DISCUSSION PAPER SERIES

No. 5520

HOUSEHOLD CREDIT IN THE NEW EUROPE: LENDING BOOM OR SUSTAINABLE GROWTH?

Fabrizio Coricelli, Fabio Mucci and
Debora Revoltella

INSTITUTIONS AND ECONOMIC PERFORMANCE (FORMERLY TRANSITION ECONOMICS) and INTERNATIONAL MACROECONOMICS

Centre for Economic Policy Research

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ISSN 0265-8003

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Fabrizio Coricelli, Università di Siena and CEPR
Fabio Mucci, UniCredit CEE
Debora Revoltella, UniCredit CEE

Discussion Paper No. 5520
March 2006

Centre for Economic Policy Research
90–98 Goswell Rd, London EC1V 7RR, UK
Tel: (44 20) 7878 2900, Fax: (44 20) 7878 2999
Email: cepr@cepr.org, Website: www.cepr.org

CEPR Discussion Paper No. 5520

March 2006

ABSTRACT

Household Credit in the New Europe: Lending Boom or Sustainable Growth?

Retail lending grew very fast in the New Europe region in the last years, prompting a debate on whether such a rapid growth can be considered sustainable. This paper investigates the main determinants of retail lending growth throughout the region. It tries to identify episodes of credit boom and analyzes the possible correlation between such booms, consumption booms and a country external account position. Estimating an aggregate consumption function, under the assumption of liquidity-constrained households, the paper finds that current trends in household credit markets largely reflect an equilibrium phenomenon, in which household credit increases rapidly from extremely low initial levels, in the context of a relaxation of liquidity constraints. The rate of growth of credit responds to changing market conditions on the supply side and to good prospects for income growth. In such an environment, loosening credit market conditions can have sizable effects on consumption, which, in some cases may create macroeconomic imbalances, both in terms of current account deficits and inflationary pressures.

JEL Classification: D14, E21 and E44
Keywords: credit booms, new members of the European Union and household credit

Fabrizio Coricelli
Dipartimento di Economia
Università di Siena
Piazza San Francesco 7
53100 Siena
ITALY
Tel: (39 05) 77 235 101
Fax: (39 05) 77 235 102
Email: coricelli@unisi.it

Fabio Mucci
UniCredit CEE
Via Tortona 33
20121 Milan
ITALY
Email: fabio.mucci@unicredit.it

Debora Revoltella
UniCredit CEE
via Tortona 33
20121 Milan
Italy
Tel: (39 02) 4762 4053
Fax: (39 02) 4762 4057
Email: debora.revoltella@unicredit.it

Submitted 27 January 2006

1. INTRODUCTION

Starting from very low initial levels, credit has rapidly increased in the last five years in the New Europe region[3]. Such rapid credit growth has put pressure on the balance of payments and raised concerns about the risks of financial crisis. Indeed, the empirical literature on emerging markets has found that rapid credit growth has always preceded financial and balance of payments crises (Gourinchas et al., 2001). However, roughly only twenty percent of very rapid credit growth is associated to crises. We thus believe further analysis is needed before judging credit growth in the New Europe countries as excessive.

Credit to households has been the most dynamic component of credit flows in the New Europe. Until five years ago, household credit was practically absent in the New Europe. Very high rates of growth are thus affected by such a low starting point. But is convergence the whole story? Evaluating the nature and the implications of such credit is crucial to discuss sustainability issues. In particular, we want to distinguish between movements towards a new equilibrium and cases of credit booms or excessive growth of credit.

The empirical literature on New Europe has identified credit booms as episodes of growth of credit-to-GDP ratios above a certain arbitrary threshold. Focusing on household credit, in this paper we follow a different approach. We first link household credit to consumption and try to identify the role of credit in reducing the impact of liquidity constraints on households. This allows us to characterize the impact of household credit on consumption, distinguishing between the share of credit that lifts liquidity constraints of households, from the share of credit used by those households that are not liquidity constrained. We estimate the share of liquidity constrained household that have access to credit to be rather low, less than 15%. This suggests that a large component of credit is directed to households that are not liquidity constrained. In this case, credit growth has no relevance for consumption. Moreover, because of the presence of a process of financial deepening and convergence towards higher ratios of credit-to-GDP ratios, inevitably we observe that credit growth is higher than consumption growth.

Second, we identify credit booms as episodes in which the cyclical component of the credit-to-GDP ratio passes a pre-defined threshold. We also check whether such episodes of credit boom are associated with a consumption boom and with significant deteriorations of the current account. We observe very few episodes of consumption boom in New Europe and little correlation between credit booms and consumption booms. We also test more formally the relationship between trade balance performance and credit growth, distinguishing between households and corporate credit and including fiscal performance and FDI inflows as additional

[3] We define as New Europe the group of CEE new EU members plus other EU acceding or converging economies. In particular, we consider Poland, Slovakia, Hungary, the Czech Republic, Estonia, Latvia, Bulgaria, Romania, Croatia and Turkey. Due to unavailability of data, Slovenia and Lithuania have been excluded from the analysis.

explanatory variables. We find that households credit growth induces a deterioration of the trade balance all over the region. The corporate sector is however playing a strong role as well. The combined impact of corporate credit and FDI inflows on the trade balance is indeed stronger than that of households credit. This a reassuring evidence, as a deterioration of the trade balance linked to the corporate sector is generally associated to an increase in production capacity (and this is definitely the case when FDI are considered).

Section 2 of the paper provides a snapshot of the New Europe household lending market. We have built a new database, which allows a comparison among countries, adding up different forms of households debt, both from banking and non banking financial institutions.

To obtain a clearer view of current trends in the New Europe, Section 3 examines the factors behind growth in households debt, looking at both demand and supply. In particular, we try to understand if the current level of credit growth throughout the region is compatible with a movement towards a new equilibrium, in the context of gradually relaxing credit rationing conditions.

Section 4 discusses whether the current level of household debt is sustainable in the medium to long run, distinguishing between microeconomic and macroeconomic implications of rising households debt. We further present an empirical analysis of the effects of lending growth on trade balance at single country level distinguishing between credit extended to households and firms. Section 5 concludes.

2. HOUSEHOLD DEBT MARKET IN THE ENLARGED EUROPE

Over the last ten years, the households lending market has grown considerably at the international level, reflecting structural changes in the financial sector. The increase in households gross financial and non financial assets has gone hand in hand with an increasing financial deepening of the liability side of their balance sheets. Retail has become increasingly relevant for banking and non banking financial institutions, not only in the most developed financial systems (the US and UK), but also in the main European and EU converging countries, albeit in different ways.

In the Eurozone, households loans increased from around 40% of total loans in 1995 to 45% in 2004. The increase in households indebtedness has mainly been driven by mortgage lending, sustained by extremely favourable financial conditions and rising property prices, which have generated greater wealth for home owners and increased the value of properties used to secure loans. On the other side, increasing cross border competition (direct or indirect) enhanced quality of products and more generally supply conditions. In the Eurozone, mortgages have

risen sharply. In 2004 mortgages accounted for 68% of the total, compared with 59% in 1998. On the overall, total credit to households increased from 45.5% of GDP in 1995 to 50% in 2004.

Although it would be inappropriate to speak about a unique Eurozone retail lending model, as market maturity and supply conditions vary significantly across Eurozone countries, there have been common trends (Aleati and others, 2005).

The experience of countries of the previous accessions, Greece, Ireland, Portugal and Spain, is particularly relevant for New Europe countries [Brzoza-Brzezina (2005), HNB Financial Stability Report (2005)]. Indeed, on the wake of their accession into the Eurozone started in the mid Nineties, those countries experienced an accelerated pattern of credit growth, with real annual rates close to 30%, largely driven by the mortgage market. In Portugal, credit growth accelerated starting from 1995-96, with a peak in 1999 and a subsequent stabilisation, which lead to a bust in economic performance. In Ireland the upward trend started in 1995, with a peak in 1998 and subsequent revival in recent years, while in Greece, the pick up recorded in 1995 still has to guarantee long lasting effects in terms of financial market development, with the level of households debt over GDP in the country, at 31%, well below the Eurozone average.

TABLE 1 – FORMS OF DEBT

	Eurozone		**New Europe** [(1)]	
	2000	**2004**	**2000**	**2004**
Growth in debt (% annual average 2000-2004)	**7%**		**23%**	
- Growth in mortgages	8%		43%	
- Growth in consumer credit	2%		13%	
- Growth in other loans	4%		21%	
Debt/Gross disposable income (%)	**68%**	**75%**	**9%**	**18%**
Debt/GDP (%), of which:	**46%**	**50%**	**7%**	**12%**
- Mortgages (% GDP)	29%	34%	1%	4%
- Consumer credit (% GDP)	7%	7%	4%	5%
- Other loans (% GDP)	9%	9%	2%	3%

NB: (1) The total for New Europe does not include Lithuania and Slovenia as data are not available; other loans include current account overdrafts, credit cards, financial leasing and other loans.
Source: UniCredit New Europe Research Network database, based on ECB, National Central Banks and Eurostat.

