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BANK RISKS FROM CROSS-BORDER LENDING AND BORROWING IN SLOVENIA

Jochen Andritzky Ph.D., Matejka Kavčič Ph.D., Tomaž Košak MA, Tatjana Šuler MA[1]

SUMMARY

Slovene banks are increasingly relying on foreign funding to finance credit, mostly on loans from EU banks. At the same time, to boost profits, banks are increasing their exposure into regions with wider margins, such as the rest of former Yugoslavia.
The expansion of cross-border lending and borrowing can make Slovene banks more vulnerable to interest rate and funding risks, while lending in riskier countries can raise credit and currency risks.
Stress tests do not point to high vulnerabilities, given the still small share of foreign assets, but information on foreign credit exposure could be improved. Future developments should be closely monitored, and stress tests should include more disruptive scenarios of combined shocks.

[1] Mr. Jochen Andritzky IMF, others Bank of Slovenia.

Introduction

Slovene banks have increased cross-border borrowing and lending to compensate for pressures on profitability at home. Profitability has been under pressure since EU integration and euro adoption, as greater competition is narrowing interest margins and revenues from foreign exchange transactions are being reduced. To increase revenues, Slovene banks have started to expand cross-border lending and capital investments in high-margin regions, such as Southeastern Europe. At the same time, to finance growing demand for credit, while depositors are shifting to higher yielding mutual funds, Slovene banks have resorted to foreign borrowing.

These trends can increase vulnerability to various risks. The foreign operations expose Slovene banks to risks related to changes interest rates, direct or indirect currency and credit risks from exposure in riskier markets. The dependency on foreign loans could also increase funding risks, if foreign banks suddenly reduce lending in response to a common shock to the region.

The paper assesses the nature of these vulnerabilities using stress tests. After a brief description of the extend of Slovene banks' cross-border transactions, the paper, based on stress tests conducted by the Bank of Slovenia, analyzes banks' exposure to interest rate, credit, currency, and liquidity risk. It concludes with some policy observations.

The paper finds that vulnerabilities are contained mainly due to the still modest foreign exposure in total assets. The analysis shows that moderate interest rate and margin shocks are not found to put unsustainable pressure on the banking system, as foreign borrowing has reduced the maturity mismatch and lowered the interest rate sensitivity. While the introduction of the euro has lowered currency risks, increasing exposure to foreign credit risk raises vulnerabilities with regard to a downturn in Southeastern Europe (SEE). While these risks warrant greater vigilance, especially as they are concentrated in a few banks, the current size of foreign lending relative to total assets is still small. Liquidity risks, for example, from the withdrawal of foreign funding, are limited for domestic-owned banks, while foreign-owned banks are heavily dependent on financing from their mother institution.

Extent of Cross-Border Lending and Borrowing

The increase in cross-border assets has been concentrated in a few Slovene banks. While part of this reflects a rise in holdings of European securities after Slovenia's entry into the EU in 2004, loans to non-residents increased from 6 percent in 2004 to about 8 percent of banks' balance sheets in 2006. The strongest growth took place in the rest of former Yugoslavia, which reached 3.3 percent of banks' balance sheets in 2006, and was driven by the largest bank in Slovenia. These exposures include loans, off-balance sheet liabilities and securities. While the exposure to non-residents is dominated by lending to foreign banks, claims to the foreign non-banking sector are also increasing. The largest bank has also raised its foreign assets via acquisitions, which will add to the risks from cross-border activities (Box 1). However, this study only covers direct loan growth abroad in the assessment of vulnerabilities.

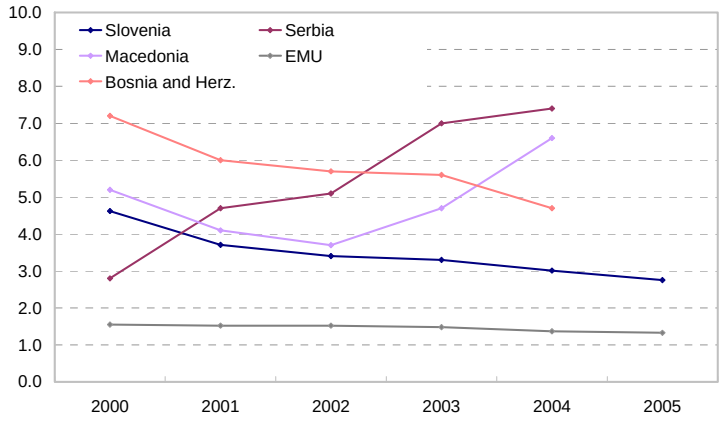
Table 1: Slovenia: Sources of growth of Bank Balance Sheets, 2001-05 (In percentage points of GDP; y-on-y change)

(in percentage points of GDP)	2001	2002	2003	2004	2005
Private sector credit	2.3	0.5	2.4	4.7	7.6
Government credit	0.3	-0.1	-0.3	0.9	0.4
Other financial institutions	0	0.3	0.3	0.2	1.1
Foreign assets	6.5	-7.8	-0.9	0.2	4.7
Deposits	7.7	0.6	-1.2	-0.2	0.9
Bonds	0.1	0.3	0.2	0.7	0.3
Foreign liabilities	0.9	2.3	3.4	4	12.4
Moneymarket instruments	0.5	0.6	0.3	-0.8	-0.3
Other financial institutions	0.2	0.2	0.4	0.2	0
Annual GDP (billions of SIT)	4,800	5,355	5,814	6,272	6,620
Total bank assets (percent of GDP)	83	80	82	85	100

Source: Bank of Slovenia

Most banks have increased borrowing from foreign sources. Foreign loan exposure of Slovenian banks grew from 2 to 12 percent of GDP between 2002-05. The annual growth of over 50 percent in recent years has been higher than the average for other new EU members. This helped finance domestic credit growth at around 20 percent annually. Liabilities to foreign banks now account for 30 percent of total liabilities, and are highest in the foreign owned banks.

Figure 1: Net Interest Margin (in percent)



Source: Bank Scope and IMF staff estimates

The main forces driving Slovene banks' foreign activities are wider margins and lower cost of funds. Margins in Slovenia are gradually converging to euro area levels. In 2006, the net interest margins in domestic banks were 2.3 percentage points compared to 1.8 in foreign-owned ones. The other SEE countries, however, offer significantly higher, albeit volatile margins that can go up to 7 percentage points. Expansion to these higher margins markets has helped Slovene banks sustain profits, that have been under pressure in recent years. Reliance on foreign credit, in turn has been less costly that increasing domestic deposit rates, that compete with returns to mutual funds.

Table 2: Slovenia: Banking Sector Soundness Indicators, 2003-05 (In percent; end of period)

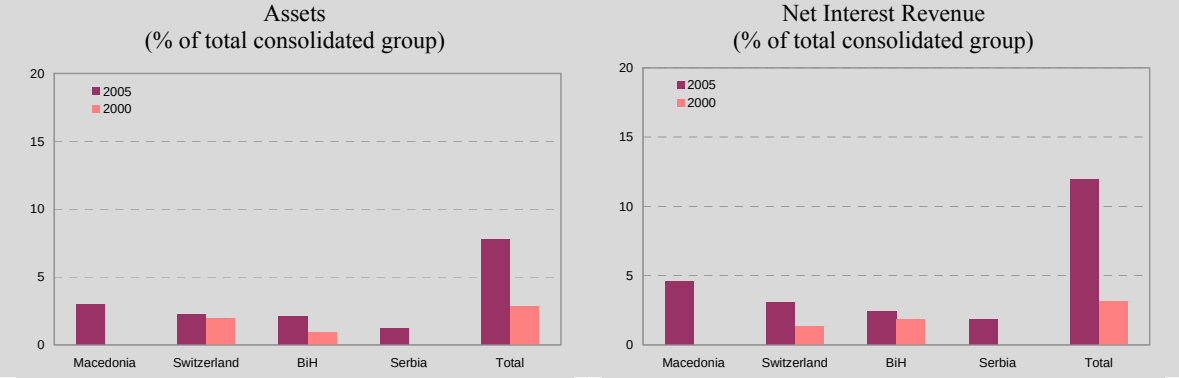
(in %)	2003	2004	2005
Regulatory capital to risk-weighted assets	11.5	11.8	10.6
Net interest margin to average interest bearing assets	3.2	2.8	2.5
Return on average assets (before tax)	1.0	1.1	1.0
Average short-term assets to average short-term liabilities	93.2	88.4	84.8
Variable rate contracts (share of new loans of largest 8 banks)	30.1	38.5	54.5

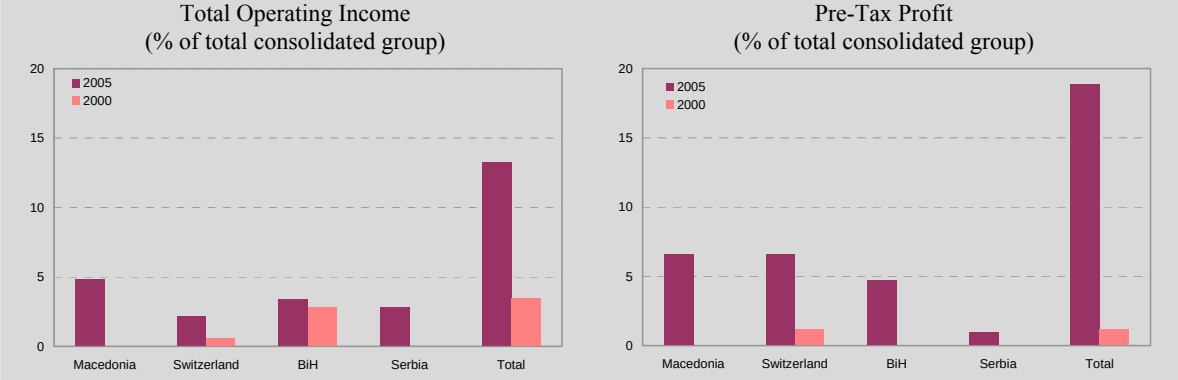
Source: Bank of Slovenia

Box 1: Foreign Expansion of Nova Ljubljanska Banka (NLB)

The foreign expansion of the banking system is led by NLB, the largest Slovene banking group. NLB accounts for 40 percent of total Slovene banking sector assets, and is majority owned directly and indirectly by the state. Two stylized facts on its foreign expansion stand out--foreign asset exposure through subsidiaries in South-Eastern Europe and Switzerland more than doubled over 2000-05, and it earns a disproportionate share of income and profits from its foreign expansion. For example, assets in Macedonia, Serbia, Bosnia and Herzegovina, and Switzerland grew from 3 percent in 2000 to 8 percent of total in 2005. Over the same period, as a proportion of group profits, contribution of the four countries grew from 1 percent to 19 percent. A similar story emerges for operating income and net interest revenue.

Figure 2: Assets, Net Interest Revenue, Total Operating Income and Pre-Tax profit as a percentage of the total consolidated group





Source: Banscope, IMF staff calculations

Stress Tests with Risks from Cross-Border Finance

The vulnerabilities related to foreign expansion are assessed using stress tests on shocks to interest rate, credit, currency and liquidity risks. The tests are based on model results provided by Bank of Slovenia (BoS). In some cases, given the differences in foreign activities of Slovene banks, they are divided into three groups in these tests: large domestic (six), small domestic (seven) and foreign owned banks (nine with foreign controlling stakes). Details on the methodology and assumptions are in the Annex.

Interest Rate Risk

Foreign lending and borrowing affect interest rate risk through interest margins and maturities. Interest income can be affected by divergences in foreign lending and borrowing rates. By relying on cheap funding from the euro area and investing in high margin areas, such as SEE, Slovene banks become subject to increased earnings risk from shifts in interest rates. Foreign lending and borrowing can also change the maturity composition on the banks' balance sheets with different sensitivities to interest rate changes.

