

## **Financial System Stability in the New EU Member States Ahead of the Euro Adoption**

### ***Introduction***

The proximity of EMU enlargement changes banking sector environment, as it significantly alters operating risk profile. On the other hand, studies suggest that euro adoption will improve economic growth, by diminishing both credit risk and interest rates.

This, however, is likely to evoke pressure on banking system's capability to service both corporations and individuals. Given still low penetration when it comes to credits to private sector, room for expansion is evident. Furthermore, considering growing demand from non-banking financial institutions for Central and Eastern European assets, it seems reasonable to assume that both debt and equity markets are likely to enlarge, necessitating new services from the banking industry (origination, placement). This might also have positive impact on transparency of the capital market, increasing demand for grades from rating agencies.

Nonetheless, there are two risk factors that could hamper such a turn of events. First of all, domestic savings might not be sufficient for the financial system to accelerate credit growth. Potential deterioration of regulatory capital ratios and risk-adjusted items could also be a factor here, should the economies be hit by external shocks (higher energy prices, lower global demand due to tighter monetary policies, etc.). Yet, declining level of government borrowing ahead of the fulfilment of Maastricht fiscal criteria should counteract this risk to some extent.

Secondly, even though loan-loss provisions have been declining recently in CEECs, the portion of foreign currency denominated debt (especially mortgage) could deteriorate financial system stability in a not unlikely event of currency depreciation ahead of euro adoption.

First section comprises potential for credit expansion in the New Member States. Part two concentrates on the profitability of the banking sector and its efficiency in the wake of probable financial deepening. Section three touches on external stability and asset price risk

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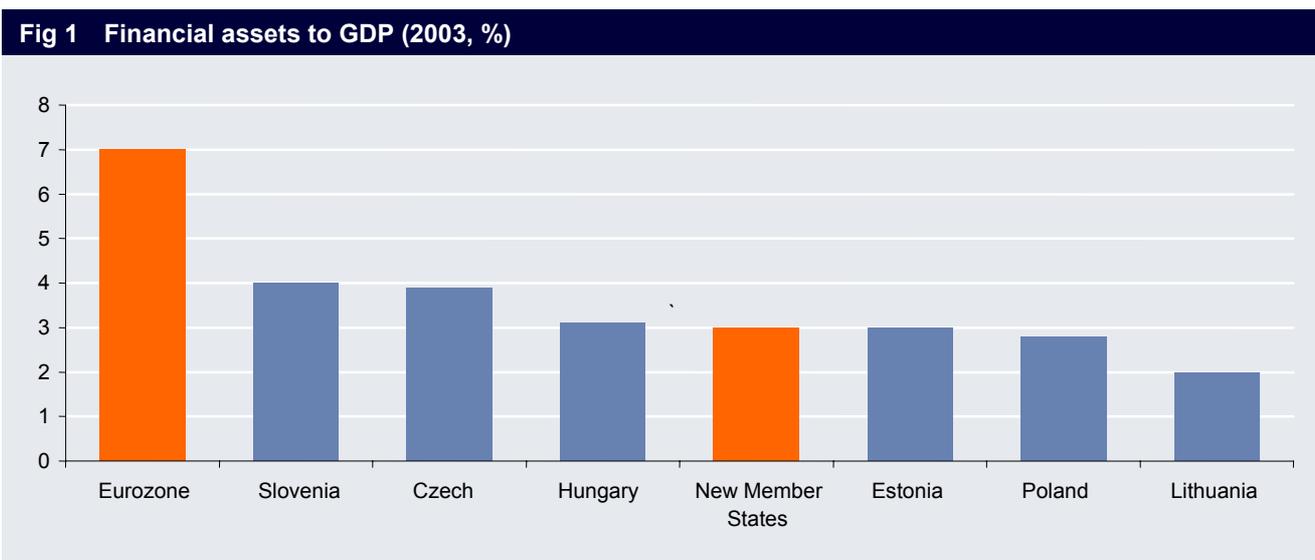
along with the issue of increased foreign currency-denominated borrowing. Section four presents an overview of depth of financial markets. Section five concludes.

### 1. Credit expansion

Bank credits remain the primary source of financing both investment and consumption needs in the New Member states. Accordingly, credit expansion and its implications for banking sector stability are of crucial importance.

It is generally assumed that euro adoption in EU10 countries will bolster their economies. Even though direct implications of EMU entry for the economic growth are beyond the scope of this paper, its impact on financial systems cannot go overlooked.

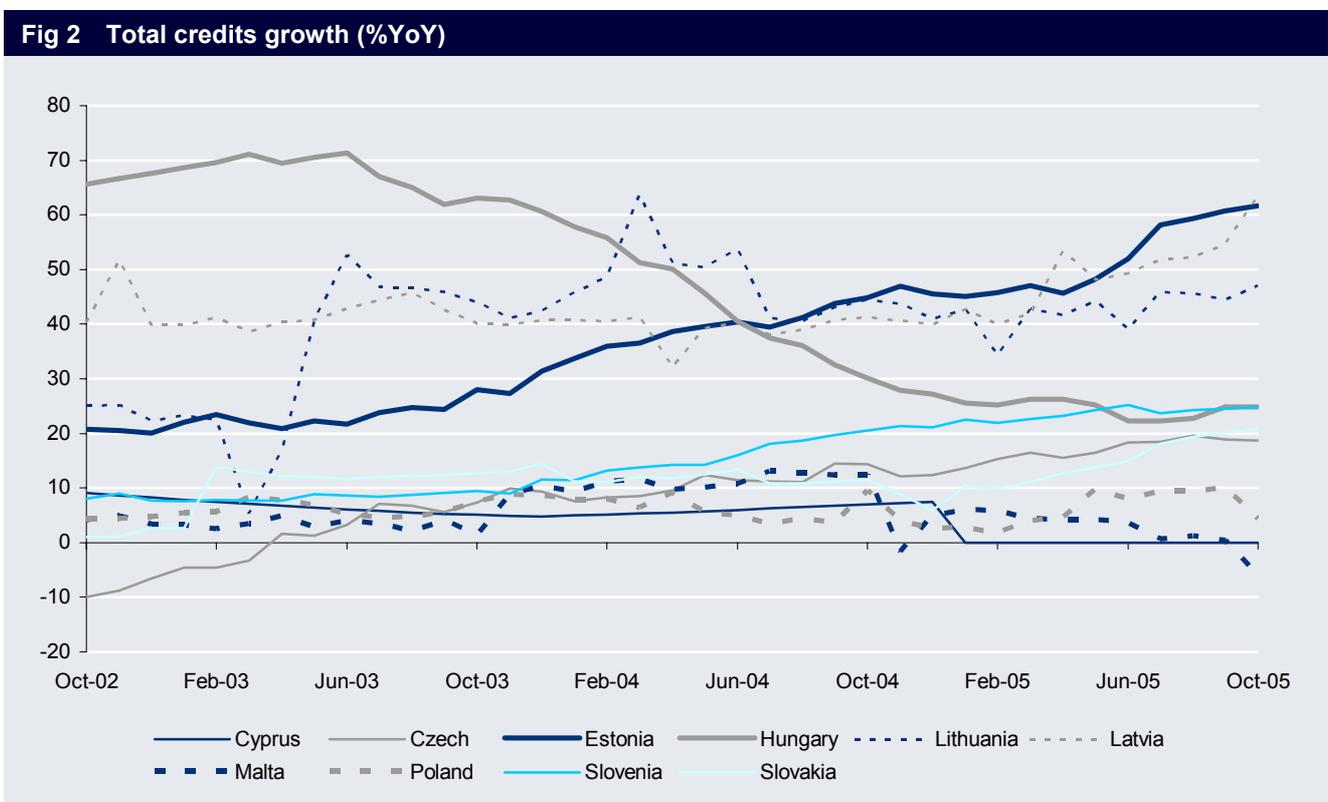
Potential increase in economic growth should evoke higher demand on already-growing credits, thus percolating into deepening of financial intermediation. There are two factors adding to this tendency. First, the catching-up process could be combined with the general banking sector's procyclicality, reinforcing credits growth, as the New Member states experienced an economic acceleration around the EU accession. As shown in Figure 1, financial assets in the New Member states are between 2 and 4 times GDP, while the EU average is 7 (Anzuini and Levy 2004). There is a similar discrepancy when it comes to assets held by households – the ratio to GDP is between 55 and 83% in Poland, Hungary and Czech Republic, as opposed to 232% in the EU. Consequently, impact of changes in asset prices, stemming from volatility on the financial markets, on household balance sheets is weak (Angeloni et al. 2005).



