Boissay, Calvo-Gonzalez and Kozluk, 2007; Kiss, Nagy and Vonnák, 2006).

Building on the paper by Égert, Backé and Zumer (2006), whose time horizon ends in 2004, this short study essentially presents updated results. It uses new data on lending developments and its determinants until end-2006, and then addresses some implications for policymaking in European emerging economies.

Égert, Backé and Zumer (2006) use a panel cointegration framework in which private sector credit-to-GDP levels are regressed on a range of fundamentals for 43 transition and nontransition countries that are grouped into various panels and subpanels. The preferred specification contains five explanatory variables (“fundamentals”) to determine the ratios of private sector credit to GDP, namely (1) per-capita GDP in purchasing power parities, (2) public sector credit levels, (3) nominal interest rates (lending rates), (4) producer price inflation, and (5) the spread between lending and deposit rates (as a proxy for financial sector liberalization). Égert, Backé and Zumer use the coefficients derived from the estimations for a panel comprising small developed OECD countries to perform an out-of-sample analysis, assuming

¹ Oesterreichische Nationalbank, Foreign Research Division, peter.backe@oenb.at, balazs.egert@oenb.at (at the time of writing; now: balazs.egert@oecd.org), zoltan.walko@oenb.at. The standard disclaimer applies.

long-term parameter homogeneity. The purpose of the out-of-sample analysis is to examine whether the levels of private sector credit to GDP in the CESEE countries covered in this study (i.e. the ten new EU Member States from Central, Eastern and Southeastern Europe as well as Croatia) are in line with their fundamentals.²

Notwithstanding some degree of uncertainty (see annex), Égert, Backé and Zumer (2006) conclude that private sector credit-to-GDP levels have tended to approach their equilibrium levels in many (though not all) CESEE countries, in particular since the beginning of the current decade. In 2004, i.e. at the end of the period analyzed by Égert, Backé and Zumer, these levels were (still) below equilibrium in the Czech Republic, Poland and Romania, while they were within the estimated equilibrium range in Bulgaria, Croatia, Estonia, Hungary, Latvia, Lithuania, Slovakia and Slovenia – with continuing strong upward dynamics in Bulgaria, Croatia, Estonia, and Latvia.

The remainder of this paper is organized as follows. Section 2 summarizes developments in private sector lending in the CESEE countries since the end of 2004 and reports updated results on the deviation between equilibrium levels of private sector credit estimated for, and actually recorded in, these countries. Section 3 discusses policy implications and concludes.

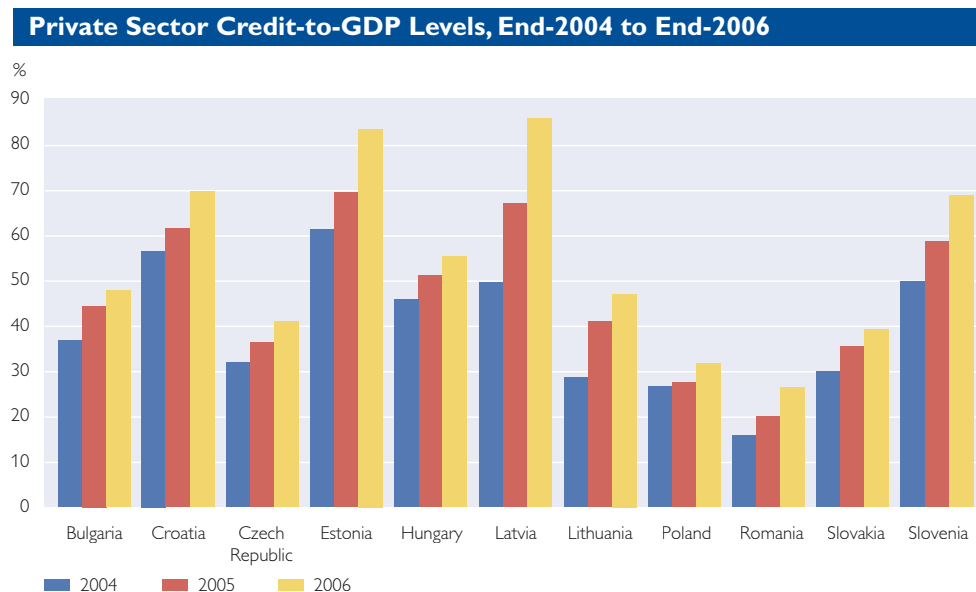
2 Recent Developments and Updated Results