Slovene banks are resistant to temporary modest interest rate shocks. A two standard deviation shock to interest rates (2.4 percentage points) shows that the effective interest rate (that takes account of rigidities in balance sheets) would rise by less than 2 percentage points. As a result, interest revenue and expenses are higher in 2006 and 2007 compared to the baseline scenario, but net interest revenue falls. This drop is partly offset by lower costs, such as lower provisions, reducing the negative impact on profits.[2] Capital adequacy is affected more by reduced loan growth than by lower profits, which improves the capital adequacy ratio (CAR) at the time of the shock. Thus the test shows that changes on the banks' balance sheets in response to changes in interest rates remain moderate with significant growth of loans prevailing. However, the interest rate shock used by the test may be too small biasing the results. For example, stress tests conducted by the IMF in the Financial Sector Assessment Program usually apply a shock of three standard deviations to interest rates, and the Basel Committee Amendment to the Capital Accord suggests interest rate increases between 100 and 300 basis points with stress tests.

[2] The adoption of the International Financial Reporting Standards (FRS) in 2006 is expected to support growth in profits in the medium term.

Table 3: Implications of the Interest Rate Shock

	Profit (in EUR mln)	Return on Equity	Capital Adequacy	Growth of loans to non-banks	Non-bank loans / TA	Growth of deposits by non-banks	Non-bank deposits / TA	Growth of TA
Baseline scenario								
2006	346.4	13.3	11.2	26	57.4	8.8	53	19.9
2007	399.8	13.7	11	22.5	61.7	8.2	50.3	13.8
2008	416.5	12.6	10	22.5	65.3	7.4	46.7	15.7
Raising interest rates in the period from Q4 2006 to Q3 2007								
2006	318.4	12.2	11.3	25.6	57.3	8.9	53.1	19.7
2007	251.6	8.6	11.1	18.5	60.9	8.5	51.6	11.6
2008	419.8	12.7	9.9	26	65.2	7.7	47.2	17.7
Differences from the baseline scenario								
2006	-28.0	-1.1	0	-0.4	-0.1	0	0.1	-0.2
2007	-148.1	-5.1	0.2	-4	-0.9	0.3	1.3	-2.3
2008	3.3	0.1	-0.1	3.6	-0.2	0.3	0.5	2

Source: Bank of Slovenia

Foreign borrowing by banks has reduced exposure to interest rate sensitivity by lengthening maturities and reducing maturity mismatch. While about two-thirds of domestic deposits mature within one year, only 12 percent of the banks' foreign loans are short-term. This has improved the maturity structure of banks reducing interest rate and rollover risks. Time to repricing (the remaining time until a change in benchmark rates takes effect) also shows that 94 percent of domestic deposits are repriced within one year, while at 88 percent for foreign credit the share is slightly lower. The average time to repricing of foreign assets also fell from 19 to 16 months between 2005-06, while it remained broadly stable at 6 months for foreign liabilities. As a result, foreign funding has reduced the maturity mismatch for Slovene banks, reducing sensitivity to interest rate shocks.

Banks can sustain moderate increases in foreign funding costs through smaller profits. A 0.5 percentage point reduction of the net interest rate margin, which corresponds to a rise in foreign funding costs by about 2 percentage points, is absorbed by banks through lower profits. The shock would leave the CAR broadly unaffected as there are no balance sheet effects assumed. However, the test may be too mild as it would leave the net interest rate margin at a level above the current EU average. An earlier IMF assessment applied a more significant shock that halved the interest margins. As a result, banks would have incurred losses, and three banks would have required a capital injection.[3]

Table 4: Impact of the Margin Shock

	Profit (EUR mln)	Return on Equity	Capital adequacy
Baseline scenario			
2006	346.4	13.3	11.2
2007	399.8	13.7	11
2008	416.5	12.6	10
Fall in the interest margin by 0.5 percentage points in the period from Q4 2006 to Q3 2007			
2006	308.0	11.8	11.2
2007	274.6	9.4	10.8
2008	416.5	12.6	9.8
Differences from the baseline scenario			
2006	-38.0	-1.5	0
2007	-124.8	-4.3	-0.2
2008	0.0	0	-0.2

Source: Bank of Slovenia

In sum, the stress test show that the Slovene banking system can easily absorb moderate interest rate and margin shocks. A sensitivity analysis for a temporary interest rate shock results in lower profits, but credit growth and capital adequacy are sustained. Foreign borrowing has increased the duration of the banks' liabilities, therefore reducing the maturity mismatch. A jump in foreign funding costs, that reduces the net interest margin, could significantly reduce profits, but only a very dramatic fall in margins would result in losses and undercapitalization. However, the shocks are relatively mild, and larger shocks, or the combination of shocks such as a deterioration in credit quality, credit losses or a sudden stop of foreign funding can show greater vulnerabilities. This, however, remains to be tested.

[3] See IMF (2004), p. 14.

Credit and Currency Risk

Table 5: Balance Sheet and Off-Balance Sheet Assets of Banks and Special Provisions

	Loans to banks	Loans to nonbanks		
		EU	Non-EU	Ex-Yugo
Foreign claims (percent of total assets)	18.4	7.6	5.2	2.2
Foreign classified assets (percent of total assets)	14.4	3.0	3.6	2.1
Provisions (percent of foreign classified assets)	0.5	10.5	5.5	5.5

Sources: Bank of Slovenia, IMF staff calculations

Credit and currency risks arise mainly from exposures to SEE. Euro adoption and EU membership are likely to have reduced some of these risks for Slovenia, while growing exposure to SEE raises mainly credit and currency risks in a region that still needs to see a slow-down in growth.

The greater credit risks of foreign lending are reflected in higher provisions in Slovene banks, which should mitigate vulnerabilities. Non-resident loans are classified riskier than domestic loans by banks--provisions for loans to non-residents are about 9 percent compared to about 4 percent for all loans. This reflects the higher proportion of nonperforming loans (NPL) in some areas, such as SEE, where estimates of the NPL ratio range from 3 to 10 percent.

However, banks' ability to face risks is reduced by low provisions for loans to subsidiaries of Slovene banks and to Slovene enterprises in SEE. Foreign subsidiaries originate loans in their credit portfolios and refinance them through their mother institution in Slovenia. However, the latter classify these loans as low risk.[4] This may also explain why provisioning in Slovenia to non-EU countries is lower than to EU-countries. As data on onlending by these foreign subsidiaries is not available, and thus credit risk at the subsidiaries and the likelihood of a risk pass-through are hard to quantify. This can mean that credit risks abroad may be underestimated in balance sheets in Slovenia.

At the same time, currency risks in Slovene banks from foreign operations have been substantially reduced by euro adoption. On the funding side, euro adoption eliminated much of the currency risk, while on the lending side, indirect currency risks remain despite the fact that loans in SEE tend to be in foreign currencies.[5] While the euro is the most common currency of denomination in these countries, some loans, in particular residential housing loans are denominated in non-euro currencies, such as Swiss francs. Part of the lending may also be to unhedged borrowers, that may be vulnerable to a sudden change in market conditions or exchange rates. This in a way can substitute currency risk for credit risk in exposure to SEE. As the lending business expands rapidly during times of benign economic circumstances, the quality of this segment of lending, and the appropriate handling of a downturn, is yet to be tested

Overall, currency and credit risks from foreign operations of Slovene banks remain small given the still limited exposure in total assets. Despite rapid growth in lending to SEE, and potential under-provisioning for credit risks in the region, this exposure at 3 percent of the banks' balance sheets remains small. Together with euro adoption, this suggests that overall risks from exposure to SEE are low. However, their development should be monitored closely. Loan growth to this region is high, and available information on the pass-through of credit risk from foreign lending appears limited despite well established supervisory cooperation.

Liquidity Risk

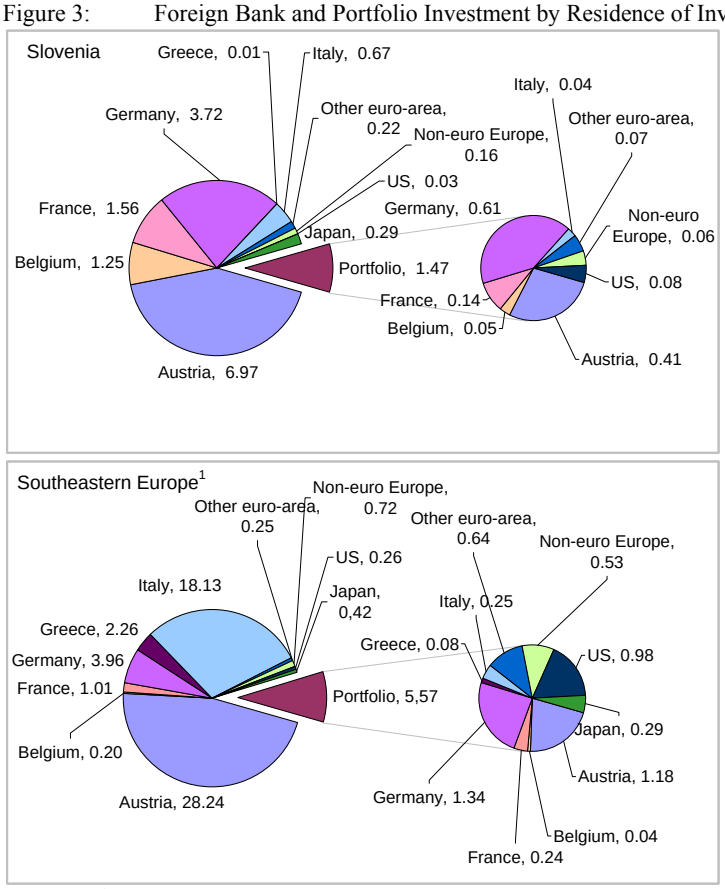
The growing dependence of Slovenia's bank finance on external funds increases the sector's vulnerability to liquidity risk. Given the banks' funding from the euro-area and their credit exposure to SEE, a sudden downturn in the latter region could have repercussions on Slovene banks. A contagion scenario, triggered for example, by a shock in some of the SEE countries, would not only deteriorate the credit quality of Slovene bank assets, but could at the same time cause a sudden stop of foreign funding. To assess these risks, the following traces the origins of capital flows to Slovenia and evaluates a potential impact of a withdrawal of foreign lending on the banks' liquidity ratio and profitability.

The vulnerability to contagion in Slovenia and in SEE is increased by concentration of foreign funding to banks in a few neighbouring EU countries. Austria is the most dominant provider of capital to Slovenia, as to SEE in general, followed by Germany. Most of the investments are bank loans reflecting the relatively underdeveloped financial markets. The dominance of a few countries in the bank loans may reflect the distribution of foreign equity participations in Slovenia--most of the 35 percent of foreign held-equity originates in Austria and Germany. As the same banks are active in other

[4] Loans to subsidiaries are classified as A-rated on a rating scale from A to E.
[5] 78 percent of lending in Croatia, and 85 percent in Serbia, (in particular so for long-term lending) is denominated in non-domestic currency.

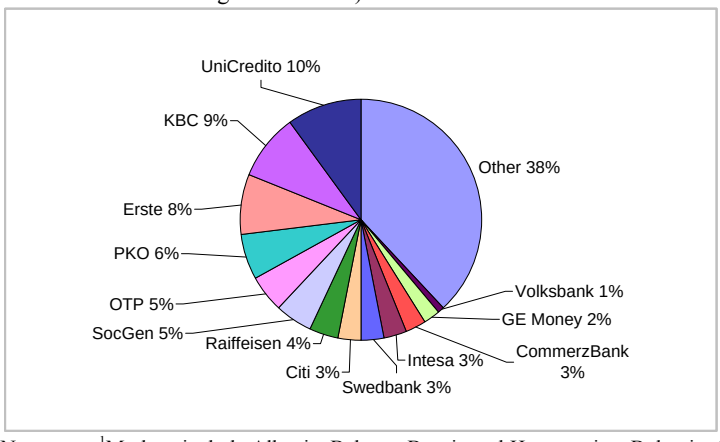
countries in the region as well, potential for contagion risks is increased. By the end of 2005, half of all Eastern European foreign owned bank assets were concentrated in eight bank groups.