Source: ECB

Secondly, nominal convergence in the form of lower interest rates that needs to happen in some of the New Member states will increase demand for leveraging amongst companies and boost private consumption. Historical evidence strengthens this reasoning, as Greece and Portugal saw lending-to-GDP ratios double between 1995 and 2003 (from 34% to 74% and from 75% to nearly 150% respectively).

Recent publications (Brzoza-Brzezina 2005) suggest that potential credit boom should begin 2-3 years before euro adoption and peak in the year of accession. Further, it is reasonable to expect that the most significant increases will occur in the countries with the highest interest rate differential (i.e. Hungary and Poland<sup>†</sup>).



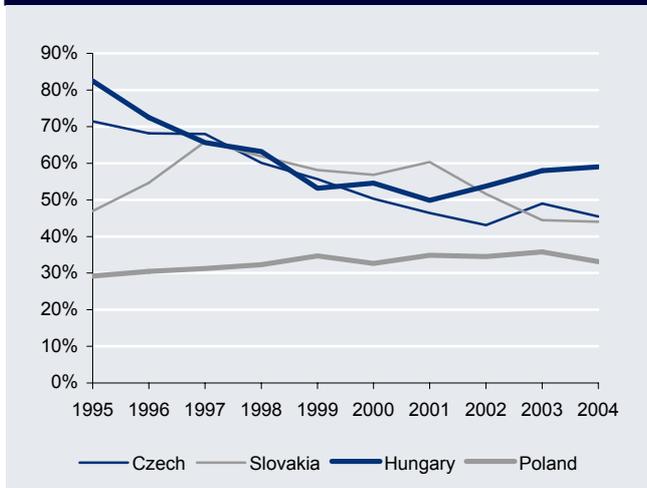
Due to methodological differences, data are not entirely comparable  
Source: EcoWin

So far, the New Member states have noted a differentiated growth when it comes to credits growth. Interestingly, Estonian, Latvian, Lithuanian and Slovenian experience could be a good proxy for CE-4 countries future. The former countries are not yet included in the EMU, but linking of their currencies to the euro coincided with an upward pressure on the domestic credit-to-GDP ratios (see Figure 3 & 4). This could be derived from stable exchange rate regimes (low exchange rate volatility), which make the EU accession similar to euro adoption.

<sup>†</sup> Spreads to German 10-year government bonds in February 2006 stood at 1.46, 3.22, 0.18 and 0.03% for Poland, Hungary, Slovakia and the Czech Republic, respectively.

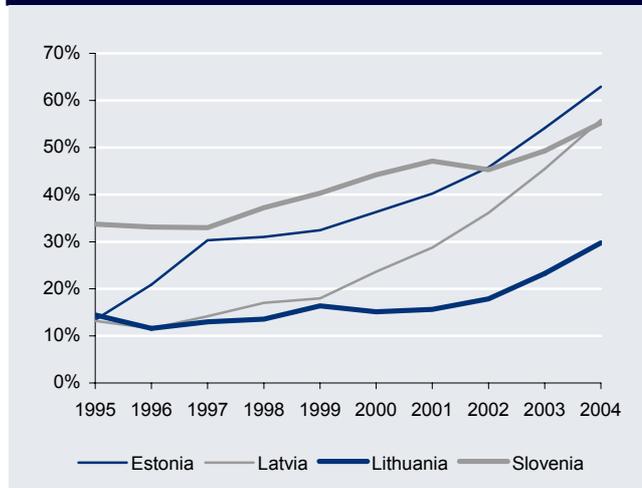
Admittedly, ratios in these countries do not match those seen in the EU yet and sometimes they are even lower than in CE-4 countries, but the dynamics has undisputedly quickened.

**Fig 3 Domestic credit as a percentage of GDP**



Source: IMF, EcoWin

**Fig 4 Domestic credit as a percentage of GDP**



Source: IMF, EcoWin

## 2. Banking sector's profitability

Credit expansion is likely to put upward pressure on banking sector's results. Yet, it is necessary to perceive this effect as stemming from both higher revenues and lower share of non-performing loans (and provisions written down for them). The former is inevitably linked to faster economic growth and given low penetration of the banking sector it raises hopes for a structural and long-term shift in the sector's valuation. However, from the stability point of view, it is crucial to assess, whether banking sectors will be able to cope with increased activity.

When it comes to banking sector's profitability, it might be useful to scrutinise examples of Ireland, Portugal, Greece and Spain (further referred to as EMU-4). Figure 5 shows loans expansion in these countries. All of them experienced rapid growth rates in years 1995-2000. A relatively worse situation was seen in Spain, which can be derived from deeper financial intermediation at the beginning of 1990s. In the period 1997-2001, domestic credits-to-GDP ratios improved from 85% to 140% in Ireland, from 88% to 121% in Portugal, while in Spain the respective change was from 118% to 126%.