Accelerated growth in households debt has characterised all New Europe countries as well. Despite the much lower financial penetration in the region, compared to the Eurozone level, the observed patterns of development largely resemble those of the more advanced neighbouring countries: a fast growth of retail, which thus becomes the most dynamic segment for banking and non banking institutions, driven first by the consumer part and, since 2000, by the mortgage market. Structural as well as cyclical factors might explain such growth.

Credit expansion has been grounded all over the New Europe countries in an environment of strong economic growth and generally falling inflation and interest rates. Driven in most of the

cases by strong domestic demand, economic growth has averaged between around 3% and 8% in the last four years, approaching 4% at the regional level. High inflation countries, like Turkey and Romania have experienced in the last years a very successful stabilisation process, which allowed inflation to finally pass to one digit levels in 2005. All the other countries as well have seen a normalisation of the inflation pattern. Interest rates have been on a generally decreasing trend (or at absolute low levels).

The transition process and EU convergence suggest increasing demand for both consumer and investment goods, as income growth expectations lead to an inter-temporal consumption smoothing. At the same time, despite the average regional home ownership rate is quite high (69%, compare to 70% at the Eurozone level), house investment demand (new or restructuring) is increasing as income increases and rates decline, with old apartments, mostly coming from the socialist era, being generally small and of poor quality. Moreover, there is a positive one-off effect coming from demographic trends, with the baby boom generation now adding to houses demand.

The supply side as well played a strong role in supporting market growth. At the beginning of the Nineties, banks book portfolios were mainly geared towards the corporate sector and the retail lending market was virtually absent. In the last few years all the local banks, most being under foreign control, started to develop aggressive growth strategies in the market, by providing new services and products. Competition, even if still focused, has increased rapidly, driving down margins. Household loans are the fastest growing market in the region's financial sector: in 2004 they accounted for 38% of total bank loans, compared to 23% in 2000.

Thanks to both demand and supply, as a percentage of GDP, households loans have practically doubled, from 7% in 2000 to 12% in 2004. As obvious, growth of retail loans has been particularly fast in those countries which had a small market, like Bulgaria, which experienced a real growth rate of retail credit of about 58% in 2000-2004, or Romania (106%). In terms of composition, household debt was mainly in the form of consumer credit in the 1990s (consumer credit and other loans represented 80% of household debt in 2000). The expansion of the last few years has led to a radical shift. In line with developments in the Eurozone, mortgages have been the main driver behind the boom and have grown by an average 43% a year, fuelled by both demand- and supply-side factors. Mortgages now represent 36% of the total retail lending market, while consumer and other credit the 64%.

TABLE 2 – STRUCTURAL INDICATORS

	Households Debt/GDP 2004[v]	Mortgage/ Households Debt 2004	Real lending growth (CAGR '00-'04)	Mortgage growth – Consumer growth (CAGR '00-'04)	Avg Int. Rates Level (2000)[i]	Avg Int. Rates Level (2004)[i]	Avg inflation 2000[iii]	Avg inflation 2004[iii]	Avg Economic growth 2000-2004 (CAGR)
Romania	5%	29%	106%	11%	52%	26%	46%	12%	6%
Latvia	19%	64%	68%	32%	13%	9%	3%	6%	7%
Bulgaria	12%	22%	58%	21%	17%	13%	10%	6%	5%
Hungary	20%	48%	45%	43%	22%	15%	10%	7%	4%
Estonia	24%	70%	39%	17%	11%	6%	4%	3%	7%
Croatia	32%	37%	26%	5%	12%	8%	6%	2%	4%
Czech R.	14%	55%	25%	10%[ii]	9%	8%	4%	3%	3%
Slovakia	10%	55%	21%	-32%[iv]	14%	7%	12%	8%	4%
Poland	13%	31%	10%	32%	14%	7%	10%	4%	3%
Turkey	6%	10%	4%	10%	49%	34%	53%	10%	4%

Note: i) Figures refers to interest rates on local currency credits applied to retail customers. In Croatia, interest rates on long-term kuna credits indexed to foreign currency. ii) CAGR 2001-2004. iii) Harmonised indices of consumer prices, annual average rate of change. iv) In Slovakia, the less dynamic growth in the mortgage lending in 2000-2004 is mainly related to the building societies component, due to decrease of subsidies. Loans granted by non-bank financial institutions excluded from total individuals liabilities. v) For Hungary, Estonia and Latvia, total liabilities exclude other account payable (AF.7).
Source: UniCredit New Europe Research Network Database, based on Eurostat, National Central Banks

3. MAIN DETERMINANTS OF HOUSEHOLDS DEBT

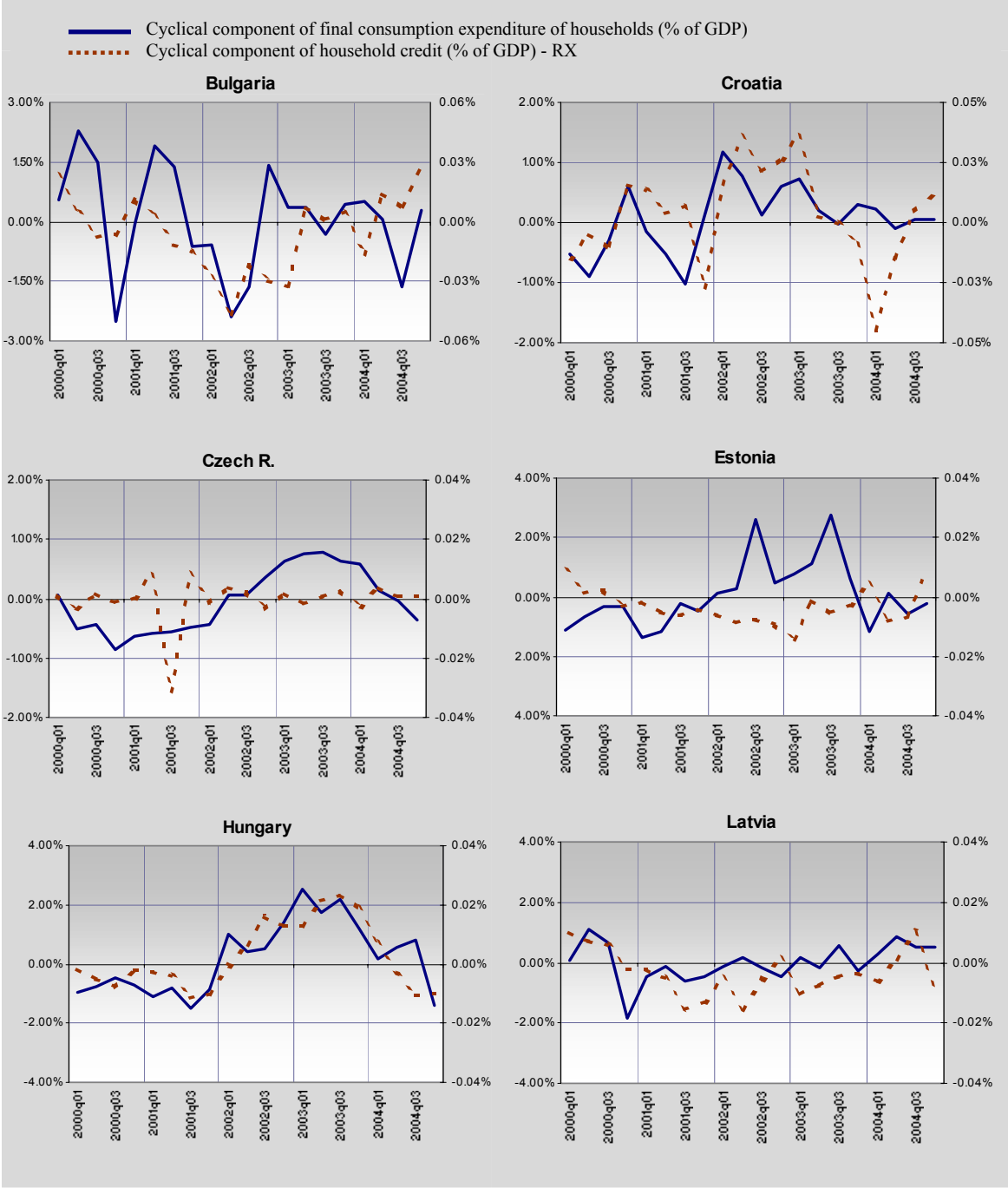
As anticipated, the rapid expansion of household credit in New Europe is likely to reflect both supply and demand factors. Expectation of sustained growth, as a result of integration in the EU, raised consumer demand. At the same time, entry of foreign banks, competition for a growing retail market and a more stable macroeconomic environment have reduced the cost of loans. Moreover, a large proportion of households in New Europe is likely to be liquidity-constrained, as they have low levels of current income and financial wealth and the stock of consumer credit is very low. If this is the case, a large component of expansion in household credit can be associated to the loosening of liquidity constraints.