Figure 3: Foreign Bank and Portfolio Investment by Residence of Investor, 2005 (In billions of U.S. dollars)



Note: [1]Albania, Bosnia and Herzegovina, Croatia, Macedonia, Serbia and Montenegro. Other euro-area includes Netherlands, Portugal, Spain; Non-euro Europe includes Denmark, Norway, Sweden, Switzerland and United Kingdom. Data unavailable or confidential for bank loans from Norway and portfolio investments from United Kingdom.
Sources: BIS; CPIS; and IMF staff estimates.

Figure 4: Eastern European Bank Asset Structure, by Key Bank Groups, end 2005[1], (In percent of total CEE banking sector assets)



Note: [1]Markets include Albania, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Kosovo, Latvia, Lithuania, Poland, Romania, Russia, Serbia (data presented are for Serbia and Montenegro), Slovakia, Slovenia and Ukraine.
Source: RZB Group 2006

The vulnerability of Slovene banks to sudden stops was tested with changes to the liquidity ratio. This stress test assesses the change in the liquidity ratio (which is defined as the ratio between liquid assets and short-term liabilities) and pre-tax profits in two scenarios--a withdrawal of liabilities to foreign banks by 20 and 100 percent. The reduction in liabilities to

foreign banks is followed by an adjustment on the asset side according to their degree of liquidity. Depending on the liquidity need and the available liquid assets, the stress test shows whether banks need to diminish their credit activity. However, this test can slightly underestimate the impact of sudden stops, as this may also have repercussions on the whole economy.

Table 6: Liquidity Stress Test: Balance Sheet Items (actual and scenario)

(in EUR bln)	Actual					Foreign liquidity shock of 20%				Foreign liquidity shock of 100%			
	Total	Total	Domestic Banks		Foreign	Total	Domestic Banks		Foreign	Total	Domestic Banks		Foreign
	Dec. 05	Sep. 06	Large	Small	Banks		Large	Small	Banks		Large	Small	Banks
Total assets	36.4	32.4	21.5	3.4	7.5	30.6	20.5	3.4	6.7	23.3	16.6	3.3	3.4
Interbank assets	3.6	3.2	2.1	0.4	0.8	1.6	1.1	0.3	0.2	0.3	0.0	0.2	0.0
Cash reserve	0.6	0.5	0.4	0.1	0.1	0.5	0.4	0.1	0.1	0.1	0.0	0.1	0.0
DIC	6.9	5.1	3.5	0.6	0.9	5.0	3.5	0.6	0.8	1.8	1.2	0.6	0.0
Securities held for trading	2.0	1.4	1.0	0.2	0.2	1.4	1.0	0.2	0.2	1.1	0.9	0.2	0.0
Short-term NBS assets	6.5	6.4	4.3	0.9	1.2	6.4	4.3	0.9	1.2	5.6	4.3	0.9	0.4
Other assets	16.7	15.8	10.2	1.3	4.3	15.8	10.2	1.3	4.3	14.5	10.2	1.3	3.0
Liabilities													
Liabilities to foreign banks	9.8	9.2	4.9	0.2	4.1	7.3	3.9	0.1	3.3	0.0	0.0	0.0	0.0
Liabilities to domestic banks	0.6	0.7	0.3	0.3	0.1	0.7	0.3	0.3	0.1	0.7	0.3	0.3	0.1
ST Liabilities to NBS	9.5	8.2	5.8	1.1	1.3	8.2	5.8	1.1	1.3	8.2	5.8	1.1	1.3
Other liabilities	16.4	14.4	10.5	1.9	2.0	14.4	10.5	1.9	2.0	14.4	10.5	1.9	2.0
Liabilities to foreign banks/TA	0.3	0.3	0.2	0.1	0.5	0.2	0.2	0.0	0.5	0.0	0.0	0.0	0.0
Liquidity ratio	1.0	0.9	1.0	1.4	0.6	0.9	1.0	1.4	0.5	0.9	1.0	1.4	0.3

Source: Bank of Slovenia

Foreign-owned banks are most vulnerable to a withdrawal of foreign funding. About one half of total assets and liabilities in the Slovene banking system are short-term. The share of short-term liabilities provided from abroad is 40 percent for domestic banks, and three quarters for foreign-owned banks. As a result, smaller banks have the most comfortable liquidity ratio, while it is lowest in the foreign-owned banks. This may reflect the foreign-owned banks' role of transferring funds from their parent banks to long-term loans in Slovenia. The stress test, that assumes that short-term assets can be liquidated without any problems, shows that domestic banks can sustain the complete withdrawal of foreign funding without incurring liquidity problems. In contrast, foreign owned banks, that depend on foreign funding, are more vulnerable. In case of a complete withdrawal, foreign banks would suffer from an insufficient liquidity ratio, and would need to liquidate their long-term assets. However, the stress-test scenario assumes that foreign subsidiaries are abandoned by their mother institutions, which is unlikely.

Table 7: Impact of a Liquidity Shock on Profits

	Weighted interest spread (in %)	Profit before shock (EUR mln)	Profit after shock (EUR mln)	Change in profit (EUR mln)
Foreign liquidity shock of 20%				
Large domestic banks	4.25	238	196	-42
Small domestic banks	2.71	38	38	0
Foreign-owned banks	3.03	29	4	-25
Overall	3.67	300	234	-67
Foreign liquidity shock of 100%				
Large domestic banks	4.25	238	29	-209
Small domestic banks	2.71	38	33	-4
Foreign-owned banks	3.03	29	-96	-125
Overall	3.67	300	-33	-338

Source: Bank of Slovenia

Foreign banks are most vulnerable to sudden stops, with the larger shock causing a profound loss of income. With 20 percent withdrawal of liabilities to foreign banks, six of the nine foreign-owned banks would make losses. In case of a complete withdrawal, all foreign owned banks and two large domestic banks would incur losses.

If feedback effects are incorporated, a liquidity shock would also impair large domestic banks. The current test assumes that banks can choose liquidating interbank loans, while the effect on the counterparty's balance sheet is not taken into account. In case of a full withdrawal of foreign funding, the complete liquidation of all interbank assets (as suggested in the table) might prove unrealistic as this would send shock waves throughout the banking system. Taking feedback effects of liquidating all interbank loans into account, large domestic banks would be left with insufficient liquidity ratios.

In sum, the analysis shows that liquidity risk in Slovenia is low. Although the tests point to some vulnerability to sudden stop shocks, their occurrence in Slovenia is likely to be small. While a shock in SEE may cause foreign banks to reduce exposure in the region, they are likely to differentiate with Slovenia given its membership in the euro area and the EU. Its exposure in SEE is also still modest to create major concerns for the banking system in Slovenia. However, this is not to say that Slovenia would not be impacted by a slow-down in foreign credit given its high reliance on foreign borrowing from a few sources to finance asset growth. Thus diversification of the funding base would spread the risks better and reduce the vulnerability to liquidity risk.

Conclusion

While vulnerabilities to various risks from foreign exposure seem contained in Slovenia, the rise in cross-border activities merits close monitoring. While increasing the dependence on foreign funds, borrowing from abroad has diversified the funding base and contributed to a lower maturity mismatch reducing exposure to interest rate risks. The strong expansion of lending abroad has mitigated the margin pressure on Slovene banks, but it comes at the expense of higher credit risks. Although this exposure remains small in total, the current provisions may not fully cover these risks. A deterioration of foreign credit quality, possibly upon the end of the current credit boom in SEE, could cut into profits. Despite a concentration of funding from a few sources in Europe exposed to elsewhere in Eastern Europe, and large impact of sudden stops with stress tests, contagion risks remain small given Slovenia's euro area membership.

Closer monitoring, in particular with regard to credit risks, and broader stress tests could add to the understanding of risks from cross-border lending and borrowing. The analysis on credit risk is limited by data availabilities, and, more generally by perhaps benign assumptions. Better reporting of credit risks in SEE would give more information on country exposure and currency composition from foreign lending and borrowing. More thorough information about the credit quality of non-resident loans and the loan portfolios of Slovene banks' foreign subsidiaries are also necessary to monitor the appropriateness of provisions.[6] Stress tests could be extended to analyze a scenario which combines a sudden decline in foreign funds with a simultaneous deterioration of credit quality of foreign loans, including those to foreign subsidiaries of Slovene banks.

Cross-border supervisory cooperation will also remain important in detecting vulnerabilities. Supervisory coordination between EU countries could serve as benchmark to establish a level playing field of foreign banks active in non-EU countries.[7] Besides cross-border interagency communication, memoranda of understanding could also encompass crisis prevention.[8]

[6] The 2004 FSAP recommendations have already pointed out that the banking supervision should strengthen its risk focus and ensure that pricing of risk and provisioning are appropriate. Furthermore, supervisors should give consideration to how prudential tools, including provisioning policies, could be used to address risks.
[7] See Belaisch and others (2001).
[8] See IMF (2007).

APPENDIX

Interest rate stress test

The interest rate shock used--a temporary interest rate increase of 2.4 percentage points--corresponds to two standard deviations of the variance in the last 11.5 years. This scenario assumes that the two main reference interest rates, the yield on 60-day tolar bills and the one-year EURIBOR, are raised for four consecutive quarters (Q4 2006-Q3 2007) before receding to their previous level. Upon the shock, the income implications are derived based on the duration of assets and liabilities. Other input variables are taken from the Economic Projections based on a structural model of the Bank of Slovenia and published in the Monetary Policy Report, October 2006.

The setup of the stress test implies that the interest rate shock reduces the demand for loans and stimulates savings, albeit with a lag and delayed pass-through of higher interest rates on deposits. On the one hand, the non-banking sector responds to the increase in interest rates by reducing new borrowing. The rate of growth of loans to the non-banking sector in 2006 is 0.4 percentage points lower than in the baseline scenario. The growth of total assets follows the growth of loans to the non-banking sector. Current loans require longer to adjust to the new circumstances, which is why most of the impact of the higher interest rates manifests itself only in 2007. On the other hand, higher interest rates stimulate saving, although with a delay. In the case of a higher rise in interest rates, the non-banking sector would allocate disposable income for the early repayment of current loans rather than for deposits. Higher interest rates could encourage the transfer of funds from alternative investments into bank deposits, although this shift is not immediate and only partial.

In another test, a net interest rate margin shock of 0.5 percentage point is assumed to take place in the fourth quarter of 2006 and reverse one year later. As opposed to the interest rate stress test, the interest margin shock is modeled to affect only interest expenses, while the interest rate shock affects both interest expenses and revenue. The margin shock is assumed to leave the balance sheet structure unaffected. The drop in the interest rate margin tries to mimick a rise in the cost of foreign funding. A corresponding rise in foreign interest rates would be highest in the first quarter of the shock, rising by 2.3 percentage points. In subsequent quarters, the interest rate rises less (2 percentage points in the second quarter, 1.9 in the third and 1.8 in the fourth quarter) due to base effects.

Liquidity stress test

The liquidity ratio is defined as the ratio between liquid assets and short-term liabilities. Based on Boss and others (2004), liquid assets are defined as the sum of interbank assets, cash reserves, government bonds available for sale, debt instruments and equities held for trading, and other short-term non-banking sector assets. Short-term liabilities are defined as the sum of liabilities to foreign banks, liabilities to domestic banks and short-term liabilities to the non-banking sector.[9]

The liquidity shock assumes that foreign banks withdraw their short-term funding and force Slovene banks to liquidate their short-term assets accordingly. Upon the reduction of short-term liabilities to foreign banks, the assets side is adjusted by liquidating the most liquid assets first before rationing long-term credit business. Depending on the need to reduce short- and long-term credit activities, the impact on profits is calculated on base of current weighted interest margins.

[9] See Boss and others (2004).