Fig 5 Loans growth (% YoY)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	1995-2000 average
Greece	24%	31%	21%	35%	26%	<b>60%</b>	19%	19%	15%	33%
Ireland	n/a	18%	66%	16%	<b>57%</b>	16%	18%	27%	7%	35%
Portugal	12%	13%	20%	28%	<b>29%</b>	21%	12%	7%	1%	21%
Spain	8%	8%	13%	14%	13%	<b>16%</b>	11%	12%	14%	12%

Source: Own computations based on OECD

Consequently, EMU-4 countries also experienced increases in net interest income (Figure 6). Again, Spain was the worst performer (on average), but as was envisaged above, it is more justified to compare the New Member states to Greece and Ireland when looking at banking sector's statistics. Apart from that, Spanish result in 2001 is in line with developments in other EMU-4 countries around the euro adoption date.

Increase in net interest income is particularly important, as all these countries had to deal with lower incomes stemming from financial operations. The bulk of this process can be directly derived from abandonment of foreign exchange markets (net profit on financial operations fell in 2001 by 37%, 134%, 50% and 50% in Greece, Ireland, Portugal and Spain, respectively, even resulting in a loss in Ireland).

Fig 6 Net interest income (%YoY)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	1995-2003 average
Greece	n/a	10%	33%	34%	30%	<b>36%</b>	<b>13%</b>	0%	18%	22%
Ireland	n/a	3%	24%	20%	44%	<b>16%</b>	<b>13%</b>	16%	-5%	16%
Portugal	0%	0%	15%	8%	9%	<b>2%</b>	<b>9%</b>	-1%	-3%	4%
Spain	-3%	1%	2%	2%	1%	<b>9%</b>	<b>25%</b>	0%	4%	5%

Source: Own computations based on OECD

Looking at asset quality and capital adequacy ratios, it seems that the New Member states remain in a comfortable situation. Percentage of non-performing loans has been falling, along with economic growth and the share of provisions is also lower. As Figure 7 shows, the worst situation is in Poland, Slovakia and Slovenia, but the environment in these countries has improved recently, owing to higher economic growth rates.

Fig 7 Asset quality in the New Member States (2005)

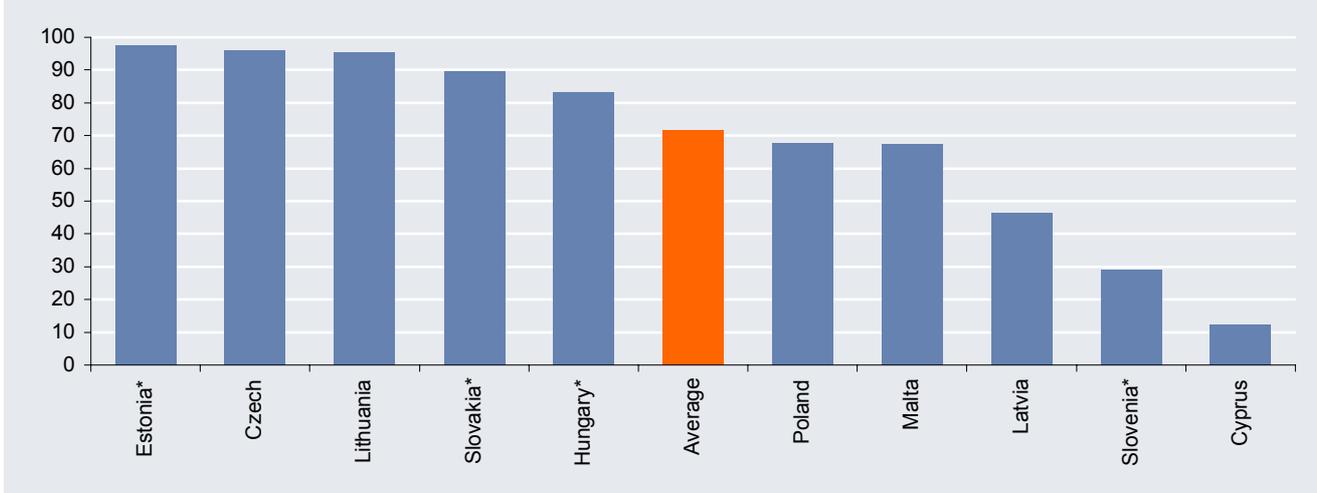
	Cyprus	Czech	Estonia	Hungary	Latvia	Lithuania	Malta	Poland	Slovenia	Slovakia
Non performing loans as % of total loans	5.8*	4.4	0.2	3.4*	1.0	2.1	5.6	6.0	21.9*	6.3
Provisions in % of total loans	6.8*	2.8	0.4	1.8*	0.9	0.7	1.4	5.5	8.4*	4.9

\*2003

Source: ECB, national central banks.

One obvious risk for credit expansion and its impact on financial stability is aforementioned procyclicality within the industry. Apart from that, a quick pace of credit expansion oftentimes preceded banking crises (e.g. in the Czech Republic in 1997), which was confirmed by signalling leading indicators models (Ottens et al. 2005, Borio and Lowe 2002). Both these phenomena can be derived from potential underestimation of credit risk during the expansionary phase of the economic cycle. Emerging markets also face a significant problem due to short credit history. Central and Eastern European countries experienced major financial sector foreign direct investment inflows starting from mid-1990s (Baudino et al 2004, Hawkins and Mihaljek 2001, Domanski 2005). Therefore, the New Member states' banks are by and large owned by foreign financial institutions, which tend to deploy uniform credit rating procedures in all their branches and subsidiaries. As Figure 8 shows, ownership structure varies among the New Member states, but in asset-weighted terms it stands above 70%. However, the threat stemming from such a concentration could be expressed in two ways. First of all, international banking groups are present in most of the New Member states, which given the results' consolidation on a global basis could lead to shifts in capital involvement in an event of pertaining differences in growth rates. Moreover, owing to the catching-up process, the New Member states seem less vulnerable to periods of economic contraction than the EU-15 countries, which could result in scaling down of banking operations in the New Member states, should the parent banks require additional financing. Conversely, parent banking groups' creditworthiness is usually higher than New Member states' ratings, which increases stability of the sector. In general, studies show that foreign strategic investors along with capital and knowledge brought with them, have been a way to strengthen Central and Eastern European countries' banking systems and improve the level of financial intermediation and as such should be perceived as positive for financial stability (Haas and Lelyveld 2003).