3.1 Relevance of Liquidity Constraints

We investigate the relationship between the dynamics of consumption and that of household credit, to have a first indirect test for the relevance of liquidity constraints in the New Europe. Our sample consists of 42 quarterly observations for each country on real consumption during the interval from 1995:01 to 2005:02 and 26 observations on real credit to individuals from 1999:01 to 2005:02. The cyclical component for both series has been extracted using the HP

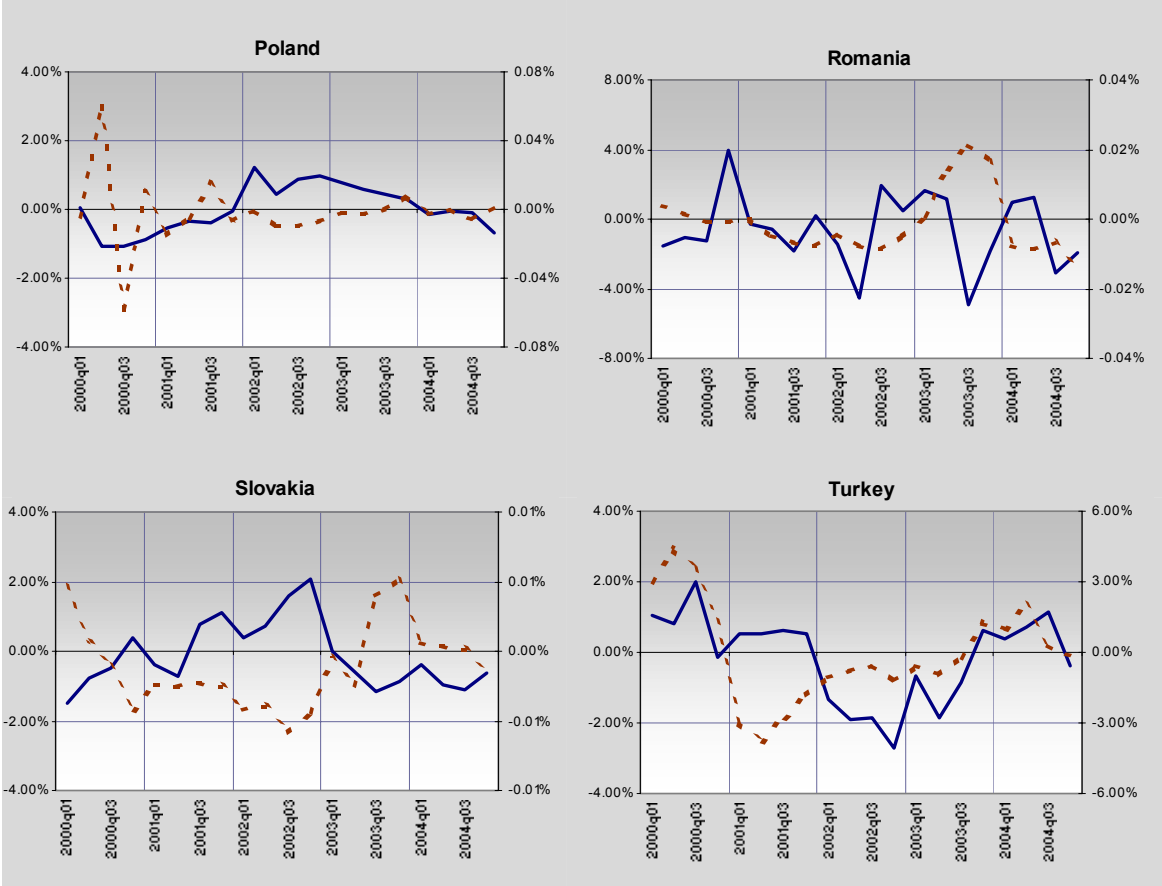
filter with a smoothing parameter of 1600 (the standard choice for quarterly data)[4]. Note that, as in Bacchetta et al. (1997), we consider both housing credit and consumer credit as determinants of consumption. By accessing credit markets for mortgages, households indeed can free resources for consumption.

CHART 1 – CYCLICAL COMPONENT OF CONSUMPTION AND CREDIT



[4] The H-P filter is sensitive to the begin and end value of the series. The results highlighted are however quite similar to those found by Hilbergs and others (2005), using different methodologies, which account for this problem. As a standard remedy to the endpoint bias, we ignore two quarters from both ends of samples (i.e. every sample ends at 2004).

CHART 1 – CONTINUED



Note: dotted lines represent in all graphs the cyclical component of real credit to individuals as a percentage of GDP while blue ones the cyclical component of real final expenditure of individuals (as a percentage of GDP) extracted using HP filter. Credit series have been deflated using the harmonised indices of consumer prices and are shown on RX axis.
Source: UniCredit New Europe Research Network database, based on Eurostat and National Central Banks.

A first interesting result comes from the analysis of the trends, which appear to be positive in all countries for both consumption and households credit with the only exception of Poland where the slight downward slope of credit trend reflect the boom/bust cycle following the marked economy slow-down in the second half of 2000. Overall, this confirms structural developments in terms of convergence in standards of living of the population towards the EU and increasing financial deepening.

To have some insight on the role of liquidity constraints, we focus on consumption, income and credit. In a world with perfect financial markets and no liquidity constraints for individuals, households would be free to smooth consumption over time. Volatility of consumption would be low and possibly lower than the volatility of real GDP[5]. By contrast, when households face liquidity constraints and limited access to lending markets, consumption would be more volatile and its dynamics would follow changes in the availability of credit.

[5] Better if comparison is with volatility of disposable income, which was not available however.

Table 3 shows that consumption volatility throughout the region, measured as the standard deviation of the cyclical component normalised by the series average, tends to be much higher than in the Eurozone economies and generally higher than real GDP volatility. Despite fast growth of the retail lending market, it seems that credit is not able to smooth consumption. Moreover, the volatility of consumption tends to be higher than that of income, providing some evidence of presence of liquidity constraints.

TABLE 3 – CONSUMPTION AND REAL GDP VOLATILITY(1) AND CREDIT-CONSUMPTION CORRELATION

	Coeff. of variation of real consumption	Coeff. of variation of real GDP	Corr(cons, credit)(2)
Bulgaria	4.76%	3.39%	0.3
Czech Rep	2.64%	1.76%	0.1
Croatia	1.28%	1.14%	0.4
Estonia	3.00%	1.94%	-0.5 (0.1 five lags)
Hungary	1.85%	0.40%	0.8
Latvia	1.80%	1.37%	0.04
Poland	1.18%	1.59%	-0.1 (0.1 three lags)
Romania	4.83%	2.79%	0.02 (0.2 two lags)
Slovakia	1.98%	1.01%	-0.3 (0.2 three lags)
Turkey	4.76%	3.90%	0.4
Belgium	0.77%	0.75%	0.2
Germany	0.87%	0.76%	0.3
Spain	1.00%	0.54%	0.4
France	0.67%	0.72%	0.3
Greece	0.67%	1.00%	-
Italy	0.68%	0.71%	0.5
Netherlands	1.19%	0.92%	-0.2
Portugal	1.09%	1.08%	-0.1

Note: (1) Volatility is computed as the standard deviation of the cycle, divided by the mean of the trend. Countries with relatively higher volatility of consumption compared to real GDP have been highlighted in bold. Both for consumption and real GDP, the cyclical component have been extracted from series in levels; (2) Based on series taken as percentage of GDP.
Source: UniCredit New Europe Research Network Database and Eurostat.

In all NE countries, with the exception of Poland, volatility of consumption is well above the Eurozone levels (particularly high volatility levels are detected in Bulgaria, Romania, Turkey and Estonia). The difference between the volatility of consumption and that of income is particularly high in Romania, Hungary and Estonia.

We next turn to an econometric analysis of the dynamics of consumption and household credit. In a context of widespread liquidity constraints on household consumption, one cannot estimate directly the "drivers" of the expansion of household credit, as the main component of demand, consumption growth, depends in turn on availability of credit. To overcome this problem, we analyse the dynamics of household credit looking at the dynamics of consumption, affected by credit supply, and by analysing the dynamics of credit supply as a function of interest rates on loans. Similarly to our previous analysis, we consider both housing and consumer credit as determinants of consumption.

In the empirical analysis of consumption we depict the economy as composed of three types of households:

- first, there are those households that are not liquidity- constrained and can thus choose their optimal consumption path on the basis of their permanent income. These households de facto live in a world with perfect financial markets: they have sufficient financial wealth to make at the margin their consumption choice unconstrained by their current income. Moreover, they can freely access credit markets because, at the margin, the possibility to draw down their financial wealth is equivalent to having free access to credit markets.
- By contrast, the second group of households face liquidity constraints and their consumption is constrained by their current income.
- Within this group we can distinguish the final segment, namely those liquidity-constrained households that have access, albeit limited, to consumer credit markets.