During 2005 and 2006, the expansion of domestic credit to the private sector continued to persist in CESEE. To be more specific, growth picked up in the countries in which it had been subdued before (the Czech Republic, Poland and Slovakia) while remaining buoyant in the other countries. Only Bulgaria saw some moderation of domestic credit growth in 2005 and early 2006, albeit from very high rates, which was followed by a renewed pick-up after mid-2006. At the end of 2006, the annual growth rates of credit to the private sector ranged from 17% to 64% in the countries covered in this study. The Central European countries, Croatia and Bulgaria – the latter due to the aforementioned temporary dip in credit growth – were near the lower end of this range, and Estonia, Latvia and Romania at the upper end, while Lithuania took an intermediate position. In most countries, mortgage lending has continued to account for a large share of credit expansion, and real estate markets have been vibrant (for a more detailed account of private sector credit developments in CESEE, see OeNB, 2007a and 2007b, as well as Backé and Wójcik, 2007; for developments in real estate markets, see Égert and Mihaljek, 2007). Moreover, most recently, there seem to be some indications that the rapid expansion of credit to the private sector has been decelerating somewhat in the Baltic countries (see Sutt, 2007).³ Whether this is a transient dip or a more sustained development remains to be seen.

² For a more detailed account of the estimation strategy, see Backé, Égert and Zumer (2006).

³ In Lithuania and Latvia, year-on-year growth of credit to the private sector measured in real terms (i.e. adjusted by consumer price inflation) eased during the first half of 2007.

Chart 1



Source: IMF, Narodowy Bank Polski, OeNB.

Note: 2006 data for Poland extrapolated from national figures.

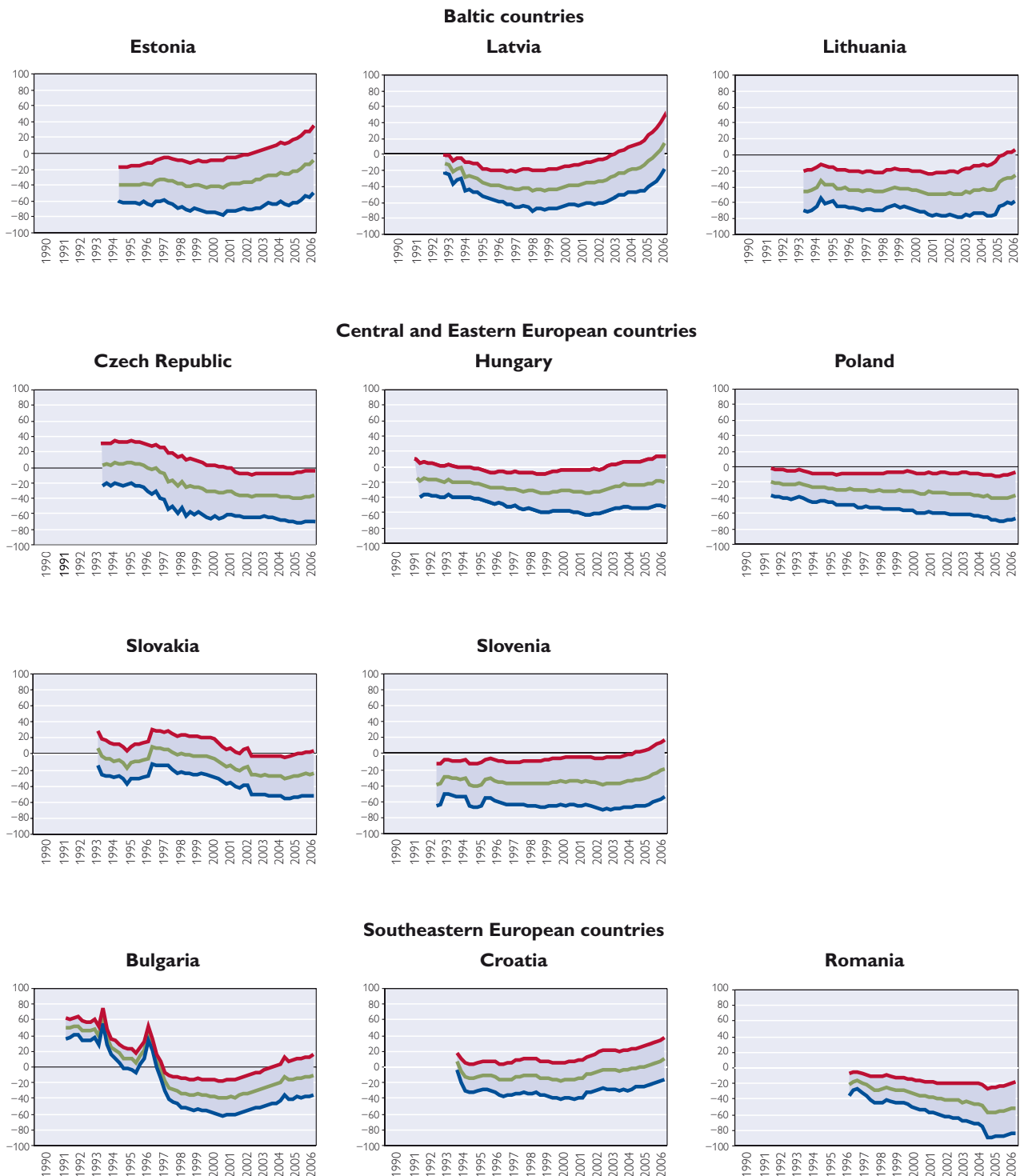
The 11 countries covered in this study continue to display very heterogeneous private sector credit-to-GDP levels (see chart 1). As of end-2006, these levels ranged from 26% to 86%, up by 15 percentage points (unweighted average) within two years; Poland recorded the lowest increase (5 percentage points), Latvia the highest (36 percentage points).⁴