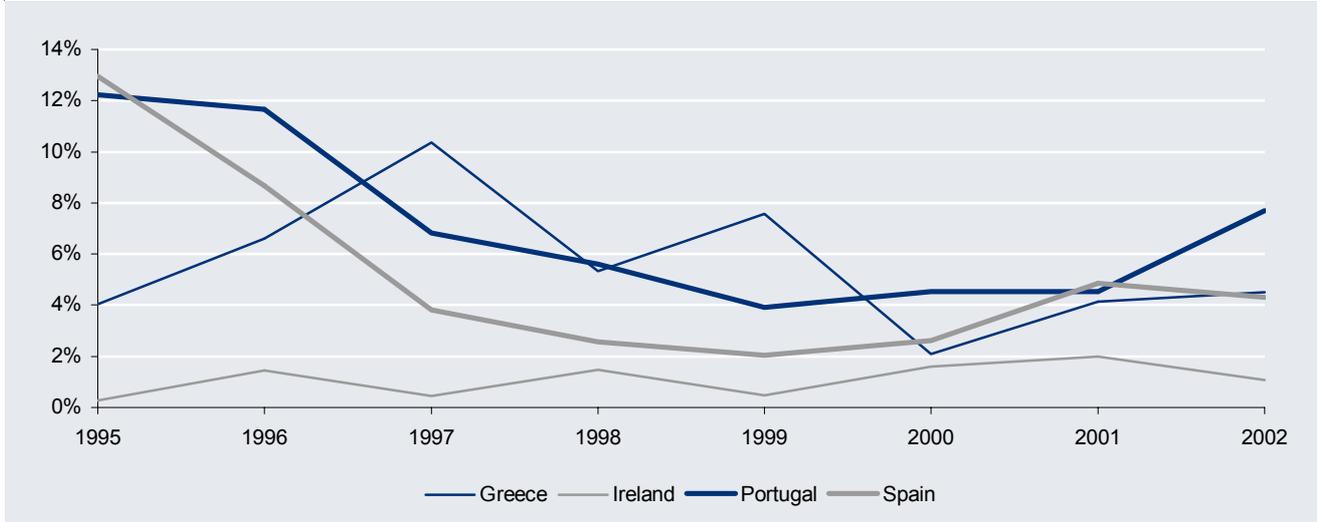
**Fig 8 Foreign ownership in the banking sector (2004, % of total assets)**



\* 2005  
Source: ECB, National sources

Rationale behind this reasoning could also be seen in EMU-4 countries, which reported improving quality of their loans ahead of euro adoption. Figure 9 shows that net yearly changes in provisions expressed as a percentage of changes in loans were steadily declining (apart from Ireland, where this ratio was low already in 1995). Admittedly, the year 2001 ended up with deterioration of this ratio, but this was by and large caused by the global breakdown of equity markets, which increased insolvency ratios in the corporate sector, thus necessitating higher write-offs.

**Fig 9 Changes in provisions as a percentage of changes in loans stock**

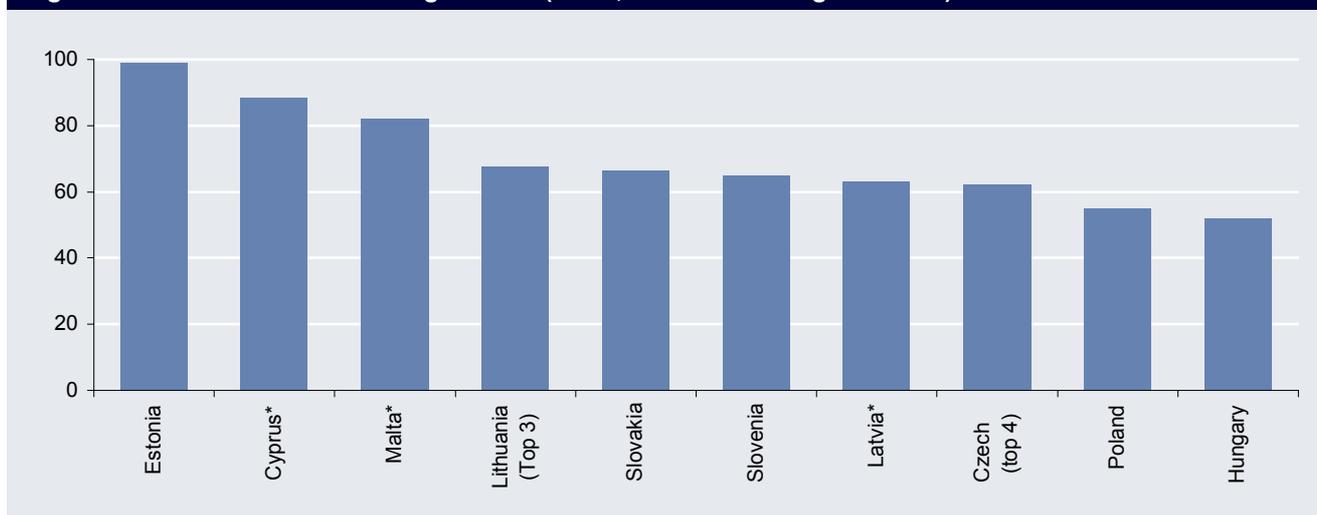


Source: Own computations based on OECD

Foreign ownership should also be analysed from the concentration point of view. Research shows that concentrated banking systems are less prone to banking crises (Beck, Demirgüç-Kunt and Levine 2003). As shown in Figure 10, banking sector's concentration should not be

of a major concern for supervisory authorities in most of the New Member states. Relatively more competitive Poland and Hungary are on the other hand protected by nominal size of their banks, which are effectively safeguarded by the “too big to fail” rule.

**Fig 10 Concentration of banking sectors (2005, % share of 5 largest banks)**



\* 2004  
Source: ECB, National sources

Foreign ownership and concentration in the banking sector are particularly important from the monetary impulses transmission mechanism point of view. Foreign-owned banks adjust more strongly their lending after a change in Eurozone interest rates than their domestic-owned competitors, while institutions with higher capitalisation show weaker response to monetary policy (Schmitz 2004).

Finally, capital adequacy ratios remain safely above the minimum 8% requirement. As shown in Figure 11, in some cases (notably Slovakia) they even seem too high. This is particularly the case, when compared with non-performing loans' share in the overall loan portfolio, which is a problem only in Slovenia. However, it is essential to state that asset quality ratios remain backward-looking and usually lag behind current developments. What is more, new loans are classified as “performing” for an extended period of time following credit risk assessment.