Of course, a microeconomic analysis on household finance and consumption behaviour would allow us to identify these three groups of households. Nevertheless, macroeconomic data can be used to indirectly infer the relevance of liquidity constraints and the weights of the different household groups. This inference should be considered, however, as illustrative of an heterogeneous underlying structure of households finance and consumption.

We now turn to a simple characterization of consumer behaviour and of consumer credit supply that serves as a motivation for our empirical analysis. Inter-temporal optimisation by consumer in an economy with perfect financial markets leads to the well known Euler equation on consumption dynamics:

$$E_t \Delta c_{t+1}=\beta+\sigma(E_t r_t-\delta) \qquad (1)$$

where σ denotes the inter-temporal elasticity of substitution and β is the conditional variance of $\Delta c_{t+1} - \sigma r_t$, which we assume to be constant; δ denotes the subjective rate of time preference and r_t is the real rate of interest. E_t denotes the expectation operator.

Grouping constant terms and lagging one period equation (1), we obtain:

$$E_{t-1} \Delta c_t = \beta' + \sigma E_{t-1} r_{t-1} \qquad (2)$$

with $\beta'= \beta -\sigma\delta$

Thus, when consumer can optimally select their consumption plans, without facing any liquidity constraint, the change in consumption is a function only of the real interest rate. If one assumes that such real interest is constant, consumption will follow a random walk.

However, consumers, at least a fraction of them, are likely to be constrained in their consumption decisions not only by their intertemporal budget constraint, but also by liquidity constraints. In such a case the change in real consumption is going to be sensitive to changes in real incomes.

Furthermore, liquidity constrained consumers can adjust their consumption if they have access to household credit (HC). A general formulation of an equation for consumption dynamics is thus (see also de Bondt, 1999):

$$\Delta c_t = \beta'' + (1-\lambda_1-\lambda_2)\,\sigma\, E_{t-1}\, r_{t-1} + (\lambda_1+\lambda_2)\,\Delta y_t + \lambda_2\,\Delta HC_t \qquad (3)$$

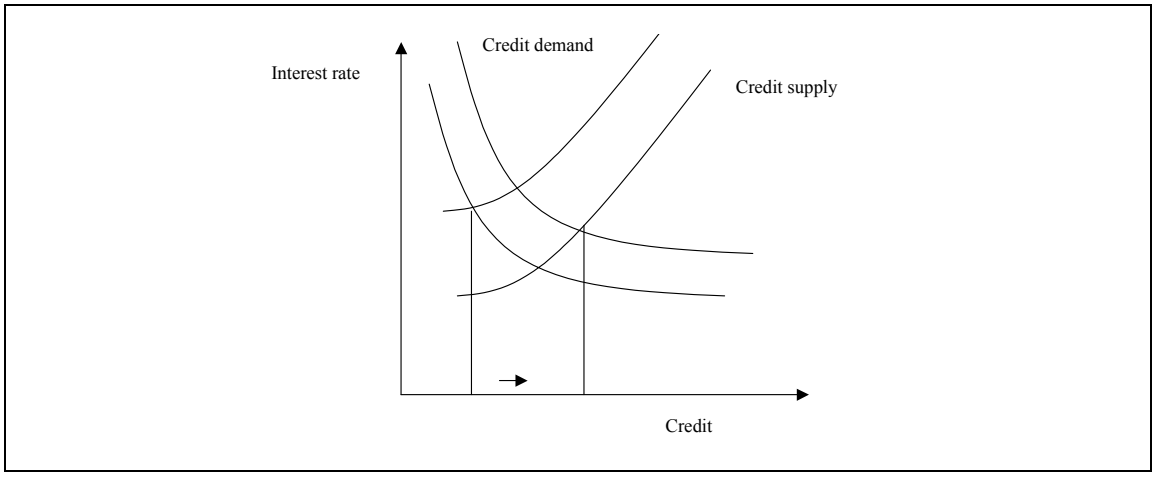
where λ_1 denotes the share of households which are liquidity constrained but have no access to credit, in contrast with the other group of liquidity constrained consumers, which has weight λ_2. ΔHC_t denotes the change in the supply of household credit. β'' is the constant term, equal to $(1-\lambda_1-\lambda_2)^* \beta'$.

Furthermore, credit conditions can vary depending on the overall cyclical conditions of the economy (de Bondt, 1999):

$$\Delta HC_t = a - bi_{1t-1} + c\,(i1 * \Delta y)_{t-1} \qquad (4)$$

The lag on the interest rate term captures the delay with which changes in interest rates are transmitted to loans. If changes in credit reflect shifts in credit supply, for given demand, the coefficient on the lending interest rate would be negative, with the effect partly offset during economic expansion. The coefficient b can thus be interpreted as reflecting the shifts in the supply schedule. We can model the change in the supply of household as a function of the interest rate on loans (see Chart 2).

CHART 2 – CREDIT DEMAND AND SUPPLY



We can plug equation (4) in equation (3), assuming constant real rates, to obtain:

$$\Delta c_t = \beta''' + (\lambda_1 + \lambda_2)\ \Delta y_t + \lambda_2 (a\text{-}bi_{1t-1} + c\ (i_1\ *\ \Delta y)_{t-1}) \qquad (3')$$

We estimate equations (3') and (4) on quarterly data for a sample of 10 New Europe countries over the period 2000-2004. Given the relatively short time series, we estimate a panel and identify country-specific effects through fixed effects. For the consumption equation we use GMM to tackle the endogeneity of the variables included as regressors. Fixed effects are used as countries are at different stages of development and thus on different consumption trajectories. Table 4 and table 5 contains the results of the estimation of equations (3') and (4). Signs of coefficients are as expected and they indicate the relevance of liquidity constraints on consumption and the strong supply effect in the growth of household credit.

In the consumption equation, the effect of household credit conditions is highly significant. The hypothesis that the cyclical impact of credit market conditions - namely that tightening of credit conditions has larger effects during a slowdown of economic activity, rather than during an upturn - is not confirmed by the regression.

The coefficients on the change in real output, from equation (3'), can be interpreted as the share of liquidity-constrained households. For a given estimate of b in equation (4), a higher coefficient on the interest rate in the consumption equation implies a higher share of liquidity-constrained households that have access to consumer credit markets. From equation (4) we can conclude that supply effects have been very relevant in explaining the dynamics of consumer credit during the sample period. Indeed, a negative coefficient on the lending interest rate is consistent with upward shifts in the credit supply schedule. From equation (3') we get the share of liquidity-constrained households, which appears to be large, at 53%. Combining equations (3') and (4) we can infer that among the liquidity constrained individuals, only 13% have access to credit. The coefficient on the change in real output is quite high and much larger than that found by de Bondt (1999) for Eurozone countries.

It is important to note that the total share of households with access to consumer credit includes as well those households that are not liquidity-constrained. In principle, all of these households have potential access to consumer credit, but of course not all of them use this opportunity.

It is conceivable that at early stages of development, the larger share of consumer credit relates to households that are not liquidity-constrained. This can be explained by the fact that non-liquidity-constrained households are those with higher financial and non financial wealth, that can be used as collateral. Given the low starting point of the household-credit- to- GDP ratio, increases in the access to consumer credit markets by liquidity-constrained households will have large effects on the rate of growth of credit and of consumption.

TABLE 4 – CONSUMPTION EQUATION –

GMM, fixed effects; sample : 2000Q1 2004Q4

Dependent variable: rate of growth of real consumption

List of Instruments: Consumption growth(-2, -3); interest rate (-2,-3); first difference of interest rate; real gdp growth (-2, -3); household debt-to-gdp (-4)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
(IRL) Rate of interest on household loans(-1)	-0.158490	0.056680	-2.796222	0.0059
(RGDP)Real GDP growth	0.537876	0.219278	2.452944	0.0154
Interaction term ((IRL*RGDP)(-1))	-0.000658	0.002813	-0.234060	0.8153
C	5.890646	2.063996	2.854001	0.0050

R-squared	0.934035	J-Statistics	15.48196
Adjusted R-squared	0.928172	pval	0.346
F-statistic	65.48786		
Prob(F-statistic)	0.000000		

TABLE 5 – CREDIT EQUATION

Panel EGLS (Cross-section weights), Sample (adjusted): 2000Q2 2004Q4

Dependent variable: rate of growth of credit

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Rate of growth of credit(-1)	0.849908	0.043293	19.63148	0.0000
(IRL) Rate of interest on household loans(-1)	-2.107118	0.407175	-5.174975	0.0000
(IRL) Rate of interest on household loans(-2)	1.244000	0.670621	1.854998	0.0658
(IRL) Rate of interest on household loans(-3)	-0.480657	0.652837	-0.736259	0.4629
(IRL) Rate of interest on household loans(-4)	1.166952	0.393119	2.968443	0.0036
C	98.17672	6.429082	15.27072	0.0000

	Weighted Statistics
R-squared	0.983188
Adjusted R-squared	0.981419

Overall, the results indicate that current trends in household credit markets largely reflect an equilibrium phenomenon in which household credit increases rapidly from extremely low initial levels. The rate of growth of credit indeed appears to respond to changing market conditions on the supply side and to good prospects for income growth. Nevertheless, because of the presence of severe liquidity-constraints, loosening credit market conditions has sizable effects on consumption, which, in some cases may create macroeconomic imbalances, both in terms of current account deficits and inflationary pressures.