At the same time, the fundamentals used in our model also tended to improve in 2005 and 2006, although not across the board: Per capita GDP levels rose tangibly; producer price inflation developments were uneven with a tendency to pick up in some countries; public sector credit levels displayed a mixed development; interest rates remained broadly stable or increased somewhat; and the spread between lending and deposit rates tended to remain stable or diminish somewhat in most CESEE countries under review (for more details on macroeconomic developments in CESEE countries, see OeNB, 2006a and 2006b; for the Baltic countries, see e.g. European Commission, 2007; or EBRD, 2006 and 2007).

How did these developments play out with respect to equilibrium and actual levels of private sector credit? To derive equilibrium credit levels for the emerging economies of Europe, we plug the data on CESEE fundamentals for 2005 and 2006 into the equation estimated for the small developed OECD economies. Then we juxtapose these estimated equilibrium levels with the levels actually observed 2005 and 2006, thus extending the results of our earlier paper.

⁴ In the first half of 2007, the increase in private sector credit-to-GDP levels appears to have moderated slightly in Estonia and Lithuania compared with the second half of 2006, while it was steady in Latvia, where some deceleration seems to be present in the third quarter of 2007.

Deviations from Long-Run Equilibrium Private Sector Credit-to-GDP, 1990 to 2006



Source: OeNB calculations.

Note: Negative (positive) values indicate that the observed private credit-to-GDP ratio is lower (higher) than what the fundamentals of a particular country would predict. 2006 data for Poland, extrapolated from national figures.

This exercise yields the following results (see chart 2): In the Baltic countries, Bulgaria, Croatia and Slovenia, the levels of actual private sector credit to GDP picked up further relative to their long-run equilibrium levels during 2005 and 2006. This increase was most pronounced in Latvia. In addition, a more moderate rise was also observable in Hungary. In the remaining countries under review, actual private sector credit-to-GDP levels by and large moved in tandem with the estimated equilibrium levels.

In 2005 and 2006, improvements in the set of fundamentals that feature in our model helped to lift the estimated equilibrium levels of credit to the private sector in all countries covered in this study, although to different extents. It is noteworthy that the impact of movements in these fundamentals was least pronounced in Bulgaria, Croatia, and Hungary. In the other countries, these movements had a larger upward impact on the equilibrium levels of private sector credit. However, the sizeable increase in actual credit-to-GDP levels in some countries more than offset the impact of improved fundamentals, so that private sector credit-to-GDP levels continued to inch up relative to their equilibrium levels during 2005 and 2006.