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THE RISK OF LOANS IN SWISS FRANCS

Tatjana Šuler MA[1]

SUMMARY

In Slovenia the amount of loans in Swiss francs more than doubled in 2006, with accelerated growth continuing in the first months of 2007. As a rule, households are prepared to assume greater risk, while the attitude of non-financial corporations to loans in Swiss francs is more conservative. Our assessment is that households base their decisions for taking out loans solely by comparing current interest rates and loan instalments and do not take into account the fact that loans linked to the Swiss franc exchange rate are exposed to interest rate and foreign exchange risk. Based on simulations it is evident that, given a low probability, loan instalments for loans in Swiss francs could be higher than loan instalments for loans in euros when the reference interest rate is repriced (usually after six months). This could also mean a considerably higher loan repayment amount. For borrowers to be protected to a greater extent against foreign exchange and interest rate risks, the loan to income ratio should be considerably lower for loans in Swiss francs than for loans in euros. It would therefore make sense that a borrower takes out a loan up to an amount for which he/she has the same credit capacity for an equal loan in euros (i.e. in the same amount and under the same conditions valid for loans in euros). This would enable a borrower to repay an existing loan by taking out a new loan in euros in the event of unfavourable fluctuations of exchange rates and interest rates. A loan in euros would be naturally hedged; a borrower having income in the same currency as the loan would not be exposed to exchange rate risk. A loan in euros is also less exposed to interest rate risk given that the EURIBOR reference interest rate is less volatile compared to the LIBOR for Swiss francs.

[1] Bank of Slovenia

Introduction

Over the past two years in Slovenia we have witnessed rapid growth and an increased share of loans to the non-banking sector in Swiss francs and loans with a Swiss franc currency clause. These types of loans achieved growth of 108% in 2006. In the first three months of 2007 alone, the volume of loans to the non-banking sector linked to the Swiss franc exchange rate has risen by 18%. At the end of March 2007 the volume of these loans reached EUR 1 billion, or 5% of all loans to the non-banking sector. The share of loans linked to the Swiss franc exchange rate is particular high for housing loans to households, reaching 22.4% in March 2007.

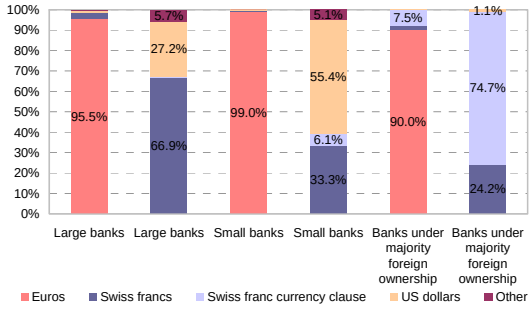
Awareness of exchange rate risk in Slovenia is likely lower than in countries with floating exchange rate regimes as Slovenian households generally took out loans in euros in the past, and because the euro exchange rate has been very stable the past two years and relatively predictable in previous periods. On the other hand, it has been found that borrowers are prepared to take out foreign currency loans without additional hedging even in countries that experience significant exchange rate fluctuations, particularly if the domestic currency is expected to appreciate and if the difference in interest rates is sufficiently favourable. Even in Slovenia, the interest rate and instalment amount are the decisive factors when taking out a loan, while currency and interest rate risk are often disregarded. Due to repricing of the reference interest rate and exchange rate fluctuations, a loan instalment in Swiss francs may increase significantly in just a few months, bringing the credit capacity of the borrower and the quality of the loan into question.

Simulations of loans in euros and Swiss francs are presented in detail below. The impact of fluctuations of the exchange rate and the reference interest rate on the loan instalment, on a borrower's credit capacity and on the total loan repayment amount are assessed. Since other EU Member States are faced with a similar situation as Slovenia, the experiences of these countries with foreign currency loans and loans in Swiss francs are also presented. The findings of an informal group of 11 countries are summarised, with an analyses of conditions in the area of foreign currency loans and associated risks, how the non-banking sector and banks hedge against risks and what central banks and supervisory institutions can do to mitigate the systemic risk linked to foreign currency loans.

Currency structure of loans

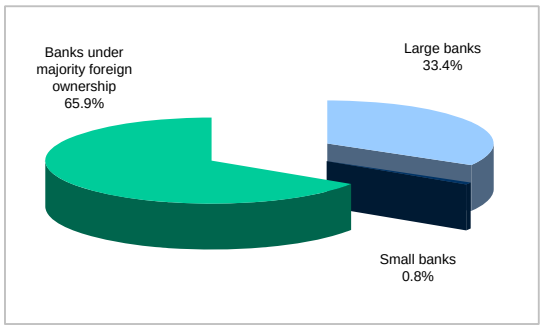
Following the introduction of the euro, the exposure of banks and the non-banking sector to exchange rate risk has been reduced significantly. The share of foreign currency loans to the non-banking sector has fallen from approximately 55% to around 6%. However, loans linked to the Swiss franc exchange rate have increased in significance. Taking into account also loans with currency clauses, the share of loans linked to the Swiss franc exchange rate in March 2007 was 84.5% of all loans to the non-banking sector that are linked to the fluctuation of foreign currencies exchange rates. Borrowing in Swiss francs is attractive primarily due to lower reference interest rates. Despite a higher margin on reference interest rates, the collective interest rate of borrowing in Swiss francs is still lower than for loans in euros.

Figure 1: Currency structure of loans to the non-banking sector by bank groups for March 2007



Source: Bank of Slovenia

Figure 2: Market shares of individual bank groups in the structure of loans to the non-banking sector linked to the Swiss franc exchange rate for March 2007



Source: Bank of Slovenia

Banks under majority foreign ownership are most active in providing loans in Swiss francs or loans with a Swiss franc currency clause. Banks under domestic ownership also have a significant share of loans in US dollars, while nearly all loans at banks under majority foreign ownership are in Swiss francs or with a currency clause linked to the Swiss franc exchange rate. At banks under majority foreign ownership, loans linked to the Swiss franc exchange rate represent 10%

of the entire volume of loans to the non-banking sector but only 3% at large banks according to the data for March 2007. In the entire structure of loans to the non-banking sector linked to the Swiss francs exchange rate, the share of banks under majority foreign ownership was nearly 66% at the end of March 2007. The share of large banks was 33.4%, while the share of small banks was negligible.

Table 1: Currency structure of all loans to the non-banking sector, foreign currency loans and loans with currency clauses to the non-banking sector, by sectors at the end of 2005, 2006 and March 2007

	Non-financial corporations		OFO		Goverment		Households		Total	
	All loans	Foreign currency loans	All loans	Foreign currency loans	All loans	Foreign currency loans	All loans	Foreign currency loans	All loans	Foreign currency loans
					2005					
Tolars and euros	96.9%		90.3%		97.9%		94.2%		95.9%	
Swiss francs	1.4%	43.6%	2.5%	25.7%	0.6%	31.1%	0.1%	2.2%	1.1%	26.2%
Swiss francs currency clause	0.4%	12.4%	0.1%	1.4%	0.3%	14.7%	5.7%	97.8%	1.7%	41.6%
US dollars	1.3%	42.1%	6.5%	67.6%	1.1%	54.2%	0.0%	0.0%	1.3%	30.5%
Other	0.1%	2.0%	0.5%	5.3%	0.0%	0.0%	0.0%	0.0%	0.1%	1.6%
					2006					
Tolars and euros	96.5%		91.5%		97.4%		89.4%		94.4%	
Swiss francs	1.9%	54.5%	3.9%	45.9%	0.3%	12.7%	2.8%	26.3%	2.2%	39.5%
Swiss francs currency clause	0.5%	14.9%	0.3%	3.6%	1.1%	43.5%	7.8%	73.6%	2.4%	41.9%
US dollars	0.9%	27.2%	3.2%	38.1%	1.1%	43.9%	0.0%	0.0%	0.9%	15.8%
Other	0.1%	3.4%	1.0%	12.4%	0.0%	0.0%	0.0%	0.0%	0.2%	2.8%
					Mar. 2007					
Euros	96.4%		90.6%		96.8%		88.5%		94.0%	
Swiss francs	2.1%	59.6%	5.2%	54.8%	0.3%	10.1%	3.0%	25.8%	2.5%	42.3%
Swiss francs currency clause	0.5%	15.2%	0.3%	3.1%	1.6%	50.7%	8.5%	74.2%	2.5%	42.2%
US dollars	0.8%	22.0%	3.0%	31.9%	1.2%	39.2%	0.0%	0.0%	0.8%	13.0%
Other	0.1%	3.2%	1.0%	10.3%	0.0%	0.0%	0.0%	0.0%	0.1%	2.5%

Source: Bank of Slovenia

Significant differences in the currency structure of loans by sector are also present. Households are very willing to assume exchange rate risk while non-financial corporations take a more conservative approach to loans in Swiss francs. In the structure of loans to non-financial corporations and the government, more than 96% of loans are linked to the euro according to data for March 2007. The share of these types of loans is only 88.5% for households, which is less than that for other financial organisations (OFO). The share of loans linked to foreign currency exchange rates posted the highest growth for households. This share was 5.7 percentage points higher in March 2007 compared to the end of 2005. All foreign currency loans of households or loans with a currency clause are linked to the Swiss franc exchange rate. At the same time, the share of loans linked to currency clause is declining leading to an increase of the share of pure foreign currency loans. Compared to data for 2005, changes to the currency structure of loans linked to foreign currency exchange rates have also been identified for other sectors. The share of foreign currency loans linked to the Swiss franc has increased primarily due to a decrease in the share of loans in US dollars.

The differences are even more apparent in the currency structure of new loans. Loans linked to the Swiss franc exchange rate represented 13.4% of new loans approved by banks to households in 2006, while these types of loans represented only 2.7% of new loans approved to non-financial corporations and OFOs.

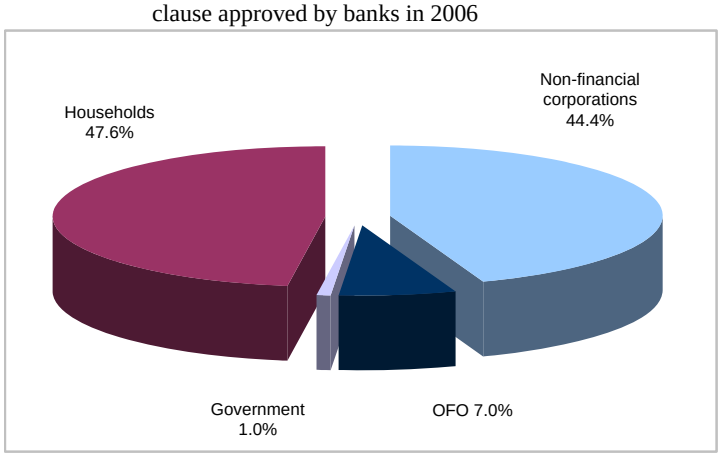
Table 2: Currency structure of new loans and new foreign currency loans to the non-banking sector and the structure by sectors for newly approved loans in 2006 and in the first quarter of 2007

	Non-financial corporations		OFO		Goverment		Households		Total	
	All new loans	New foreign currency loans	All new loans	Foreign currency loans	All new loans	New foreign currency loans	All new loans	New foreign currency loans	All new loans	New foreign currency loans
					2006					
Tolars and euros	96.2%		87.7%		99.0%		86.5%		93.9%	
Swiss francs	2.4%	62.8%	2.5%	20.0%	0.4%	36.7%	2.1%	15.9%	2.3%	37.3%
Swiss francs currency clause	0.3%	8.5%	0.2%	1.7%	0.6%	63.3%	11.3%	83.8%	2.0%	32.5%
US dollars	1.0%	25.6%	7.2%	58.6%	0.0%	0.0%	0.0%	0.2%	1.5%	24.3%
Other	0.1%	3.0%	2.4%	19.7%	0.0%	0.0%	0.0%	0.1%	0.4%	5.8%
					January to March 2007					
Euros	97.5%		88.6%		99.0%		86.6%		95.1%	
Swiss francs	1.9%	74.9%	6.1%	53.7%	0.0%	0.5%	3.7%	27.5%	2.6%	51.9%
Swiss francs currency clause	0.2%	8.4%	0.0%	0.0%	1.0%	99.5%	9.7%	72.3%	1.4%	28.8%
US dollars	0.4%	15.2%	4.3%	38.0%	0.0%	0.0%	0.0%	0.2%	0.8%	16.4%
Other	0.0%	1.5%	1.0%	8.4%	0.0%	0.0%	0.0%	0.0%	0.1%	2.9%

Source: Bank of Slovenia

Households held the largest share (47.6%) of all new bank loans to the non-banking sector in Swiss francs or loans with a Swiss franc currency clause in 2006, while non-financial corporations represented a 44.4% share.