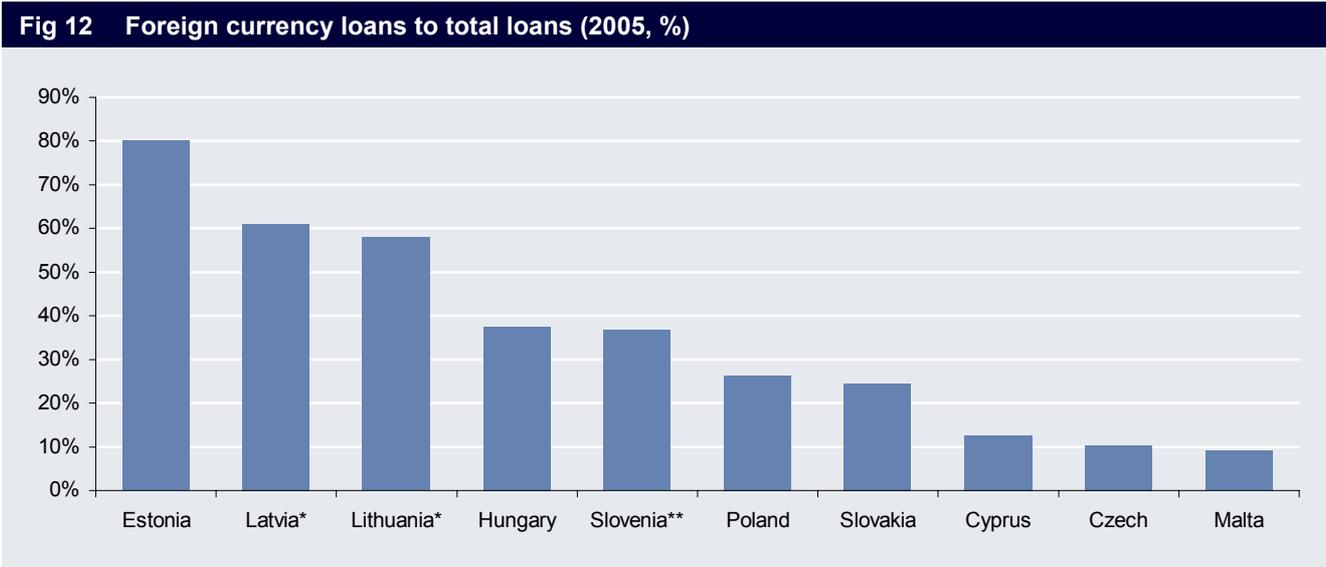
**Fig 11 Capital adequacy and assets quality (2005, %)**

	Malta	Cyprus	Slovakia	Poland	Czech	Estonia	Hungary	Slovenia	Latvia	Lithuania
Capital Adequacy Ratio	20.1	20.1*	17.0	15.4	12.4	11.7	11.4	11.8*	10.7	13.2*
Non-performing loans to total loans portfolio	5.6	5.8*	6.3	6.0	4.4	0.2	3.4*	21.9*	1.0	2.1

\* 2003  
Source: National banks

### 3. External position and asset prices

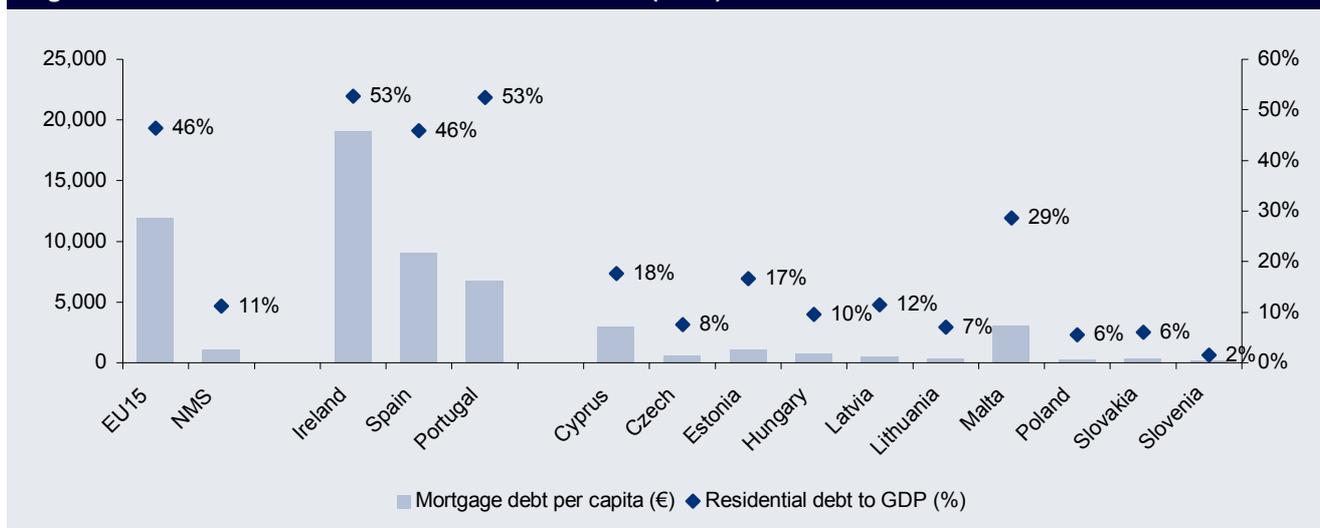
Ahead of euro adoption, the New Member states that are facing relatively high interest rates (notably Hungary and Poland) need to cope with increasing level of foreign currency loans. Much of this constitute mortgages, which have been gaining even more on popularity due to appreciating currencies. It is arguable, to what extent foreign-denominated borrowing influences the market, but this impact should not be underestimated.



\* 2003, \*\* 2004.  
Source: ECB, National sources.

Admittedly, foreign currency loans need to be serviced, inflicting depreciating pressure on domestic currencies, but comparing to EMU members, the potential for mortgage expansion looks sufficiently significant (see Figure 13) to provide constant inflow, stemming from the catching-up process. Furthermore, central banks are capable of performing interest rate hikes to prevent their currencies from substantial depreciation. Yet, this is more likely to be the case in Hungary, where the central bank has a history of responding to currency moves with changes in interest rates, rather than in Poland.