As a consequence of these developments, private sector credit-to-GDP levels in 2006 were still below equilibrium in Poland and Romania, and marginally below equilibrium also in the Czech Republic. In the other countries under review, they were within the estimated equilibrium range, though with considerable differences across countries. In Slovakia and Lithuania, private sector credit-to-GDP levels were (still) close to the lower bound of the estimated equilibrium ranges, while they were more elevated in Bulgaria, Estonia, Hungary and Slovenia. In Croatia and Latvia, private sector credit levels in 2006 were even higher, namely above the midpoints of the estimated equilibrium ranges, and were actually moving quite swiftly toward the upper bound of the estimated equilibrium ranges in the case of Latvia.

3 Policy Implications and Conclusion

Notwithstanding the caveats presented in the annex, our results for Croatia and Latvia may be interpreted as pointing to a risk of overshooting private sector credit levels, in particular if our findings were corroborated by empirical evidence derived from other models and frameworks. This may raise macroeconomic and financial stability concerns. In both countries, currency substitution is high, which adds to potential vulnerabilities while at the same time complicating the design of an appropriate policy response. A moderation of credit growth thus appears to be advisable with a view to preserving and underpinning stability. Developments would seem to require close monitoring in those CESEE countries in which private sector credit levels are elevated but still well within the equilibrium range.

Experience shows that a multipronged policy response is typically the most promising approach for dealing with lending booms that are considered to be, or that may become, too buoyant (see Hilbers, Ötoker-Robe and Pazarbasioglu, 2007). At the same time, administrative measures to curb credit growth often show little effect beyond a short time horizon, as circumvention takes hold over time. In a context of high capital mobility, administrative measures could presumably only be effective for a (somewhat) longer time span, if they

encompassed banks and nonbank financial intermediaries as well as domestic and cross-border lending (which would, in turn, effectively require a concerted action of home and host supervisors, given the high degree of foreign ownership of banks and other financial intermediaries in CESEE). However, apart from feasibility considerations and possibly legal aspects (free capital mobility), such a comprehensive approach would imply distortions which could hamper the efficient functioning of markets.⁵

There may be some room left to stiffen prudential regulations in CESEE countries – especially limitations focusing on the borrower side (debt service-to-income ratios, debt-to-equity ratios, etc.) and on currency mismatches (loan classification and provisioning, capital adequacy requirements). However, prudential regulations cannot be tightened much beyond international best practices and standards, both for legal reasons (e.g. harmonization of regulations across countries, partly owing to Basel II) and for reasons related to establishing a level playing field (including regulatory arbitrage).

Thus, standard macroeconomic instruments will have to play an important role in taming credit growth and, more generally, exuberant domestic demand. These instruments include fiscal policy (no further tax cuts; no spending of windfall revenue gains; removal of distortions in the tax and subsidy systems that encourage credit growth;⁶ the introduction of taxes on credit or interest payments), income policy (restraint in public sector and minimum wage increases) as well as structural policies (in particular, strengthened incentives to work⁷).

Monetary policy can make a meaningful contribution to taming credit growth (or moderating its effect on the economy) in countries with flexible exchange rate arrangements and a limited degree of currency substitution in financial assets and liabilities. In turn, in countries with fixed exchange rate regimes and/or a high degree of currency substitution, monetary policy (possibly apart from mandatory reserve requirements) does not seem to be the most obvious option for dealing with credit booms. Expanding monetary flexibility and thus making room for monetary tightening may help to contain credit growth, but presumably only to a limited extent. In particular, increased monetary autonomy would be of limited effectiveness, given the major role of foreign currencies in financing the domestic nonbank private sector (foreign currency lending by domestic banks plus cross-border borrowing), and monetary tightening may lead to even more currency substitution.

⁵ Moreover, it could be argued that such an approach would raise questions about its underlying assumption (namely, that a whole set of domestic and foreign economic agents are acting without appropriate care, while supervisors have superior information on what should be done) and also about the freedom of the financial sector to design and implement business strategies.

⁶ While the first two measures would, *ceteris paribus*, moderate total domestic credit growth, the third would directly affect private sector credit developments.