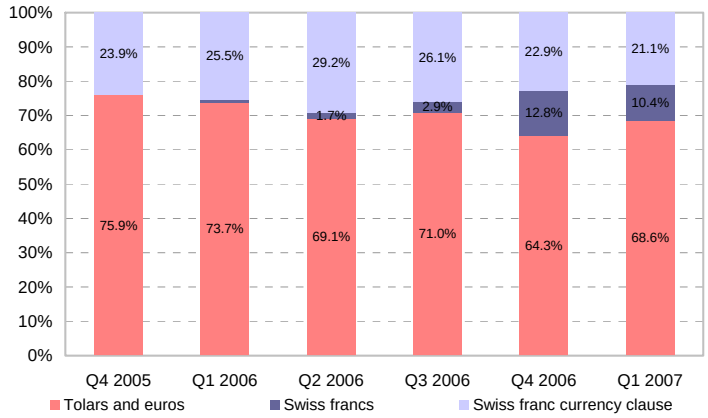
Figure 3: Shares of individual sectors in the structure of loans in Swiss francs or loans with a Swiss franc currency clause approved by banks in 2006



Source: Bank of Slovenia

Loans in Swiss francs, taken out by households, are primarily long term housing loans. At the end of March 2007, housing loans in Swiss francs or loans with a Swiss franc currency clause totalled EUR 454 million or 22.4% of all housing loans. The share of loans linked to the Swiss franc exchange rate is even higher for newly approved housing loans. On average, 30.9% of new housing loans were linked to the Swiss franc exchange rate in 2006. That share reached even 35.7% in the last quarter of 2006.

Figure 4: Changes to the currency structure of new housing loans to households



Source: Bank of Slovenia

Based on the comparisons presented it is apparent that the assessment of non-financial corporations regarding the risks and advantages of loans in Swiss francs is considerably more conservative than the assessment of households. The differences in the structure indicate that household's risk awareness is low and that decisions are based solely on current interest rates and the instalment amount at the time a loan is approved. Low risk awareness is demonstrated by the fact that the share of loans in Swiss francs is growing fastest in the housing loan segment, where every difference in the interest rate level has a significant impact due to the long-term maturities and high amounts of loans. Redemption plans presented to borrowers only show the costs of a loan at the current interest rate and exchange rate and do not take into account the probability of changes to these factors and their impact on the instalment and loan amounts.

Households can respond to unfavourable fluctuations of interest rates or exchange rates by altering their decisions with regard to taking out new loans or the repayment of smaller, mainly consumer, loans. Due to the amount of a loan, particularly in comparison with income, borrowers have little possibility to significantly change the method of financing for housing loans that have already been approved. Loans do exist with the possibility of shifting from one currency to another: in cases of unfavourable foreign exchange rate fluctuations, but banks as a rule only offer repayment of an old loan and approving a new loan in another currency with related costs. When unfavourable fluctuation of an exchange rate or reference interest rate occurs, a borrower may also request debt rescheduling (i.e. extension of maturity or temporary reduction of the loan instalment), but this also brings additional costs. For loans in Swiss francs, borrowers usually don't have a natural hedge as their income is typically not in the same currency of the loan. Banks do not offer households derivatives to hedge exchange rate and interest rate risks, or households do not opt for such instruments due to the associated costs and a lack of understanding of hedging instruments.

As a rule, households bear the main burden of the risks associated with loans in Swiss francs. Banks are well protected against such risks. Due to their closed foreign exchange positions in Swiss francs and the balancing of shares of interest sensitive assets and liabilities linked to the LIBOR for Swiss francs, the direct exposure of banks to exchange rate and interest rate risks from items denominated in Swiss francs is relatively low. Indirect exposure is higher: i.e. unfavourable fluctuations that would reduce the ability of the non-banking sector (particularly of households) to regularly settle their obligations would increase the banks' credit risk. However, the main burden of risks is borne by households in the case of loans in Swiss francs.

The main purpose of this text is to encourage more thorough deliberation of risks when taking out a Swiss francs housing loan. An individual opting for a loan in Swiss francs should be aware that a loan in Swiss francs carries greater risk than a loan in euros and should be familiar with risks assumed. The borrower should understand his/her own attitude regarding risks (i.e. is he/she more conservative or is he/she prepared to make decisions that bear greater risk), be familiar with and monitor fluctuations in financial markets. The difference in interest rates between a loan in euros and a loan in Swiss francs should cover his/her assessment of the increased risk associated with the latter. For such a borrower can a decision to take out a loan in Swiss francs be a reasonable one.

Increased awareness of borrowers regarding the risks assumed when taking out a loan in a currency other than the currency of their income would prevent the situation when the unfavourable fluctuations of interest rates and exchange rates caught the borrowers by surprise. Greater awareness of risks would also prevent conversations regarding new loans between borrowers and bank employees being centred solely on interest rates. When concluding a loan agreement, borrowers would already be aware to which risk they should give their attention, what they can do in the event of unfavourable fluctuations in financial markets and how to hedge against various risks.

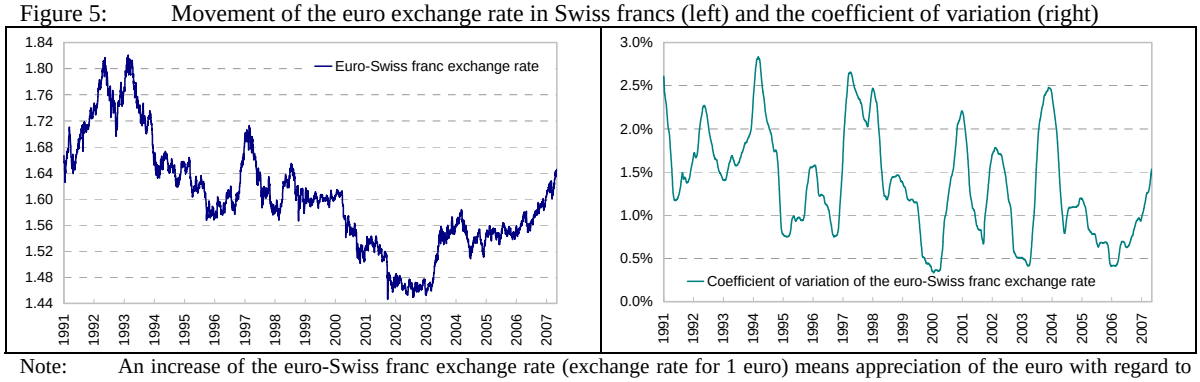
Risks associated with loans in Swiss francs

Awareness of the fact that loans in Swiss francs bear exchange rate and interest rate risk is essential. The borrower knows the interest rate and exchange rate when a loan is taken out. Risk is linked to the volatility of these two factors during the loan repayment period.

While loans in euros are not exposed to exchange rate risk, the exchange rate for loans in Swiss francs is subject to change. Although the Swiss franc is known as a stable currency, fluctuations of the Swiss franc exchange rate and reference interest rates linked thereto are governed by monetary and exchange rate policies that are independent of ECB policies.

The coefficient of variation[2], as a measure of volatility, for the euro-Swiss franc exchange rate has fluctuated between 0.5% and 2.5% during period 1991 to 2007. The average coefficient for the entire period is 1.4% and has been on the rise since the beginning of 2006.

Figure 5: Movement of the euro exchange rate in Swiss francs (left) and the coefficient of variation (right)

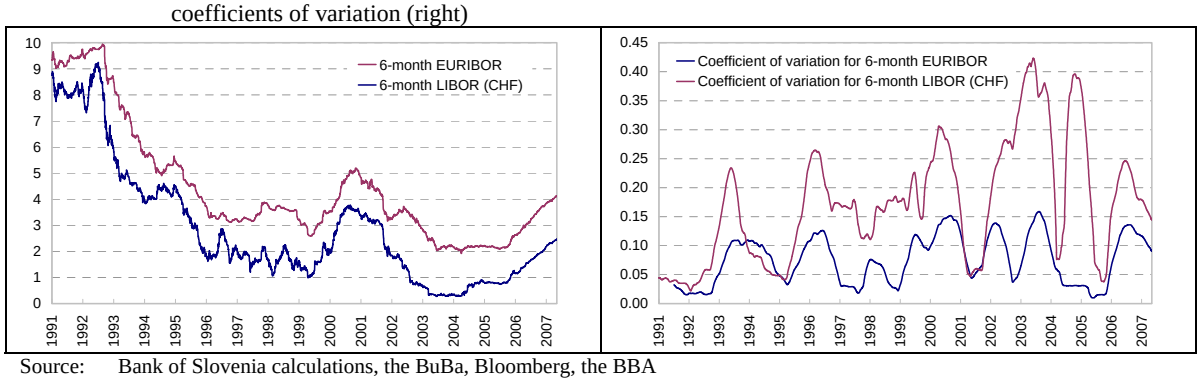


Note: An increase of the euro-Swiss franc exchange rate (exchange rate for 1 euro) means appreciation of the euro with regard to the Swiss franc, or measured in euros, the decrease of a loan instalment linked to the Swiss franc exchange rate.
Source: Bank of Slovenia calculations, the BuBa, Bloomberg, the BBA

The significance of volatility is more evident for interest rate risk than for exchange rate risk. Both loans in euros and loans in Swiss francs are exposed to interest rate risk. Most frequently, loans in euros are linked to the 6-month EURIBOR while loans in Swiss francs are generally tied to the 6-month LIBOR. Throughout the entire observation period (since 1991), the LIBOR for the Swiss franc has lagged behind the EURIBOR. At the end of April 2007, the difference between the two reference interest rates was 1.75 percentage points (the 6-month EURIBOR stood at 4.32% while the LIBOR for the Swiss franc of the same maturity was 2.47%).

If an individual's decision to take out a loan is based solely on this difference, he/she neglects the fact that the volatility and unpredictability of the LIBOR for the Swiss franc is considerably greater than that of the EURIBOR. The average coefficient of variation for the entire period observed (from the beginning of 1991 to the end of April 2007) was 7.4% for the 6-month EURIBOR, while the coefficient for the LIBOR for the Swiss franc of the same maturity was 17.3%. Compared to the volatility of the exchange rate, the volatility of reference interest rates is considerably higher, an indication of the importance of interest rate risk for loan instalments.

Figure 6: Fluctuations of the 6-month EURIBOR and LIBOR for the Swiss franc (left) and the associated coefficients of variation (right)



Source: Bank of Slovenia calculations, the BuBa, Bloomberg, the BBA

[2] The coefficient of variation, as the standard deviation to mean ratio is calculated on a daily basis in one year moving periods.

Comparison of risks of loans in euros and Swiss francs

A comparison of the risk of loans in euros with the risk of loans in Swiss francs is presented below. Exchange rate and interest rate risks will be the focus of our comparison. Only changes in interest rates affect loans in euros, while fluctuations of both interest rates and exchange rates have an impact on loans in Swiss francs.

• Assumptions

In order to compare the risks of loans, a hypothetical loan (in either euros or Swiss francs) has been selected. The loan is assumed to be a mortgage-backed housing loan. In all cases studied the amount of the loan is EUR 40,000 with a maturity of 10 years. When the loan is raised, data for the last day in April 2007 regarding the Swiss franc exchange rate and the EURIBOR and LIBOR for the Swiss franc are used. The interest rate of the loan was determined based on offers published on the websites of 15 Slovenian commercial banks for loans in euros and Swiss francs. Based on these data, at the end of April, banks were prepared to offer a mortgage-backed housing loan at an average interest rate of 6-month EURIBOR plus 1.9 percentage points for a loan in euros or 6-month LIBOR for Swiss francs plus 2.2 percentage points for a loan in Swiss francs or a loan with a Swiss franc currency clause.

• Comparison of loans, excluding currency and interest rate risks

Assuming there will be no fluctuations of interest rates or exchange rates throughout the entire loan repayment period, the loan instalment in euros is EUR 26 higher compared to a loan in Swiss francs. The sum of all instalments (the amount of full repayment) is EUR 3,073 higher. The full repayment of a loan in euros with regard to the principle is 32.5% higher or 24.8% higher for a loan in Swiss francs.