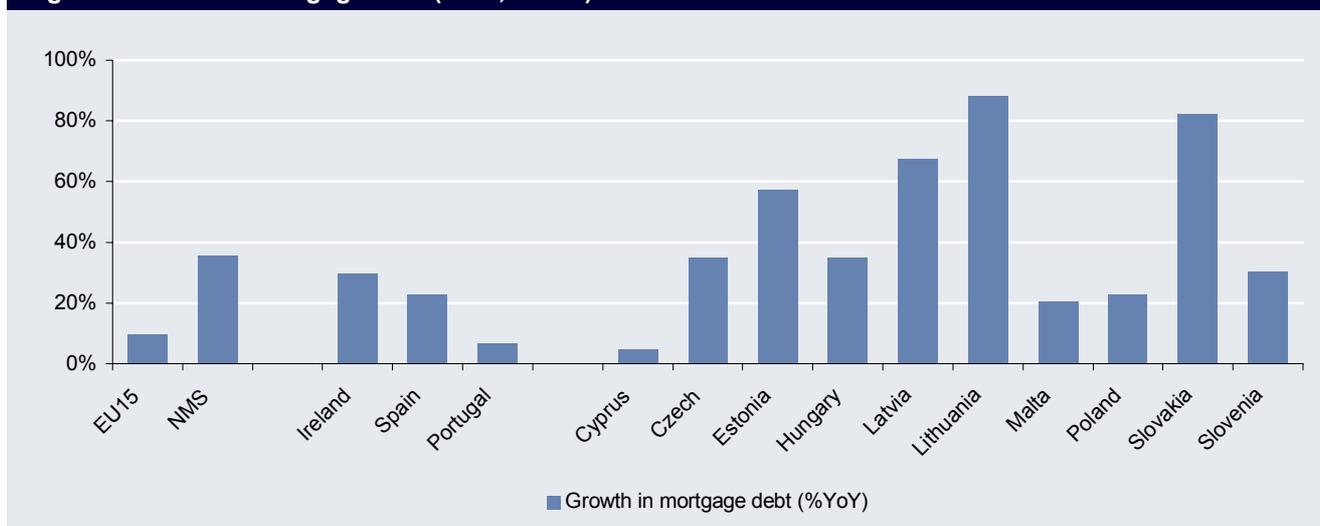
**Fig 13 Residential debt in the New Member States (2005)**



Source: European Mortgage Federation

This catching-up process is clearly visible in growth in mortgage debt, which is much higher than in the EU15 countries (Figure 14), where the average growth rate equalled 8% per annum over the last 10 years.

**Fig 14 Growth in mortgage debt (2005, %YoY)**



Source: European Mortgage Federation

From the financial stability point of view, however, the fact that domestic borrowers bear significant currency risk could be detrimental for loan-loss provisions. This could endanger the industry's efficiency and might force supervisory and monetary authorities to undertake such steps as (Brzoza-Brzezina 2005, Hilbers et al 2005, Cotarelli et al 2003):

- increasing provisions for foreign currency denominated debt;
- imposing ceilings on foreign currency new debt (expressed as a loan-to-value ratios or volume constraints);

- raising collateral and capital requirements;
- tightening monetary policies;
- fiscal contraction of demand cooling down the economy;
- constraining capital flows (which could be difficult ahead of the EMU entry).

Some of these steps were undertaken in EMU-4 countries (Brzoza-Brzezina 2005, Hilbers et al 2005). Additionally, efforts from central banks are likely to be carried out in a form of moral suasion. On the other hand, such activities might seem pointless as the event of a currency crisis looks unlikely in most of the New Member states (the only exception seems to be Hungary). This is particularly the case, as sustaining differences in productivity growth between the New Member states and the Eurozone should put constant appreciating pressure on their currencies (in real terms). Apart from that, proximity of ERM-2 entry makes it reasonable to expect that central banks will strive to prevent the currencies from depreciating. Still, supervisory authorities need to monitor banking sector's ability to adhere to increased currency risk embedded in credits, taking into account exchange rate volatilities. As shown in Figure 15, foreign currency-denominated loans in Poland and Hungary bear the biggest risk.

Fig 15 New Member states' foreign exchange volatility

	<b>PLN</b>	<b>CZK</b>	<b>HUF</b>	<b>SKK</b>
Annualised volatility (%)	8.4%	5.4%	5.7%	4.2%
Maximum 1-week depreciation	2.8%	1.5%	2.3%	1.9%
Maximum 1-week appreciation	3.7%	2.2%	1.8%	1.4%

All rates against the euro, 2004-2005

Source: Own computations, Reuters

First years after the EU entry, however, resulted in gradual appreciation of the New Member States' currencies. This favoured timely servicing of foreign currency-denominated loans. In Poland, the quality of currency loan portfolio in the first half of 2005 was actually higher than domestic currency portfolio (irregular loans for individuals stood at 2.3% and 9.0% in June 2006 for foreign and domestic currency loans, respectively). Bank lending surveys in the New Member states show that currency loans granted to enterprises are partly hedged by their exports proceeds. Additionally, availability of derivative instruments helps the corporate sector to effectively manage risk of their exposure.

Potential problems are also visible, when it comes to banking sectors' external position (Figure 16). Among countries, with free or relatively free exchange rate regimes (i.e. Poland, Hungary, the Czech Republic and Slovakia), Hungary looks the most vulnerable, with its net external position exceeding USD35bn (almost one-third of GDP). What is more, liabilities

maturing up to 1 year comprise around USD17bn and are equal to the amount of foreign reserves (excluding gold). Other countries either do not experience high volatility on the foreign exchange market or, like Poland and the Czech Republic, have relatively stable external positions. On the other hand, Slovakia could be experiencing problems here, as well, but its presence in the ERM-2 system (since end-2005) significantly diminishes the risk.

Fig 16 External stability indicators (3Q05)

	Net external position (% of GDP)	Total intl claims (% of GDP)	Net external position (% of foreign reserves excl. gold)
Cyprus*	8.4%	113%	33%
Latvia**	-5.7%	41%	-43%
Poland	-6.3%	19%	-46%
Czech	-9.0%	33%	-37%
Lithuania	-11.0%	31%	-76%
Slovakia	-21.1%	55%	-63%
Slovenia	-31.3%	40%	-132%
Hungary	-32.2%	52%	-204%
Estonia	-42.7%	108%	-325%
Malta	-163.3%	194%	-355%

\* 4Q04

\*\* 1Q05

Source: OECD, EcoWin

From the stability point of view, however, it is important that the New Member states' financial markets are correlated. This is especially the case for Poland, Hungary, the Czech Republic and Slovakia. Therefore, any potential currency crisis in one of these countries is likely to evoke a knee-jerk weakening in its peers. Nonetheless, since financial markets are relatively well developed, this should not threaten banking sector's results from trading operations, as Value at Risk analyses conducted in the New Member states incorporate such a risk, because high swings on the currency markets in the past influence results obtain by risk management departments. It might rather be more visible in increased number of credit events, i.e. defaults on foreign currency-denominated loans.