Our fixed effects estimates indicate significant differences across countries, with stronger than average positive shifts in consumption in Romania, Turkey and Hungary, while stronger than average positive shifts in the supply of credit in Romania, Bulgaria and Latvia. These results indicate a process of convergence, as these countries started from levels of household-debt-to-GDP ratios well below those of the other New Europe countries.

Table 6 measures the contribution to real consumption growth during the period 2000-2004 induced by household credit growth.[6] The differences across countries are very large. With the exception of Poland, credit growth is higher than what is predicted by equilibrium consumption behaviour, assuming from the panel estimation identical coefficients across countries, except for the constant. The ratios are well above one for Turkey, Romania and Bulgaria. From the last column it is apparent that the accelerated growth in those three countries is associated with the initial level of household debt-to-GDP ratios. Note that when the predicted increase in consumption induced by credit growth is above one, we have that the ratio of credit to consumption grows over time. Indeed, this adjustment process is much more relevant for the countries, such as Romania, Turkey and Bulgaria characterized by very low initial debt-to-GDP ratios.

TABLE6. IMPACT OF CREDIT GROWTH ON CONSUMPTION GROWTH

	Real Consumption growth 2000-2004	Credit induced consumption growth over consumption growth	Initial Debt/GDP ratio (end 1999)
Bulgaria	5.0	2.8	2.0
Croatia	4.8	1.1	13.3
Czech R.	3.2	1.6	6.4
Estonia	7.3	0.9	6.4
Hungary	6.7	1.6	4.0
Latvia	7.8	1.4	2.2
Poland	8.3	0.4	8.0
Romania	6.1	3.6	0.4
Slovakia	2.8	1.7	5.8
Turkey	3.2	3.8	2.5

4. SUSTAINABILITY

Overall, current trends in household credit markets can reflect an equilibrium phenomenon in which household credit increases rapidly from extremely low initial levels. The rate of growth of credit indeed appears to respond to changing market conditions on the supply side and to good prospects for income growth. However, this does not imply that the process is free from

[6] This is calculated by applying the coefficients estimated in both the consumption and credit equations, as indicated by the last term in equation (3'), to the actual average values of the variables for each country.

macroeconomic risks and from risks for the financial sector. In order to understand if current trends can be considered sustainable in the medium to long term, we develop an analysis, involving both microeconomic (credit risk) and macroeconomic considerations.

4.1 – Microeconomic Sustainability – Credit Risk

Analysing credit risk issues involves two different aspects: sustainability of debt for the households sector and potential vulnerabilities for the banking sector.

Households sector- First we consider the current financial position of households. With expectations of rapid income growth and inter-temporal consumption smoothing, it is rational for individuals to increase their indebtedness propensity. Moreover, improved supply conditions and gradual decrease in credit rationing, support increasing indebtedness of households. But up to what an extent this is sustainable?

TABLE 7 – HOUSEHOLDS INDEBTEDNESS AND DEGREE OF LEVERAGE

	Household debt / GDP		**(Consumer + Other Credit)/ GDP**	**Household debt / Financial assets*** **	
	2000	2004	2004	2000	2004
Eurozone	**46%**	**50%**	**16%**	**23%**	**25%***
New Europe	**7%**	**12%**	**8%**	**15%**	**23%**
Bulgaria	2%	12%	9%	8%	28%
Croatia	15%	32%	20%	27%	46%
Czech Rep.	7%	14%	6%	11%	21%
Estonia	9%	24%	7%	37%	83%
Hungary	6%	20%	10%	11%	36%
Latvia	3%	19%	7%	11%	29%**
Poland	10%	13%	9%	23%	24%
Romania	1%	5%	4%	4%	31%
Slovakia	5%	10%	5%	10%	22%
Turkey	6%	6%	6%	11%	13%

Note: *Figures on gross financial wealth for the eurozone are Bank of Italy estimates and relate to 2003; **As of 2003; ***For Estonia, Hungary and Latvia, non-quoted shares, other equity and other account receivable have been excluded from gross financial wealth for homogeneity
Source: UniCredit New Europe Research Network Database, based on NCB.

A first indicator to consider is simply the ratio between households debt and GDP, which is still low, especially in comparison with the Eurozone and the US/UK[7]. Croatia is the country with the

[7] It would be better to consider debt over Gross Disposable income. However, data for gross disposable income are always available with delay and for most countries we only have an estimate. By the way, using GDI, the debt ratio would be 18% for New Europe, compared to 75% in the Eurozone. Single countries range from 7% (Turkey and Romania) to 51% Croatia.

highest ratio of households debt over GDP, which lies at 32% in 2004, followed by Estonia, with a 24% ratio. Still those figures are much lower than the 50% average reported for the Eurozone countries, even if above those of some more financially developed countries, like Italy. If we correct indebtedness data for the mortgage component, which is fully backed by real estate values as long as there are no bubbles in the market, indebtedness levels range between 4% and 10%, with the only exception of Croatia, which is still above 20%, against 16% at the Eurozone level. We believe such values are affordable as a whole and do not rise concerns in terms of systemic risks. Problems might arise for specific households, particularly if one considers that debt is not homogeneously distributed at the country and at the regional level, but tends to be concentrated in a small share of the population, which is financially active[8].

Another important indicator is the degree of leverage — that is, the ratio of debt to financial assets. The degree of leverage has risen significantly in converging Europe, jumping from 15% in 2000 to 23% in 2004, very close to the 25% Eurozone level. Although this is largely due to the wealth gap between the two regions and thus a consequence of historical problems, it points to a potential source of vulnerability. Indeed, New Europe households do not have a financial wealth "cushion" to use in case of adverse macroeconomic events affecting income levels, thus being more vulnerable to potential shocks. Households tend as well to be more subject to potential risks arising from interest rates shocks. Note that in every country of the converging Europe group, the cost of debt service shows a clear upward trend, indicating that the impact of growing volumes of debt has more than offset the drop in interest rates.

Another possible area of concern is rising debt in foreign currency (which exposes consumers to heightened exchange rate risks). This is particularly evident in countries where rapid expansion in foreign currency borrowing has been due chiefly to consumers' desire for advantageous interest rates, which they have obtained without considering the speculative implications. Some banks are as well targeting the FX lending products, as they manage to keep margins higher in the context of lower funding costs.

[8] We do not have data for debt and wealth distribution at the single country level, to be matched with data on income distribution, so actually we do not know if debt is weighting more than average on wealth and income for those who actually have access to credit. However, the cross-country variability suggests some areas of attention, like Bulgaria and Romania, where due to low average per capita income and higher than average credit rationing, as well as lower "free income", once basic needs are satisfied, the real indebtedness level of those households having access to the credit market could be higher than the average suggests.

TABLE 8 – VULNERABILITIES TO INTEREST RATES AND FX RISK

	Debt servicing payments as a percentage of gross disposable income **		**Exposure to FX Risk**			
	2000	2004	%FX over total	Main currency of denomination	Exchange rate risk	Mismatch
Bulgaria	1%	3%	7%	Euro	NO - CB	No
Croatia	5%	7%	72%	Euro	Moderate	Yes
Czech Rep.	1%	3%	0%	-	-	-
Estonia	1%	2%	56%	Euro	NO – CB	Yes
Hungary	2%	5%	9%*	Swiss F	Volatile	Yes
Latvia	1%	3%	53%	Euro	NO – CB	Yes
Poland	1%	1%	23%	Swiss F	Volatile	Yes
Romania	2%	3%	46%	Euro	Volatile	Yes
Slovakia	1%	2%	0%	-	-	-
Turkey	5%	2%	3%	-	-	-

Note: (*) If both bank and non bank lending included, the ratio is close to 30%. (**) Based on own estimates of GDI for all countries except for Czech R. and Slovakia.
Source: Own calculation on National Central Banks and Experts evaluation for qualitative information.

Table 8 presents quantitative/qualitative information on FX exposure of households to the FX risk. In particular, we combine data on percentage of retail lending in FX, qualitative information on prevalence in Euro denominated or alternative forms of denomination (following households search for the lowest possible rate), on relative stability of the country exchange rate against the Euro and on households currency mismatch (measured as matching of deposit denomination to loans denomination). It is interesting to note, that while apparently a number of countries show FX risk exposure of households, actually qualitative information shows that the risk can be slightly lower. This is the case of Croatia, where despite a huge share of FX indexed loans, households actually also have a large share of deposits in FX and the exchange rate tends to be stable on average against the Euro, following a rather strong Central Bank commitment[9]. In Estonia and Latvia, the existence of a currency board prevents oscillations of the exchange rate against the Euro, which is the usual FX currency of denomination of loans. Some more risks are probably associated to the Polish, Hungarian and the Romanian case. In the first country, Swiss denominated mortgages are increasing relevance, with individuals clearly taking unhedged speculative positions.