Table 3: Comparison of a loan in euros and Swiss francs assuming no fluctuations of interest rates or exchange rate throughout the entire loan repayment period – baseline scenario

Amount of loan in euros	40,000	
Number of months	120	
Currency of loan	**EUR**	**CHF**
Reference interest rate	4.14%	2.47%
Mark-up	1.90%	2.20%
Interest rate	6.04%	4.67%
Euro exchange rate in Swiss francs		1.646
Instalment amount in euros	442	416
Total loan amount in euros	52,987	49,915
Interest	32.5%	24.8%
Income required for credit worthiness (in euros)		
33%	1,338	1,260
55%	803	756
Average net salary for March 2007 (in euros)	815	
Ratio of loan instalment to net salary	54.2%	51.0%

Note: The six-month EURIBOR and six-month LIBOR for CHF are taken into account as reference interest rates.
Source: Bank of Slovenia calculations, the BuBa, Bloomberg, the BBA

Due to increased competition, banks have lowered their credit standards, thereby raising the borrowers' credit worthiness. The share of an investment that a bank is prepared to finance is on the rise, and at some banks can reach 100%. With real estate pledged as collateral, banks are prepared to pay a significant portion of a loan to a borrower in cash. Furthermore, the loan to income ratio is also on the rise. Several years ago, banks approved loans only up to an amount where the loan instalment represented one-third of the customer's income.[3] Recently, that ratio can be as high as two-thirds of income. Most banks however have defined the highest acceptable ratio of a loan instalment to a borrower's income as 55%. Banks frequently take into account a borrower's other sources of income, in addition to his/her income.

In addition to the loan instalment, the table above also shows the income of a borrower necessary to achieve a loan to income ratio of 33% and 55%. For a borrower with an average Slovenian net income (EUR 815 for March 2007), the calculated loan instalment in euros represents 54.2% of the monthly income, while the loan instalment in Swiss francs represents 51%. If a bank is prepared to approve a loan up to an amount that does not exceed 55% of the borrower's income, the bank would approve a loan in the maximum amount of EUR 40,606 for a period of 10 years. Under the same conditions, the maximum amount of a loan in Swiss francs would be approximately EUR 2,500 higher (EUR 43,105).

[3] An analysis performed by De Nederlandsche Bank (DNB WP 83) considers a loan to income ratio that surpasses 35% as being risky.

If exchange rates and interests rates are maintained at the same level throughout the loan repayment period, the difference in the amount of the instalment between a loan in euros and a loan in Swiss francs is dependent solely on interest rates. In this case, loans in Swiss francs are more favourable in terms of price due to lower reference interest rates. However the assumption that reference interest rates and exchange rates will remain unchanged over a long period (10 years in the given case) is not very realistic. Therefore the effect of fluctuations of exchanges rates and interest rates on the loan instalment and the entire loan repayment amount are presented below.

- **Comparison of loans, taking into account currency and interest rate risks**

The basis for the methodology presented below is the historical value-at-risk method. All conclusions are therefore based on historical data, assuming that the historical distribution of variables, and correlations between them, represent a fair approximation for the future.

Based on data from banks, reference interest rates for loans are typically repriced every six months and remain unchanged in the interim period. Therefore series of daily data regarding the half-yearly growth rates of reference interest rates and the Swiss franc exchange rate from the beginning of 1991 to the end of April 2007 are taken into account below. For every daily pair of six month reference interest rate and exchange rate growth rates (only growth rate of the interest rate for loans in euros), the amount of the loan instalment after six months is calculated. For the entire distribution of calculated loan instalments, the 95th and 99th percentile have been chosen. Assuming that the remaining distribution of variables and correlations between them will remain unchanged in the future, we can say that there is a 95% probability that a loan instalment will be less than or equal to the value of an instalment at the 95th percentile after six months, or that there is a 5% probability that the instalment will exceed that value after six months. The same is true that a 1% probability exists that an instalment determined with a 99th percentile will be higher when it is redefined after six months.

Table 4: The effect of changes to EURIBOR on a loan in euros and changes to LIBOR for Swiss francs and the euro-Swiss francs exchange rate on a loan in Swiss francs. Scenarios of 5% and 1% probability for historical growth rates since 1991 and since 2001

	Loan in EUR, ref. int. rate 6-month EURIBOR				Loan in CHF, ref. int. rate 6-month LIBOR for CHF			
	Since 1991		Since 2001		Since 1991		Since 2001	
PERCENTILE	95	99	95	99	95	99	95	99
Exchange rate growth					-1.3%	-2.0%	-0.8%	-0.9%
EUR exchange rate in CHF					1.625	1.613	1.633	1.631
Growth of reference interest rate	26.7%	35.1%	25.2%	31.7%	77.7%	135.4%	119.0%	160.9%
Reference interest rate	5.24%	5.58%	5.18%	5.45%	4.39%	5.81%	5.41%	6.44%
Instalment in EUR	461.8	468.1	460.6	465.6	456.2	486.5	473.0	492.9
Diff. from the baseline scenario	20.2	26.6	19.0	24.0	40.2	70.5	57.0	77.0
Total loan amount	55,290	56,016	55,155	55,723	54,534	58,004	56,433	58,712
Diff. from the baseline scenario	2,302	3,029	2,167	2,736	4,618	8,089	6,517	8,797
Interest and exchange rate diff.	38.2%	40.0%	37.9%	39.3%	36.3%	45.0%	41.1%	46.8%

Note: Effects are measured in euros also for loans in Swiss francs.
Source: Bank of Slovenia calculations, the BuBa, Bloomberg, the BBA

In the case of a loan in euros, based on historical data since 1991, there is a 5% probability that in six months the instalment will be more than EUR 20 higher and a 1% probability that the instalment will be more than EUR 26.6 higher. Taking into account a shorter period of historical data (since 2001), the differences are similar, but somewhat smaller. For loans in Swiss francs, the increase of the instalment can be significantly higher. Taking into account data since 1991 and a 5% probability, the loan instalment in Swiss francs is EUR 40.2 higher or two times more compared to the loan in euros. At 1% probability the instalment increases nearly three times as much as in case of a loan in euros (EUR 70.5). The differences are even higher taking into account only data since 2001.

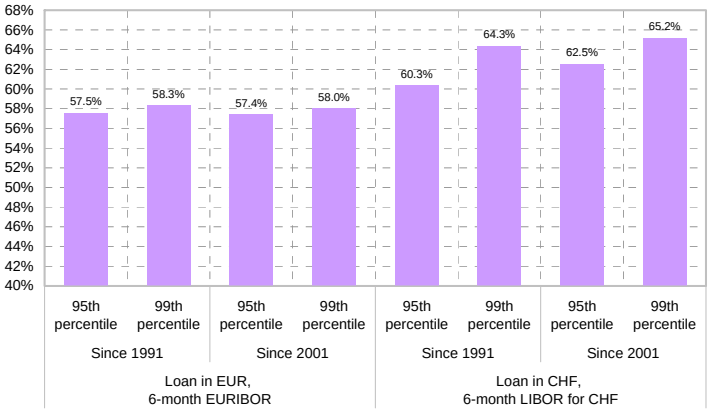
Due to fluctuations of the exchange rates and LIBOR, which is considerably more volatile than EURIBOR, considerably greater changes to the amount of a loan instalment may result for loans in Swiss francs than for loans in euros. At a very low probability, a loan instalment in Swiss francs may exceed the amount of a loan instalment in euros after only six months. Given historical data, only when data since 1991 and a 5% probability are taken in account is the loan instalment in Swiss francs less than an instalment in euros after six months. In all other cases (taking into account a 1% probability or data since 2001 and 1% or 5% probability), an instalment in Swiss francs is higher than an instalment in euros.

To calculate the effect on the entire loan, we assume that after six months the changes described above to the exchange rate and interest rates have occurred. Following these changes, the exchange rate and reference interest rate are assumed to remain the same until the end of the loan period. Under these assumptions and taking into account data since 1991 at the 95th percentile for a loan in the amount of EUR 40,000, the borrower would repay the bank (including interest and exchange rate differences) approximately EUR 55,290 for a loan in euros and EUR 54,534 for a loan in Swiss francs.

Even when taking into account data since 2001, the entire loan repayment amount in euros does not change significantly. In the case of a loan in Swiss francs however, the amount is nearly EUR 2,000 higher, totalling EUR 56,433. Furthermore, the entire loan repayment amount in euros remains at the same level even when taking into account a 1% probability, whereas the loan in Swiss francs, under the same assumption, exceeds EUR 58,000.

Given the high level of sensitivity of a loan in Swiss francs to fluctuations in the exchange rate and reference interest rate, the key question regarding credit worthiness arises. Will a borrower be capable of regularly settling his or her obligations to the bank if these fluctuations in the exchange rate and interest rate actually occur? We assume that the loan instalment represents 55% of the borrower's income and take into account the same scenarios as before. After six months when the interest rate is repriced, the ratio of the loan instalment in euros to the borrower's income, taking into account a 5% probability, could exceed 57%, or 58% taking into account a 1% probability. For a loan in Swiss francs, an individual can borrow up to the same loan amount at a lower income due to lower interest rates. However, every fluctuation of the interest rate or exchange rate encumbers the borrower's income that much more. The ratio of an instalment to a borrower's income for a loan in Swiss francs after six months when the reference interest rate is repriced, taking into account a 5% probability, can exceed 60%. With a 1% probability, the ratio can exceed 64%. Taking into account data since 2001 the ratio can be as high as 65%. If a borrower has taken a loan in the maximum possible amount in Swiss francs and is capable of using 55% of his/her income for repayment of the loan, he/she may be incapable of settling the entire loan instalment in six months in a low probability scenario.

Figure 7: Loan to income ratio following a change to the exchange rate and interest rate under the assumption that this ratio was 55% when the loan was approved



Source: Bank of Slovenia calculations, the BuBa, Bloomberg, the BBA

It is therefore important that a borrower take a loan that he/she is capable of regularly repaying even in the event of fluctuations of the exchange rate and interest rate. If we assume that the borrower's income is equal to an average Slovenian net income (EUR 815 in March 2007) and a 55% loan to income ratio is the maximum that allows the borrower to regularly settle the loan instalment, the latter should not exceed EUR 448, even in the event of unfavourable fluctuations in interest rates and the exchange rate. In order for the borrower to be able to settle his or her obligations with 99% probability, given the historical growth rates of the exchange rate and interest rates, the borrower would be able to borrow EUR 38,300 for a loan in euros or EUR 36,375 for a loan in Swiss francs instead of EUR 40,000.

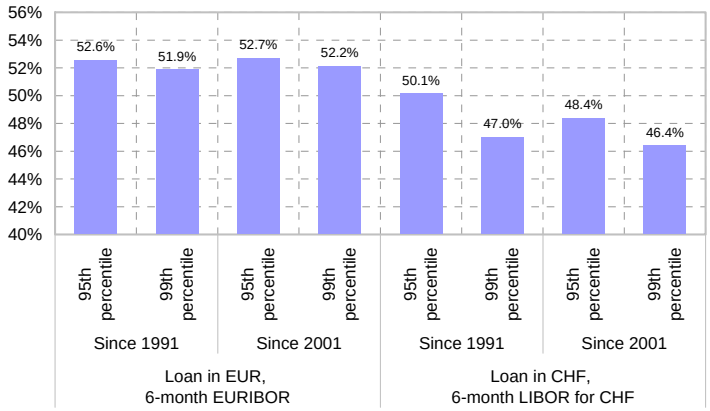
Table 5: Principle and loan instalment amounts at approval under the condition that, even following fluctuations of EURIBOR or LIBOR for the Swiss franc and changes to the exchange rate, the loan to income ratio does not exceed 55%

	Loan in EUR, ref. int. rate 6-month EURIBOR				Loan in CHF, ref. int. rate 6-month LIBOR for CHF			
	Since 1991		Since 2001		Since 1991		Since 2001	
PERCENTILE	95	99	95	99	95	99	95	99
Instalment in EUR following change	448.3							
Principle in EUR at approval	38,830	38,301	38,930	38,513	39,304	36,858	37,911	36,375
Instalment in EUR at approval	428.6	422.8	429.7	425.1	408.7	383.3	394.2	378.3

Source: Bank of Slovenia calculations, the BuBa, Bloomberg, the BBA

Under the assumption that the loan to income ratio following changes to the exchange rate and reference interest rates will not exceed the 55% limit with 99% probability, the loan to income ratio when the loan is approved would be approximately 52% for a loan in euros and around 47% for a loan in Swiss francs.