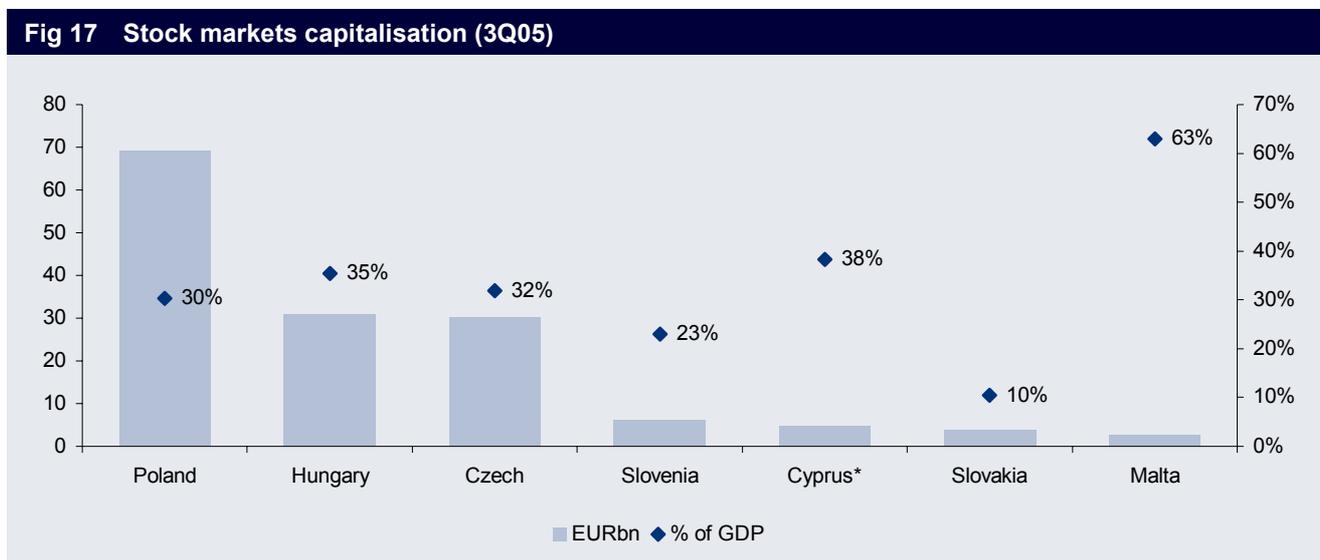
Another threat stems from rising asset prices. Economic expansion leading to higher wealth can be observed in surging real estate and equity prices. Additionally, relatively free capital markets lure foreign investors reinforcing this trend. Higher level of wealth, which eventually emerges, increases creditworthiness of private sector, while simultaneously comforting credit institutions, which find support in more valuable collateral.

Such a turn of events was seen in some EMU countries before (e.g. Portugal, Ireland or Spain, where in 1999-2003 house prices have been growing on average by 22%, 14% and 17% per annum), but it is important to acknowledge that risk of piercing the asset bubble worldwide, if indeed it is a bubble, could lead to lower valuations in the New Member states,

as well. Repercussions of declines in property prices on financial stability can lower if supervisory authorities decide to impose adequate loan-to-value ratios. Credit institutions in Malta lowered this ratio in 2005 (previously it stood, on average, in the range of 60-80%), which suggests higher caution and was one of the reasons of slower growth in mortgages (see Figure 14).

#### 4. Depth of financial markets

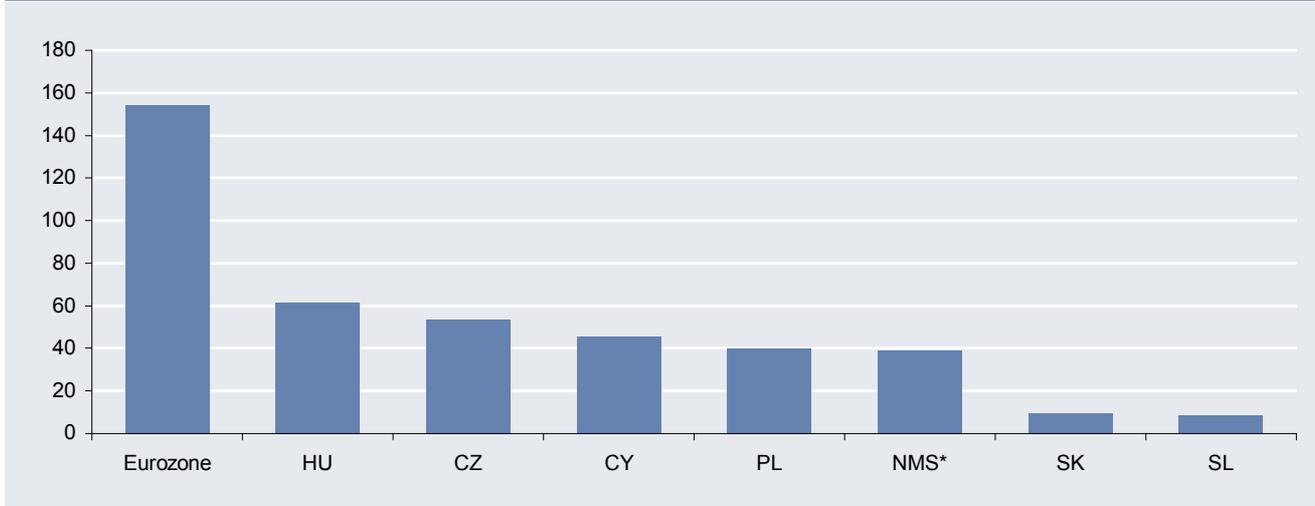
Capital investments bear significantly larger risk than secure deposits and as such have not gained high recognition in the New Member states. Nevertheless, given relatively high openness of these countries, capital markets remain an important factor to assess stability of Eastern European economies.



\* 2004  
Source: FESE, EcoWin

Looking at capitalisation rates (Figures 17 and 18), there seems to be vast potential of improvement. However, this does not seem to be a major problem in the New Member States as they are properly regulated (i.e. regulators adhere to European standards) and there is a tendency for the bourses across the continent to merge (with the most notable example of Estonian, Latvian and Lithuanian stock exchanges joining the Nordic Omhex group).