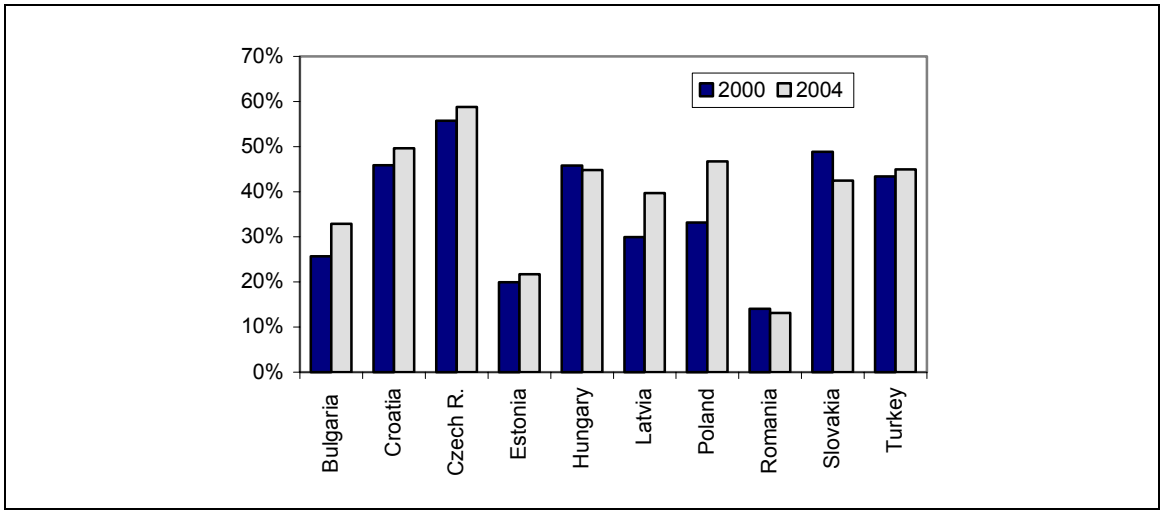
Another source of vulnerability is associated to the housing market exposure, in the context of fast increasing debt and fast rising house prices. Despite the clear correlation between house prices growth and credit growth, we do not see signals of a potential real estate bubble in the New Europe, with prices still much below those recorded in the neighbouring countries and demand to a large extent being above supply (thus suggesting potential for future growth). A survey of the last issues of the Financial Stability Report from the Supervision Authorities of all

[9] To note however that who borrows can be different from who is saving. Moreover, we cannot evaluate how much gross disposable income is indexed to FX (some correlation can be assured by the tourism industry, which is quite significant for the Croatian economy).

the markets analysed confirms our idea. Only in Hungary the Central Bank is actually concerned about a possible excess supply.

On the positive side, one has to take into account the accumulation of wealth, both real and financial, by households. If we exclude from households debt the mortgage component, assuming that mortgage is largely financing house purchase and thus represents a shift from financial to real wealth, the "corrected net financial wealth" (measured as financial wealth over GDP minus consumer and other credit over GDP), is on an increasing path in the region as a whole and in almost all the single countries. This means that while the households sector is on aggregate increasing indebtedness, still at the same time it is continuing to accumulate financial wealth and the wealth accumulation effect overcomes the indebtedness one. This result can be read considering that households are now facing improving financial conditions, which make debt more convenient. Of course, the sector performance can also hide intra-country differences, with those households getting indebted being different from those able to save. Interestingly, this result is fully consistent with our analysis on liquidity constraints. The corrected net financial wealth figures show negative developments only in a few countries, i.e. Hungary, Slovakia and Romania.

CHART 3 – "CORRECTED" NET FINANCIAL WEALTH OVER GDP*



Note: (*) corrected net financial wealth represents the difference between gross financial wealth of individuals and total liabilities excluding those connected to mortgage loans as a percentage of GDP. For Estonia, Hungary and Latvia, non-quoted shares, other equity and other account receivable have been excluded from gross financial wealth for homogeneity.

Source: UniCredit New Europe Research Network Database

Banking sector - Finally one consideration coming from the credit supply side, where market conditions have widely improved in the last years. Banks, to a large extent foreign owned, are

well managed and credit risk control procedures are clearly in place, banking supervision is strong in all the analysed markets and prudential requirements are strict. Most of the countries have implemented and are implementing credit bureaus, providing also info on small credits, which allows a monitoring of credit risk both at an aggregate and at the single counterpart level. In such a context, we do not see any major problem for the banking sector to potentially arise from households financial behaviour. The only possible source of risk is due to the external debt financing strategy of banks in some countries. To note that in most cases, such debt is raised from parent companies, which should guarantee from risks for the banks. Still, those habits could generate disequilibrium on the macroeconomic side, with banks helping to fuel excessive lending growth and thus with a potential second round effect on banks.

TABLE 9 – BANKING SECTOR STABILITY

	Capital ratios (1)	**Credit Bureau**	**ROA (3)**	**ROE (4)**	**Banks External Financing (7)**
Bulgaria	16.1	CB system in place, recording all retail loans above BGN 1000 + private run	2.4	17.3	19.3
Croatia	15.3	In place, recording all loans, with introduction of info from credit cards and leasing companies planned soon. In January 2006 first reports of positive register is expected.	1.7	16.1	29.2
Czech Rep.	12.6	In place, 3 registers including that for households	1.7	23.3	Not relevant
Estonia	11.5	In place	2.0 (4)	24.3	48.0
Hungary	12.2	In place	1.9 (4)	24.9	20.0
Latvia	11.4	In place	1.5 (4)	22.8	54.4
Poland	15.5	Two Bureaus, both private. One registers only banking loans but the second all outstanding debt is higher than 200 zl.	1.5	17.6	9.8
Romania	12.0	In place since 2004, with full coverage. Positive info recording- expected to be implemented.	3.1	18	15.8
Slovakia	18.7	In place, recording retail loans of all relevant banks	1.4 (2)	16.4	14.4
Turkey	28.8	In place for consumer credits	3.0	14.2 (3)	11.0

Note: (1) Overall Solvency Ratio. National Central Banks and ECB. (2) NPL's includes only loss and substandard categories. (3) before tax; (4) after tax. (5) total claims. (6) watch also included. (7) External financing is calculated as ratio of foreign liabilities (liabilities to non-residents) to total liabilities as they appears in the Analytical Reporting of Commercial Banks.
Source: National Central Banks and UniCredit, New Europe Research Network

All in all, while we do not have a final answer on whether retail lending growth is sustainable, we have a number of evidences showing that on aggregate we do not see major risks on the horizon. We see however potential vulnerability to shocks, both for households and for the financial sector.

4.2 Macroeconomic sustainability

From a macroeconomic point of view, the main problem is to understand if the current strong and sustained pattern of retail lending growth in the New Europe is a consequence of structural factors, cyclical dynamics or is actually a credit boom fuelling a consumption boom. Understanding this looks particularly relevant to design appropriate policy responses. Expansion of credit permanently and excessively surpassing the equilibrium level might (but not always does) contribute to the appearance of asset prices bubbles, overheating of the economy, deterioration of the external balance and inflationary pressures, increasing as well credit risk. Most likely it will do it, when associated to an irrational consumption boom (Hungarian National Bank 2005). However, busting a credit bubble can lead to economic stagnation, with equally long term negative effects. In such circumstances, and given the fact that it is very difficult to properly identify "dangerous booms", there are no straightforward policy responses to high credit growth.

We continue to focus only on households consumption and households credit. In order to identify consumption and retail credit booms in our sample, we assume that such episodes arise when consumption/credit expansion exceeds the standard deviation of that variables' fluctuations around trend by a factor of 1.5. With this measure we identify (table 9) 8 quarters of consumption booms in 4 New Europe countries in the 2000-2004 period, while we detect 13 quarters of credit booms, in 5 countries. Only in 2 cases (Hungary 2003 and Turkey 2000), we see a combination of credit and consumption boom[10].

TABLE 9 – RETAIL CREDIT AND CONSUMPTION BOOMS

Country	**Households Credit Boom**	**Consumption boom**
Bulgaria	-	-
Croatia	2002q2 and 2003q1	-
Czech R.	-	-
Estonia	-	2002q3 and 2003q3
Hungary	2002q3, 2003q2 and 2003H2	2003H1and q3
Latvia	-	-
Poland	2000q2	-
Romania	2003q2 and H2	-
Slovakia	-	2002q3 and q4
Turkey	2000H1 and q3	2000q3

[10] Very similar results have been obtained using two alternative criteria. In the first one, real flows of consumption and credit (in level) have been used and deviations from the trend were taken as a percentage of the trend itself. In the second one, flows as a percentage of GDP were used with deviations from the trend measured in percentage terms.