⁷ Again, such measures would indirectly affect private sector credit developments, either by moderating its effects on the economy or by helping underpin its sustainability. Wage moderation would dampen aggregate demand (fueled *inter alia* by credit growth) and possibly also affect the creditworthiness of borrowers, while structural reform measures would improve the supply side of the economy and thereby moderate gaps between aggregate demand and supply, which may have resulted to some extent from the demand-feeding effects of credit expansion.

At the same time, allowing for more exchange rate flexibility in countries with hard pegs and/or a high degree of currency substitution carries substantial risks. First, increased exchange rate variability may lead to depreciation pressure: Given the large external imbalances in many CESEE countries (in particular those with pegged exchange rates), there seems to be a substantial risk of an adverse initial financial market response to changes in the monetary regime. A major depreciation of the currencies may fuel inflation (from already elevated levels) and could have severe implications for financial stability, given the large unhedged foreign exchange exposure of households and small and medium-sized enterprises.

Second, alternatively, an interest rate hike may stabilize the currency but would presumably be relatively ineffective in cooling the economy (compare e.g. ECB, 2006). Moreover, in a setting of high capital mobility, capital inflows could easily thwart the rise of short-term interest rates.

Third, nominal exchange rate appreciation, in turn, facilitated by an increase in the domestic interest rate level, could have some dampening effect on aggregate demand. However, by putting the burden on the export sector, such a policy may do little to cool domestic demand (instead, it may fuel imports). Moreover, in the context of already high currency substitution, appreciation would lead to positive balance-sheet and wealth effects, which would further fuel domestic demand, at least in the short term.

Furthermore, monetary autonomy is in itself no guarantee against rapid credit growth, as several cases of CESEE countries with flexible exchange rate regimes demonstrate (e.g. Albania, Romania, Serbia). Finally, recent history provides no precedent of a country with a currency board arrangement, a particular hard-peg arrangement enshrined in law, exiting such a regime voluntarily. Allowing more exchange rate flexibility in these countries, subject to prior parliamentary approval, would thus imply a move into unknown territory.

Therefore, countries with hard pegs will find it expedient to put a high premium on taking timely and appropriate policy measures in fiscal, income and structural policies. In the event that these policies are not sufficiently supportive of the existing exchange rate commitments, hard pegs will eventually prove to be unsustainable. Moreover, policy consistency is key to containing vulnerabilities emanating from rapid credit growth and to ensuring the smooth continuation of the catching-up process.

To conclude, managing financial sector dynamics during a catching-up process is a complex task. Thus, analyzing, evaluating and, if need be, responding to private sector credit developments remains high on the political agenda in most, if not all, CESEE countries and is certain to do so for some time to come.

Editorial close: October 15, 2007.