Figure 8: Loan to income ratio upon loan approval under the condition that the ratio is 55% following changes to the exchange rate and reference interest rates.



Source: Bank of Slovenia calculations, the BuBa, Bloomberg, the BBA

Loans in Swiss francs are attractive for borrowers primarily due to the low reference interest rates as they make possible a higher loan amount or a lower instalment than a loan in euros. Currency and interest rate risks are however often not taken into account. Considering possible exchange rate and interest rate fluctuations, the loan instalment in Swiss francs could exceed the loan instalment in euros after only six months (following the repricing of the reference interest rate). If a borrower is indebted to the maximum instalment amount with regard to income at the time of approval, in six months the loan to income ratio for loans in Swiss francs could increase to the point where the borrower is no longer capable of regularly settling his/her obligations.

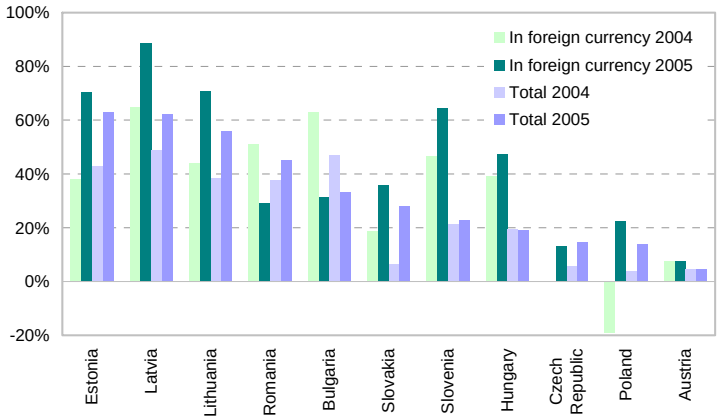
Based on the results of simulations, we can conclude that it makes sense for a borrower to take out (or a bank to approve) a loan up to an amount for which the borrower has the credit capacity for an equal loan in euros (i.e. in the same amount and under the same conditions as for loans in euros). Two reasons give weight to this type of decision. First, as evident from a comparison of simulations, in just six months, the ratio of the loan instalment in euros to the loan instalment in Swiss francs can change completely, even to the point where a loan in euros becomes more favourable. Second, sufficient credit capacity for a loan in the same amount in euros ensures that the borrower will be able to repay the existing loan with a new loan in euros in the event of unfavourable fluctuations in the exchange rate or interest rate. A loan in euros would be naturally hedged as the borrower would have income in the same currency as the loan and would not be exposed to exchange rate risk. A loan in euros is also less exposed to interest rate risk given that the EURIBOR is less volatile compared to the LIBOR for Swiss francs.

Experiences of other countries with foreign currency loans

At the initiative of the Austrian Central Bank, an informal group of representatives of the central banks of 11 countries (FCL11[4]) was formed at the end of 2005. The group analysed conditions regarding foreign currency loans. Austria, in particular, is faced with high shares of loans in Swiss francs. The strong presence of Austrian banks in the countries of Central and Eastern Europe was one of the reasons for the expansion of these types of loans in these areas. This is all the more true since most new EU Member States have achieved a high level of growth in loans to the non-banking sector in recent years. In 2005 in FCL11 countries (with the exception of Hungary, the Czech Republic, Poland and Austria), the growth of loans to companies and households has been at least 20%. In the three Baltic countries, this growth has exceeded 55%.

[4] Austria, Bulgaria, Czech Republic, Estonia, Latvia, Lithuania, Hungary, Poland, Romania, Slovakia and Slovenia.

Figure 9: Year-on-year growth of loans to households and companies



Source: Data from the central banks of FCL11 countries

In most countries, with the exception of Bulgaria, Romania and the Czech Republic, the growth of foreign currency loans was higher than the growth of total loans to companies and households. The highest growth of foreign currency loans in 2005 was recorded in Latvia (89%).

The most significant factor contributing to the rapid growth of foreign currency loans is the difference between interest rates for loans in domestic and foreign currencies. However the interest rate spread, though neccessary, is not a sufficient condition, as evidenced by the considerable difference in the share of foreign currency loans amongst countries with similar interest rate spreads.

The stability of exchange rates also plays an important role in the increase of the share of foreign currency loans. This share is higher in countries with a fixed exchange rate regime or low exchange rate volatility. In countries with higher exchange rate volatility, foreign currency borrowing can be stimulated by expected appreciation of the domestic currency. The approaching date of the euro adoption also has an impact on the increasing share of foreign currency loans.

The great openness of the economies of FCL11 countries should also be mentioned. This is not only important with regard to the external flow of goods, but also with regard to financial flows. In most countries the direct borrowing of companies abroad still has significant meaning. However, the decreasing of interest rates has led to substitution with domestic borrowing, leading to the high growth of loans in some countries. The needs of banks for financial sources are growing with the high lending growth rates. Because the growth of non-banking sector deposits legs far behind with the growth of loans, banks are increasingly borrowing abroad. Sources of funds in foreign currency could be the motive for banks to stimulate foreign currency loans as opposed to domestic currency loans. However, banks can exchange liquidity in foreign and domestic currencies at a relatively low price at the central bank.

Some countries have found that the rapid growth of foreign currency loans is caused by a lack of risk awareness. Foreign owned banks, which are frequently the first to offer more innovative products and services, also play an important role in the respect of rapid growth in foreign currency loans. Favourable sources of financing, which can be obtained from parent banks, make it possible to offer favourable price conditions. Foreign banks are primarily present through branch offices and subsidiaries. Due to large exposure limits, parent banks approve larger loans and frequently participate in the granting of syndicated loans.

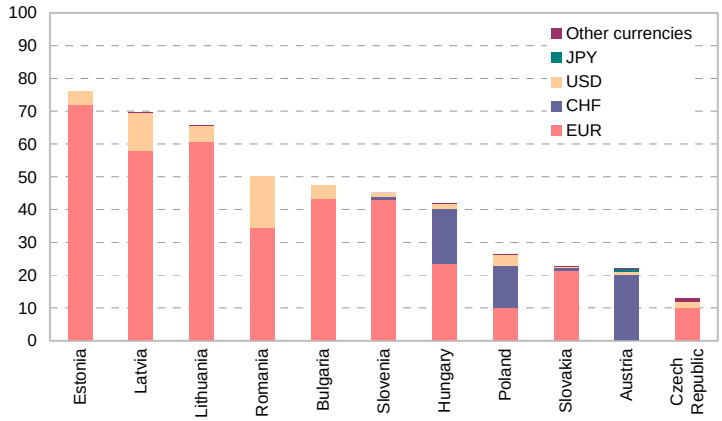
In several new EU Member States, Austrian banks have played a significant role in the growth of foreign currency loans, particularly loans in Swiss francs. Austrian banks began offering loans in Swiss francs in the western part of the country where many individuals are employed in Switzerland and therefore receive their income in Swiss francs. From there, these types of loans spread throughout Austria due to favourable interest rates, leading to the herd behaviour of borrowers in other parts of the country who do not have natural hedging in the currency of income and are therefore exposed to exchange rate risk (Epstein, Taznninis, 2005, p. 7). Foreign currency loans in Austria (primarily to households) are generally bullet loans. Approximately three-quarters of foreign currency loans to households have a repayment vehicle ranging from conservative life insurance with a guaranteed minimum return to risky investments in foreign shares. In this respect banks may not always be well informed with regard to the value of the repayment vehicle. The strong presence of Austrian banks in new EU Member States has led to the expansion of these types of loans to these areas.

Countries of the FCL11 group can be classified into three groups with regard to conditions in the area of foreign currency loans.

The **first group** includes the Baltic countries, Romania and Bulgaria. These countries have very high shares of foreign currency loans (76% in Estonia in 2005). Most loans however are in euros. Their exchange rate regimes (with the

exception of Romania) are a currency board or fixed exchange rate regime linked to the euro. In most of these countries, the high growth of aggregate loans is more problematic than the high share of foreign currency loans.

Figure 10: Foreign currency loans by individual currencies as a share of total loans to households and companies



Source: Data from the central banks of FCL11 countries

In countries of the **second group** (Hungary, Poland and Austria), the share of foreign currency loans is lower. These countries however have the highest shares of loans in currencies other than the euro, particularly in Swiss francs.

The **third group** includes the Czech Republic and Slovakia, which have very few foreign currency loans.

Prior to the introduction of the euro, Slovenia was included in the first group with a high share of foreign currency loans, mainly in euros. Following the introduction of the euro, Slovenia can be classified in the second group, with a small share of foreign currency loans, but with a growing share of loans in Swiss francs.

With regard to loan maturities, there is no significant difference between loans in domestic and foreign currency. When differences do exist, the maturity of foreign currency loans is typically longer than the maturity of loans in the domestic currency. Foreign currency loans in almost all countries are, to a great extent variable interest rate instalment loans. Only in Austria are foreign currency loans primarily bullet loans. Foreign currency loans with repayment vehicle are very common in Austria. These types of loans also appear in Slovenia, Hungary and Estonia.

Most loans to households are not hedged against exchange rate risk. In some countries, a borrower can change the currency of a loan (pursuant to the relevant loan agreement) in the event of unfavourable exchange rate fluctuations. However, a uniform practice in this area does not exist. Companies are better protected against exchange rate risk than households. In particular, exporters typically have a natural hedge as at least a portion of their income is in the same currencies as their loans. Larger companies also use derivatives for hedging.

In some countries, it is possible for banks, under certain conditions (i.e. if an exchange rate or the loan to value ratio reaches a predetermined level); to change a foreign currency loan to a domestic currency loan. Banks can limit their exposure to credit risk and indirectly to exchange rate risk arising from foreign currency loans by using higher risk premiums, with better collateral and by applying stricter standards for approving foreign currency loans, in general. In most countries this does not occur. On the contrary, the standards for approving foreign currency loans in some countries are lower than those for domestic currency loans due to strong competition.

In individual countries, supervisory institutions and central banks have responded to the high share of foreign currency loans and the high level of aggregate loan growth to the non-banking sector. Minimum standards for approving foreign currency loans have been adopted in Poland and Austria. In some countries, supervision measures have been implemented, requirements regarding the data disclosure of banks have been supplemented, communication with supervisors of other countries has been improved and more attention has been given to communication with the general public and to increasing the awareness of risks associated with foreign currency loans. Primarily the Baltic countries, Romania and Bulgaria have adopted somewhat stricter measures for slowing the growth of foreign currency loans and aggregate loans to the non-banking sector. Measures implemented by individual countries have included limiting the growth of loans, stricter requirements with regard to minimum reserves and changes to tax legislation. Measures regarding credit ratings were also implemented as were higher capital requirements, particularly for housing loans, and stricter requirements regarding the creation of provisions and the credit classification.

These countries have covered the entire range of measures, which can be divided into six groups: improved understanding of risks, improved supervision, credit rating measures, market development, macroeconomic measures

(monetary, fiscal and exchange rate policy), and administrative measures.[5] Due to the ever increasing integration of the financial sectors of individual countries, the effectiveness of these types of measures is limited because, for the most part, these measures have no impact on the sources of financing of banks, particularly on borrowing from parent banks. Furthermore, measures that are too narrow or too strict can lead to arbitration of regulations and to direct borrowing at banks abroad or at less regulated financial intermediaries of the banking group such as leasing companies.

Conclusion

Recently, many Central and Eastern European countries have experienced high growth of loans to the non-banking sector and of foreign currency loans in particular, the latter driven primarily due by low reference interest rates. In Slovenia, the significance of loans in Swiss francs is on the rise, particularly in the area of housing loans to households.