Starting from the above analysis we also investigate the relationship between consumption and credit growth and trade balance deterioration. Chart 4, shows periods of consumption boom (highlighted with a vertical column), the cyclical component of households credit and the threshold for identifying a households credit boom and the trade balance over GDP ratio for the country. It is immediate to note that in the two cases in which a consumption boom seems to be associated to a credit boom (Hungary in 2003 and Turkey in 2000), the trade balance is also showing a clear contemporary deterioration, suggesting a possible direct link (which is clear in Turkey also in the most recent data). In all the other cases we do not detect coincident cases of consumption and credit booms and the relationship between accelerated growth of the above mentioned variables and trade balance performance is less straightforward, with some clearer evidence in Romania and Latvia.

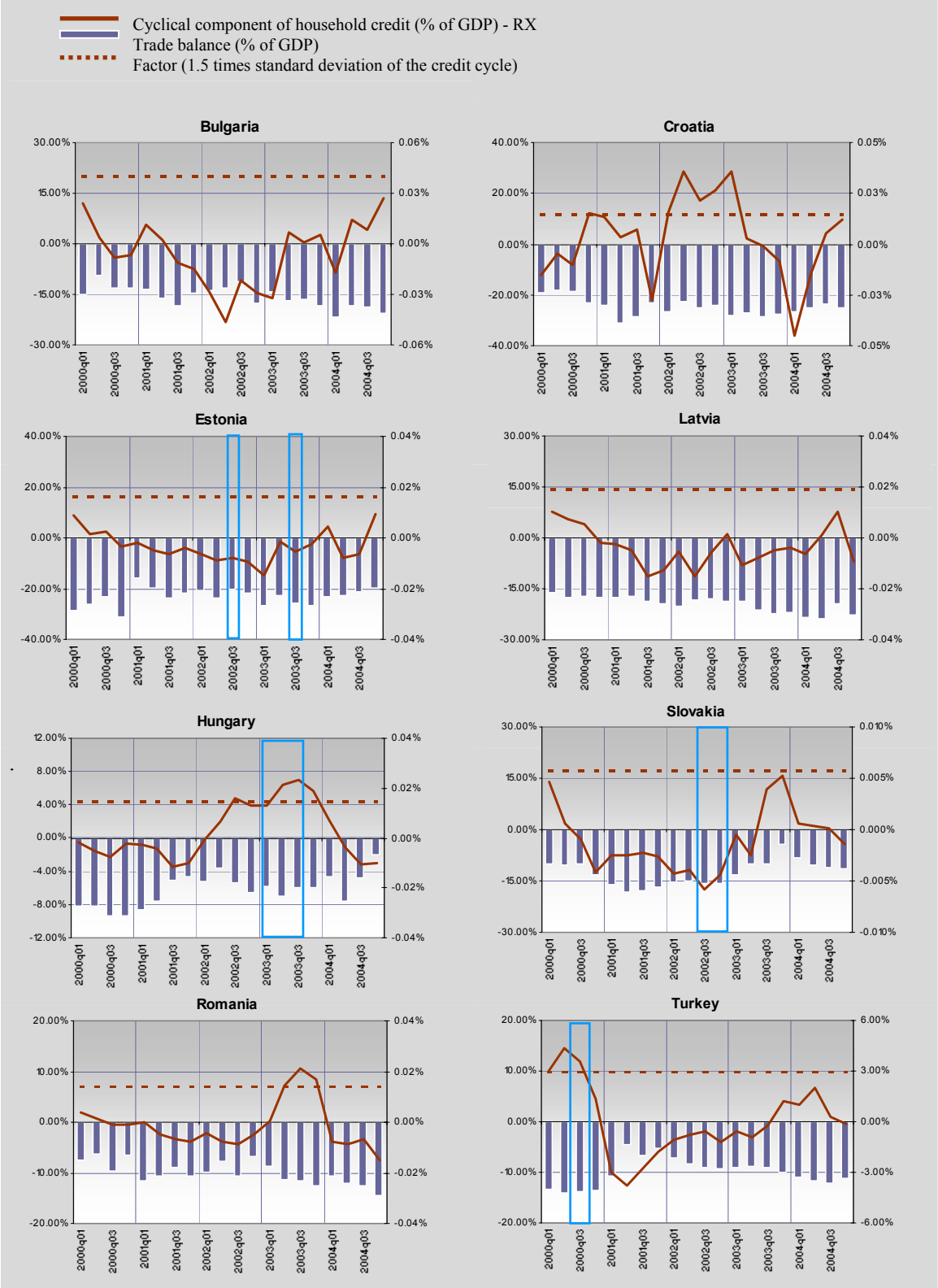
The graphical analysis can only be suggestive of the relationship between credit growth and trade balance. We thus proceed to formally test the relationship between trade balances and credit growth splitting credit into households and corporate loans. Moreover, we control for other determinants, such as the oil price and FDI flows. We perform the analysis at single country level focusing on those countries that were affected by large trade balance deficits, namely Bulgaria, Romania, Turkey, Hungary, Estonia, Latvia and Croatia. As in Duenwald & others (2005), our approach is to specify a behavioral relationship between credit growth and trade balance and fit this model to the data. Similarly to them, we use the trade balance instead of current account balance, to keep aside possible movements in the current account which may reflect large inward transfers. The tested model takes the following form:

$$TB_t=\alpha_0+\alpha_1*TB_{t-i}+\alpha_2*HC_{t-i}+\alpha_3*NFCC_{t-i}+\alpha_4*Y_{t-i}+\varepsilon_t \qquad (5)$$

where TB represents the trade balance, HC contains the flows in credit extended to households, NFCC the flows in credit extended to private companies and Y is the change in oil prices to account for the impact of structural factors. All variables are monthly, scaled by GDP and seasonal adjusted. Figures on GDP have been converted from quarterly to monthly frequency using a linear interpolation method. The data periods coincide with the maximum number of sequential months between 1996:1 and 2004:12 for which information on household and firm credit was obtainable[11].

[11] In the case of Bulgaria, there exists no reliable information before 1999:1.

CHART 4 – CREDIT BOOMS AND TRADE DEFICIT



Note: Series are seasonality adjusted. The trend have been extracted using Hodrick and Prescott (HP). The dotted line represents in all graphs the absolute threshold for credit booms episodes equivalent to 1.5 times the standard deviation of credit fluctuations around trend, which implies, under normality, there would be a 5 percent probability of observing these extreme values. Consumption booms have been identified using the same criteria and are represented in all graphs by vertical bars.

Sources: Trade data: IMF- DOTS based on country's declarations of exports and imports. Credit Data: UniCredit New Europe Research Network database.

In the case of Hungary, Bulgaria, Romania and Estonia, we also test a slightly different version of the model:

$$TB_t=\alpha_0+\alpha_1*TB_{t-i}+\alpha_2*HC_{t-i}+\alpha_3*NFCC_{t-i}+\alpha_4*Y_{t-i}+\alpha_5*Z_{t-i}+\varepsilon_t \quad (6)$$

which includes the flows of FDI[13] (Z) as a percentage of GDP to control for the relevance of alternative instrument of financing out of the banking system used by companies. As the positive effects of foreign direct investment into production takes some time to become manifest and tend to translate in higher imports at the beginning, due a start-up period during which large investment are required for purchasing modern technologies, know-how, materials, semi-products and the like, we expect this variable to exhibit a negative sign.

We estimate equations (5) and (6) using a generalized method of moments (GMM) approach with instrumental variables to tackle the endogeneity of the variables included as regressors. We also use the lagged stock of credit variables (scaled by GDP) as an instrument to further correct for the existing correlation with newly extended loans. GMM formulations appear in all cases well specified according to tests for overidentifying restrictions.

Table 10 describes the regression results of equation (5) and (6). In general, the results suggest that the trade balance is negatively influenced by households credit growth. The estimation results suggest that each percentage point of GDP of additional households credit leads to a deterioration in the balance of goods (with a lag which ranges from one quarter in Bulgaria to three quarters in the case of Romania and Turkey) of about 0.86 percentage point of GDP for Romania, 0.66 in Turkey, 0.53 in Bulgaria and 0.38 in Latvia. The sensitivity of trade balance to credit extended to households appears to be much lower and overall not significant in the case of Croatia, Estonia and Hungary. In the latter case, although credit/consumption booms tend to reflect in an immediate deterioration of trade balance (as highlighted by our graphical analysis) and could have played an important role in well-identified and limited period of time, such a relationship appears to be more feeble when extending the analysis to a longer time horizon.

The corporate sector plays a role as well, with corporate credit growth and/or FDI inflows having a significant and negative impact on the trade balance in Romania, Bulgaria, Turkey, Hungary and Estonia.