**Fig 18 Corporate debt as % of GDP (2004)**



\* without Estonia, Lithuania, Latvia and Malta  
Source: ECB

Nonetheless, since the banking sector is widely represented on bourses in the New Member States, and these countries are still perceived as quite uniform, it might be useful to assess a risk of any potential spill-over. It can be done by looking at correlations between stock prices of major banks. To assess that, major banks from the biggest New Member states were chosen<sup>‡</sup>. The sample comprises OTP Bank (Hungary), Pekao S.A. (Poland), Erste Banka, Komerčni Banka (both Czech) and OTP Bank (Slovakia). Figure 19 shows that share prices of the chosen banks are relatively well correlated, but this could be derived from the generally positive sentiment on the markets in the region (i.e. stock indices have been moving together, as well). However, correlations between weekly changes are lower, which diminishes the potential of a joint collapse.

Fig 19 Correlation between banks' stock prices

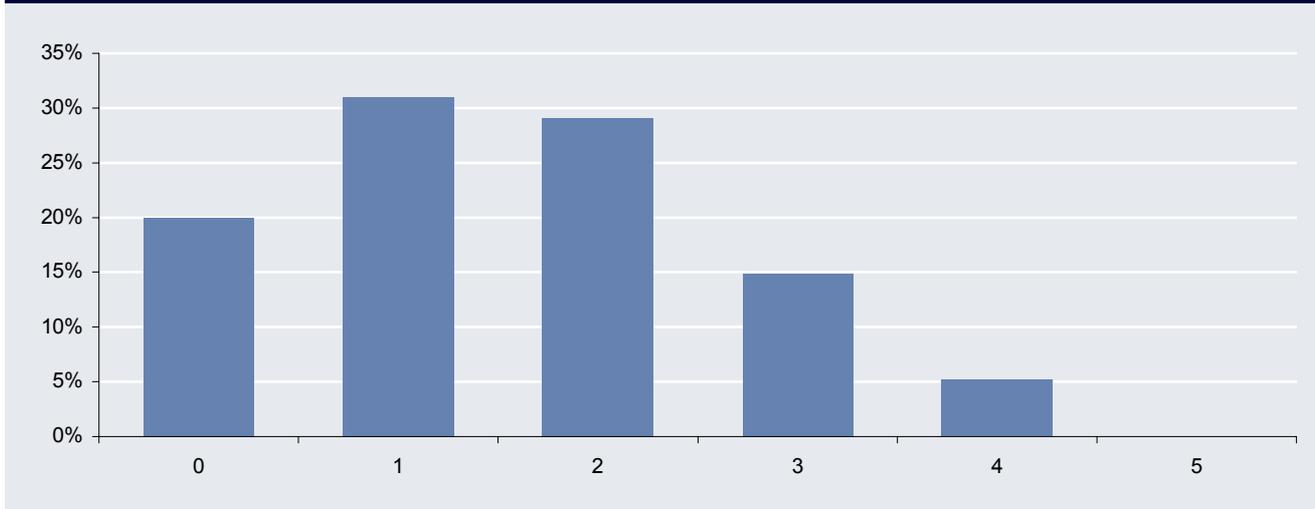
	Correlations between stock indices (11/01/03 = 100)				Correlations between weekly changes				
	OTP HU	Pekao	Erste	Komerčni	OTP HU	Pekao	Erste	Komerčni	
OTP HU					OTP HU				
Pekao	90%				Pekao	41%			
Erste	94%	90%			Erste	25%	26%		
Komerčni	89%	88%	94%		Komerčni	48%	45%	47%	
OTP SK	89%	78%	75%	70%	OTP SK	10%	4%	17%	6%

Source: Reuters, own computations

What is more, looking at frequency of joint returns exceeding one standard deviation (Figure 20), in 51% of the cases, one or less banks in the region noted such a change, while only 5% times four banks moved in parallel fashion.

<sup>‡</sup> It seems to be a reasonable assumption, since Baltic stock exchanges are more dependent on moves in the Nordic countries, while bourses in Cyprus, Malta, and Slovenia are relatively underdeveloped (see Figure 17).

**Fig 20** Frequency of joint changes exceeding one standard deviation



Source: Own computations

## **5. Conclusions**

The most probable result of euro adoption in the New Member states is the financial deepening, as financial assets equal 2-4 times GDP, compared to the EMU average at 7 times. The bulk of that should come from increased pace of loans growth, which is estimated to begin 2-3 years ahead of euro introduction and peak in the final year. In some of the New Member states this process has already commenced (i.e. Latvia, Lithuania, Estonia and Slovenia). From the stability point of view, however, it is crucial to assess whether banking sectors will be able to cope with this catching-up process. Evidence from Portugal, Ireland, Spain and Greece shows that loan-loss provisions were steadily declining in late 1990s.

There is significant room for improvement in residential debt section of banking activities, as indebtedness is some three times lower than in EU15 countries. This process should put upward pressure on banking sector's results, but it should be more visible in net interest income rather than result from financial operations. The latter is even likely to decline due to abandonment of foreign exchange market in the New Member states and centralisation of treasury operations in parent banking groups.

Foreign ownership is another issue adding to relative stability of financial markets in the New Member states. On average the share is above 70%, which gives banking sectors in these countries both necessary risk management know-how and potential financial support. What is more, banking sectors are relatively concentrated, which should also be perceived as a positive factor for financial stability.

Perhaps the biggest risk stems from share of foreign currency-denominated loans. Persisting interest rate differential to the Eurozone (notably in Hungary and Poland) increases demand for foreign currency loans, thus putting appreciating pressure on New Member states' currencies. Even though major depreciations are unlikely in most of the countries ahead of euro adoption (save Hungary), they cannot be totally ruled out. Additionally, a bulk of foreign-currency financing flows into real estate markets, which provide reliable collateral, as long as asset prices do not fall. Therefore, a potential levelling off of the house prices worldwide, could take its toll on the New Member states' creditors, hence hitting banking sector's results. This risk might induce supervisory institutions to tighten the rules on foreign currency-denominated loans and loan-to-value ratios. This should be especially the case in Hungary and Poland, which witness the highest exchange rate volatilities.

Catching-up will also touch capital markets of the New Member states. However, regulations are coherent with rules imposed in the Eurozone and many bourses seek to merge with some of the European stock exchange groups (i.e. Estonian, Latvian and Lithuanian exchanges joined Omhex). Interestingly, even though the main stock exchanges in the region are relatively well correlated, probability of joint changes in bank shares exceeding one standard deviation is moderate.

In general, evidence from EU15 countries and relatively high asset adequacy ratios in the New Member states suggest that there should not be major problems for financial stability ahead of the EMU entry. Indeed, financial deepening could induce problems in the banking sectors, because most of them seem to be dependent upon exchange rate movements and trends in asset prices. Hence, these aspects should be closely monitored by supervisory institutions.

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