References

- Arclean, C., O. Calvo-Gonzalez, C. More, A. van Rixtel, A. Winkler and T. Zumer. 2007.** The causes and nature of rapid banking sector credit expansion with particular emphasis on Central, Eastern and South-eastern European Countries. In: Enoch, C. and I. Ötker-Robe (eds.). *Rapid credit growth in Central and Eastern Europe: Endless Boom or Early Warning?* 13–46.
- Backé, P. and C. Wójcik. 2008.** Credit Booms, Monetary Integration and the New Neoclassical Synthesis. In: *Journal of Banking & Finance*. Forthcoming.
- Boissay, F., O. Calvo-Gonzalez and T. Kozluk. 2007.** Using fundamentals to identify episodes of “excessive” credit growth in Central and Eastern Europe. In: Enoch, C. and I. Ötker-Robe (eds.). *Rapid credit growth in Central and Eastern Europe: Endless Boom or Early Warning?* 47–66.
- Cottarelli, C., G. Dell’Ariccia and I. Vladkova-Hollar, 2005.** Early Birds, Late Risers and Sleeping Beauties: Bank Credit Growth to the Private Sector in Central and Eastern Europe and in the Balkans. In: *Journal of Banking & Finance* 29(1). 83–104.
- Égert, B., P. Backé and T. Zumer. 2006.** Private Credit in Central and Eastern Europe: New (Over)Shooting Stars? ECB Working Paper 687.
- Égert, B. and D. Mihaljek. 2007.** Determinants of House Price Dynamics in Central and Eastern Europe. In: *Focus on European Economic Integration 1/07*. Vienna: Oesterreichische Nationalbank. 52–76.
- Enoch, C. and I. Ötker-Robe (IMF; eds.). 2007.** *Rapid credit growth in Central and Eastern Europe: Endless Boom or Early Warning?* Houndmills and New York: Palgrave Macmillan.
- EBRD. 2006.** Transition Report 2006. London.
- EBRD. 2007.** Transition Report Update 2007. London.
- ECB International Relations Committee, Task Force Enlargement. 2006.** Macroeconomic and financial stability challenges for accession and candidate countries. Occasional Paper 48.
- European Commission. 2007.** Economic Forecast Spring 2007. Brussels. May.
- Hilbers, P., I. Ötker-Robe and C. Pazarbasioglu. 2007.** Analysis of and policy responses to rapid credit growth. In: Enoch, C. and I. Ötker-Robe (eds.). *Rapid credit growth in Central and Eastern Europe: Endless Boom or Early Warning?* 84–136.
- Kiss, G., M. Nagy and B. Vonnák. 2006.** Credit Growth in Central and Eastern Europe: Trend, Cycle or Boom? Paper presented at the conference “Finance and Consumption Workshop: Consumption and Credit in Countries with Developing Credit Markets” in Florence. June 16–17.
- Maeso-Fernandez, F., C. Osbat and B. Schnatz. 2005.** Pitfalls in estimating equilibrium exchange rates for transition economies. *Economic Systems* 29(2). 130–143.
- OeNB 2006a.** Developments in Selected Countries. In: *Focus on European Economic Integration 1/06*. Vienna: Oesterreichische Nationalbank. 8–41.
- OeNB 2006b.** Developments in Selected Countries. In: *Focus on European Economic Integration 2/06*. Vienna: Oesterreichische Nationalbank. 8–46.
- OeNB 2007a.** Financial Stability Report 13. Vienna. June.
- OeNB 2007b.** Financial Stability Report 14. Vienna. December.
- Sutt, A. 2007.** Credit growth in the Baltics: What’s next? Presentation at the East Capital Summit. Tallinn. May 30.

Annex

Economic and Econometric Caveats

To put our results into proper perspective, we would like to draw attention to some economic and econometric caveats.

Our model setting, in which the credit-to-GDP ratio is regressed on both supply-side and demand-side variables, implicitly assumes that the credit market is in continuous equilibrium.

In our model the dependent variable is the domestic private sector credit-to-GDP ratio. Direct borrowing from abroad by nonfinancial corporations and households (which is an important source of financing in particular for companies in CESEE) is thus not captured. However, our model does take into account the foreign funds that are intermediated to domestic nonfinancial corporations and households through domestic financial intermediaries.

Domestic credit incorporates equity holdings of banks. Such holdings are low in CESEE, relative to other country groups.

We do not disaggregate into credit to households and credit to nonfinancial corporations. Credit may be in equilibrium at the aggregate level but not necessarily in its segments.

Employing local currency interest rates as an explanatory variable may not fully capture effective interest rates in countries where the private sector holds large liabilities denominated in foreign currencies.

Using the spread between lending and deposit rates to capture financial liberalization is not fully ideal (as changes in the spread may also be caused by other factors), but this is still the most suitable proxy that is available for all countries covered in Égert, Backé and Zumer (2006).

Furthermore, expectations of future incomes which may affect the extent of borrowing against the future are not directly captured in the model.

The behavioral definition of equilibrium we use does not allow analyzing, within the model, the connection between credit levels and external sustainability or financial stability aspects or issues related to the currency or sectoral composition of credit.

The out-of-sample estimation method is a suitable approach to examine the deviation of credit levels from equilibrium for countries that come from a transition context (compare Maeso-Fernandez, Osbath and Schnatz, 2005, who first made this point in the context of equilibrium exchange rate analysis). However, this method does not yield country-specific constant terms for deriving the equilibrium credit levels for the CESEE economies. We deal with this issue by using the largest and the smallest constant terms obtained on the basis of the small developed OECD economies panel. This gives us a range of estimated values for private sector credit. Since the constant terms display a fairly wide variety, the ranges for the equilibrium credit levels also tend to be relatively large. This indicates a noticeable amount of uncertainty.

Finally, the equilibrium ranges should be interpreted as long-run ranges to which the CESEE countries converge. Given the ongoing structural convergence of CESEE countries with the benchmark sample of small developed OECD countries, the assumption of long-run parameter homogeneity seems to be a reasonable one.