It is worth noting that the impact of corporate credit is statistically significant only in Romania, Turkey and Hungary. However, this is not too surprising if one considers that bank credit represents a small share of total financing needs of companies in the region. Firms remain restricted in their funding choices – as securities markets are relatively undeveloped in these

[12] In the case of Bulgaria, there exists no reliable information before 1999:1.
[13] In order to avoid possible biases in connection with large inflows of foreign direct investment due to large scale privatisation, we use a 12M moving average to control for this effect.

markets and cannot provide yet an alternative source of external financing for firms - and new investments tend to be largely financed through own funds or foreign direct investment.

TABLE 10 – IMPACT OF CREDIT GROWTH ON TRADE BALANCE

	Specification	*Const*	*Lagged Trade balance*	*Lagged credit to individuals*	*Lagged credit to firms*	*Lagged fiscal balance*	*Change in oil prices*	*Lagged FDI flows*	R^2	*J-test*(2)
Bulgaria	1a	-0.0045 (0.0055)	0.8255*** (0.1011)	-0.5278** (0.2159)	-0.0548 (0.1758)	0.3461*** (0.1149)	-0.0441 (0.055)	-	0.13	(0.7901)
	1b	-0.0347*** (0.0065)	0.1806 (0.1422)	-1.0061** (0.4170)	0.069 (0.0853)	0.1891** (0.0896)	0.0761 (0.0489)	-1.3133** (0.5475)	0.28	(0.9937)
Croatia	1a	-0.0136*** (0.0176)	0.8291 (0.1622)	-0.2938 (0.3764)	-0.0824 (0.1365)	0.0934 (0.0688)	-0.0852 (0.0934)	-	0.22	(0.7900)
Romania	1a	-0.0058 (0.0069)	0.6275*** (0.1615)	-0.8649* (0.4559)	-0.1459** (0.0627)	0.3674* (0.1337)	-0.0474 (0.0570)	-	0.23	(0.6908)
	1b	0.0042 (0.0147)	0.5055*** (0.1068)	-1.1216*** (0.3817)	-0.1915*** (0.0505)	0.1278 (0.1543)	-0.0048 (0.0411)	-0.5778* (0.3426)	0.34	(0.9544)
Turkey	1a	-0.0311* (0.0181)	0.3235 (0.2649)	-0.6595** (0.3137)	-0.1694** (0.0687)	0.0293 (0.0469)	-0.0082 (0.0332)	-	0.51	(0.8914)
Hungary	1b	0.0402*** (0.0122)	0.5955*** (0.1183)	-0.0463 (0.1779)	-0.4468*** (0.1051)	0.2337*** (0.0839)	-0.0747* (0.0389)	-0.3999*** (0.1368)	0.24	(0.7979)
Estonia	1a	-0.0068 (0.0259)	0.9713*** (0.1065)	-0.0466 (0.3831)	-0.2253 (0.1990)	0.4240** (0.2069)	-0.3363** (0.1361)	-	0.10	(0.6325)
	1b	-0.1553*** (0.0514)	0.2784 (0.1941)	0.4896 (0.4058)	-0.4538* (0.2397)	0.3308 (0.2101)	-0.0133 (0.1176))	-0.3092 (0.2424)	0.12	(0.9109)
Latvia	1a	-0.1153** (0.0559)	0.2765 (0.3677)	-0.3784* (0.1970)	-0.1891 (0.2665)	0.1121 (0.1994)	-0.0251 (0.0589)	-	0.21	(0.7922)

Note: (1) figures in parenthesis denotes the standard error; *,** and *** denote a level of significance of 10%, 5% and 1%, respectively. (2) *P-values* in parenthesis.

By adding the inflows of FDI among our explicative variables, we would thus expect a negative impact on trade balance, even higher than that of household credit when combined with the variable measuring credit extended to companies. Consistent with our expectations, we do find that the effect of GMM estimate for FDI is negative and significant in most of the cases, and the coefficient is significantly higher than the one on household credit especially for Bulgaria (-1.31), where a large number of companies fund their activities via FDI rather than using bank credit.

Finally, we also note that the change in the fiscal stance represents an important positive determinant of changes in the trade balance. Fiscal policy represents an effective tool of reduction of external imbalances particularly in the case of Estonia, Romania and Bulgaria and to a lesser extent in the case of Hungary. In the first three countries, the estimation results show that a one percentage increase in the fiscal balance improves the trade balance by 0.42, 0.37 (with three months lag) and 0.35 (with one month lag), respectively. The fiscal channel has proved to be a particularly effective tool in the case of Estonia where since 2002 solid government surpluses have played a key role in stabilizing the external imbalance, helping to sustain the

significant downward trend in private savings. By contrast, fiscal stance does not represent a relevant channel in the case of Croatia and Turkey.

5. CONCLUSIONS

Retail lending grew very fast in the New Europe region in the last years, prompting a debate on whether such a rapid growth can be considered sustainable. We have investigated the main determinants of retail lending growth throughout the region, highlighting the role of liquidity constraints. In particular, we have shown that consumption volatility in New Europe countries tends to be higher than in the Eurozone and generally higher than income volatility. In some cases, strong volatility is also combined with a strong correlation between consumption and credit, providing first evidence of the existence of liquidity constraints. If this is the case, current trends in household credit markets can reflect an equilibrium phenomenon in which household credit increases rapidly from extremely low initial levels, in the context of a relaxation of liquidity constraints. The rate of growth of credit responds to changing market conditions on the supply side and to good prospects for income growth. In such an environment loosening credit market conditions can have sizable effects on consumption, which, in some cases may create macroeconomic imbalances, both in terms of current account deficits and inflationary pressures.

As concerns sustainability, we distinguished micro/banking risks and macro effects. On the micro side, while we do not have a final answer on whether the current phase of retail lending growth is sustainable for households. We have a number of evidences showing that on aggregate there are not major risks on the horizon. However, we see higher potential vulnerability to shocks for certain groups of households. On the macro side, we find a negative and significant link between households credit growth and trade balance deterioration. However, we find that there are only two episodes of coincident consumption booms and households credit booms, one in Turkey in 2000 and one in Hungary in 2003. We also find that the corporate sector is playing a strong role in determining the trade balance deterioration. The negative and significant relation between trade balance performance and corporate credit and/or FDI signals that imports for building new production capacity is largely behind the most recent deterioration in the external balance for Bulgaria, Romania, Turkey, Estonia and Hungary.

References

Aleati A. Consalvi M, Moneta A, Mucci F and Revoltella D (2005), 'Households lending market in the Enlarged Europe', in Bracchi, Masciandaro, Le Banche Italiane e la Finanza per lo Sviluppo, Edibank.

Bacchetta P. and S. Gerlach (1997), 'Consumption and credit constraints: International evidence', Journal of Monetary Economics 40, pp. 207-238

Bethlendi A. e Nagy Vas E. (2004), 'Dynamic expansion in the Hungarian consumer lending market in the light of international trends', in Report on Financial Stability, Hungarian National bank, December

Bokos L. e Pelleny (2005), 'Foreign currency denominated borrowing in Central Europe: trends, factors and consequences', International Centre for Economic growth

Brzoza-Brzezina M (2005), 'Lending Booms in Europe's Periphery: South-Western Lessons for Central-Eastern Members', http://akson.sgh.waw.pl/~mbrzez/english/index.htm.

Croatian National Bank (2005), Macro prudential Analysis n.1, July.

Crook J. (2003), 'The demand and supply for household debt: a cross country comparison', Credit Research Centre, University of Edinburgh

Czech National Bank, Financial Stability Report, various issues.

Debelle Guy (2004), 'Households Debt and the Macro economy', BIS Quarterly Review March

De Bondt G. (1999), 'Credit Channels and Consumption in Europe: Empirical Evidence', BIS Working Paper n.69, June

Duenwald C, Gueorguiev N, Schaechter A (2005), 'Too Much of a Good Thing? Credit Booms in Transition Economies: The Cases of Bulgaria, Romania, and Ukraine', IMF Working Paper, June.

European Central Bank(2003), 'Structural factors in the EU housing markets', March

- (2004), 'EU Measuring Financial Integration', Occasional Paper Series No 14, April
- (2004), 'Capital markets and financial integration in Europe', December
- Financial stability review, various issues
- EU banking sector stability, various issues

Gourinchas, P.O., R. Valdés and O. Landerretche (2001), "Lending Booms: Latin America and the World", NBER Working Paper n. 8249.

Hilbers P, Otker-Robe I, Pazarbasioglu C and Johnsen G (2005), 'Assessing and Managing Rapid Credit Growth and the Role of Supervisory and Prudential Policies', IMF WP / 05 / 151. July

Hungarian National Bank, Report on Financial Stability, various issues

Mihaljek D. (2005), 'Rapid expansion of credit in South Eastern Europe: a cause of concern?', Presentation at ICEG EC conference, April

Polish Central Bank (2004), Financial Stability Report

Uluskula L, Luikmel P and Kask J (2005), 'Critical Levels of Debt?', Bank of Estonia