Direct exposure of banks to foreign exchange and interest rate risks from loans in Swiss francs is relatively low, since their foreign exchange position in Swiss francs is generally closed and also because the share of interest-rate sensitive asset and liability items linked to the LIBOR for the Swiss franc is very evenly matched. The indirect risk of banks is higher as banks would be exposed to higher credit risk due to problems encountered by borrowers when settling their obligations to banks in the event of unfavourable fluctuations of the Swiss franc exchange rate and interest rates. Nevertheless, households bear the greater burden of higher interest rates and the appreciation of the Swiss franc.

A decision regarding a housing loan is long-term and typically covers a substantial portion of individual's active life span. It therefore requires careful consideration and knowledge of a bank's offer and the risks assumed in this regard. New bank products can be very attractive. An individual however must be aware of and sufficiently hedge against the related risks. It is important that a borrower's income be in the same currency as a loan to avoid exposure to exchange rate risk, or that an individual only borrow up to an amount that enables him/her to repay an existing loan with a new loan in the same currency as his/her income in the event of unfavourable fluctuations in financial markets. A low interest rate at the time of approval does not guarantee that the interest rate will remain at the same level throughout the entire loan period. Changes to foreign exchange rates also affect the amount of a loan instalment. New banking products are becoming more complex. Banks must therefore ensure that their customers are well-informed of both the offer and associated risks, particularly in the case of housing loans. The increased volume of operations and the growth of market share should not be the only measures of the success of banks' operations. Prudence when making business decisions is very important as the fact remains that most bad loans arise in periods of high growth of loans and favourable economic conditions.

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- BBA: website of the British Bankers' Association http://www.bba.org.uk/bba/jsp/polopoly.jsp?d=103

[5] Hilbers et al., IMF WP/05/151

STRUCTURE OF SLOVENIAN FINANCIAL ASSETS

Ana Gorišek

SUMMARY

In Slovenia, institutional investors, in particular life insurance companies and pension and investment funds are becoming increasingly important in the structure of financial assets. Their importance is growing with public awareness of the ageing of the population and the associated supplemental savings required to maintain a specific standard of living following retirement. This is not only a Slovenian phenomenon: the desire for increased savings of the national economy is present in the wider European area. Institutional investors in Western Europe and in Anglo-Saxon countries are more recognisable: their operations have a longer history and they are therefore more experienced and their roles more clearly defined. In Slovenia we can expect that long-term savings in the form of life and pension insurance will gain significance. They therefore need to be more clearly and simply defined.

The main purpose of this article is to outline the existing structure and development trend of financial assets of individual economic sectors, including households, companies and financial institutions with an emphasis on the savings and role of institutional investors. The desired and required measures to stimulate savings can only be formed based on precise knowledge of current conditions and trends. The article presents a basic analysis of the balance of disposable financial assets and liabilities in the financial accounts of Slovenia, prepared by the Bank of Slovenia's statistical department.[1]

[1] Bank of Slovenia's web page, where financial accounts for Slovenia are available: http://www.bsi.si/publikacije-in-raziskave.asp?MapaId=922

1 Introduction

The financial accounts represent an invaluable source of information on the financial assets of the economy in terms of a cross-sector review of financial sources (assets) and liabilities with regard to stocks, transactions and revaluation changes. The financial accounts for Slovenia are available since 2001 on a quarterly basis. They are compiled according to the ESA95 methodology (the European version of SNA93) and therefore provide broad international comparability. The article presents a comparison of Slovenia with the euro area, and in certain parts with Portugal, the country whose development in terms of GDP is closest to Slovenia.

The financial accounts took on additional meaning after Statistical Office of the Republic of Slovenia (SORS) in the middle of 2007 published the remaining part of national sector accounts (current and capital accounts) for years 2000 to 2005. In 2006, Eurostat and the ECB published the annual sector accounts for the euro area, the EU25 and individual Member States for the first time.[2] European sector accounts were prepared by Eurostat and the ECB in close cooperation with the national statistical offices and central banks of Member States.

Sector accounts show the main macroeconomic aggregates by sectors such as gross value-added, gross disposable income, savings and net lending and borrowing. They also show the value of goods and service produced by a specific sector, how income was earned, whether it was spent or saved, how lending needs were met and which financial assets were obtained. Detailed methodological explanations of individual items of the national accounts are accessible on the websites of the United Nations and SORS.[3]

For the moment in Slovenia considerable deviations exist between financial accounts and the remaining part of sector accounts. These deviations are most notable through the aggregate net lending/net borrowing (item B9 in the national accounts), which represents the balancing item of the non-financial part of sector accounts (capital account) and the transaction part of the financial account. The reconciliation of this item during the compilation of the financial and capital accounts is one of the most demanding parts of preparing national sector accounts. Given the wide gap in this item between the two accounts, continued reconciliation between the Bank of Slovenia (financial account) and SORS (capital accounts) is necessary.

Below follows a chapter with a brief summary of the theoretical role of the financial sector in the economy. The financial sector is most important in terms of intermediation between surplus and deficit economic sectors and plays a significant role in the formation of the financial asset structure and the stimulation of savings. The latest behavioural trends of institutional investors in the international environment and related risks are also summarised. In the third chapter, more attention is given to the domestic economy, with an emphasis on the financial condition of the household sector. This is followed by chapters four and five with a presentation of the financial position of Slovenian non-financial and financial corporations. The last chapter includes a review of the financial assets of the total Slovenian economy and its relation to the rest of the world, which is becoming increasingly important.

2 Significance of the financial sector and current behavioural trends of institutional investors

Let us examine a simplified theoretical allocation between financial and real assets and their interrelations. The assets of a particular economy are represented by real assets. Counter-financial assets are represented solely by claims from real assets and claims from revenues generated by real assets. Financial assets enable the separation of ownership from the management of a company and stimulate the transfer of assets to companies with attractive investment opportunities. Income generated based on real assets is reallocated amongst investors based on their share of ownership in a company's issued securities. Financial assets therefore indirectly contribute to the productive capacities of the economy. In simple terms: an individual decides on the allocation of current income and chooses to spend or invest. In that case the individual may decide to invest in financial assets. A company that receives assets (directly or indirectly through institutional investors) invests in real assets, and the income generated thereby represents the return on financial assets or the investor's return (Bodie et al., 2005).

[2] Website of SORS where the non-financial sector accounts of Slovenia are available: http://www.stat.si/novica_prikazi.aspx?ID=981
Website of the ECB where the sector accounts of the euro area are available:
http://www.ecb.int/press/pr/date/2006/html/pr060531.en.html
Website of EUROSTAT where the sector accounts for EU Member States are available:
http://epp.eurostat.cec.eu.int/portal/page?_pageid=1090,30070682,1090_30298591&_dad=portal&_schema=PORTAL

[3] Methodological explanations of national accounts:
SNA 93: http://unstats.un.org/unsd/sna1993/toctop.asp
SORS, European system of national and regional accounts: http://www.stat.si/pub_esr1995.asp
Mojca Škrlec Šinkovec: Non-financial sector accounts. Statistics Days 2006, Radenci. SORS

The difference between real assets and financial assets can be seen in the balance sheet. While real assets are found only on the assets side of the balance sheet, financial assets are found on the both the asset and liability sides. Claims from a company are assets. At the same time however, the issue of these claims by a company represents a liability. When aggregating all balance sheets, financial assets are neutralised and only the sum of real assets, as net assets of the aggregated economy, remain (Bodie et al., 2005).

In terms of savings, households are generally the most important sector in the economy. In terms of investment, the corporate sector is most important. In order for the economy to function efficiently, the efficient transfer of assets from households to companies is necessary. This requires a well-functioning financial system. The value of assets under management by institutional investors in more developed economies is rapidly catching up with the assets of the banking sector. The role of institutional investors is important for deepening and stimulating financial markets, and for the efficient allocation of savings. They also play an ever increasing role in dealing with declining levels of household savings associated with the ageing of the population (BIS CGFG Papers, 2007).

A working group at the Bank for International Settlements and Development in Basel, "Committee on the Global Financial System (CGFS)" in its report on institutional investors, global savings and asset allocation (BIS CGFS Papers, 2007) presents some of the latest trends in global financial systems that are also important for the Slovenian financial system:

(1) Regulatory and accounting changes are aimed at increasing the functionality and stability of financial systems and the effective allocation of financial assets. In the European Union, the introduction of International Financial Reporting Standards (IFRS) and the Solvency II project standout. The Solvency II project introduces new rules for the valuation of technical reserves and so called "risk-based" capital requirements for insurance companies. The project is scheduled to be adopted in 2007 and implemented in 2010. More and more countries are opting for changes in the legal framework of second pillar pension insurance. Given the comprehensive reforms at financial institutions, it is necessary to improve the information and analytical framework for assessing problems that could endanger financial stability. While these reforms will enhance long-term financial stability, their implementation may temporarily distort prices in financial markets. It is recommended that various studies be carried out to assess the effects resulting from reforms prior to their final introduction.

(2) The demand of global institutional investors for assets of developing economies is on the rise. This has a positive effect on the latter through the increased depth and liquidity of their financial markets. This however means that long-term bonds' yields of developing economies become more dependent on global factors.

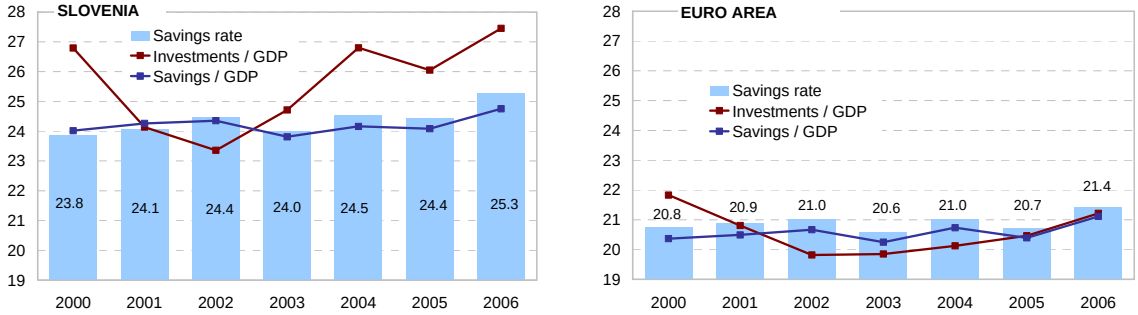
(3) Alternative investment strategies of institutional investors have become increasingly popular (hedge funds, commodities, real estate, assets of developing markets, private equity, etc.), with a desire for higher returns and greater asset diversification. Given the still limited share of alternative investments of total assets, alternative investment policies have not yet had a negative impact on financial stability.

(4) With the development of financial systems, linked to new and harder to predict risks, institutional investors are increasingly transferring risks to the household sector. In this regard life insurance with investment risk (which share of total life insurance in Slovenia is increasing) and defined contribution (DC) pension plans which are replacing defined benefit (DB) pension plans stand out. Tendency for reversing trends in second pillar pension insurance have also been seen in Slovenia. Households are assuming more and more risk on the liability side as well, with variable interest rate and foreign currency loans and so called "bullet" loans. The question arises with regard to the ability of households, compared to institutional investors, to recognise and manage investments risks, particularly when confronted with the volatility of financial markets. Should it be shown that households are not adequately qualified to manage risks, and if they do not earmark enough savings for retirement, their future (pension) income could be severely limited.

3 Financial condition of the household sector with an emphasis on savings

Domestic or foreign savings through investment paves the way for economic development. If domestic savings is lower than investments needs, net foreign borrowing is necessary. In Slovenia, the share of savings in GDP is lower than the share of investments in recent years as reflected in an increasing financial account deficit. Increased foreign borrowing means increased vulnerability of the domestic economy in relation to the rest of the world, particularly in terms of currency and interest rate risk. By contrast, Slovenian investors invest an increasing amount in foreign securities, stimulated by greater dispersion of risk and low depth and the liquidity of the domestic capital market. In the case of more expensive foreign financing compared to the yield our investors receive abroad, taking into account associated risks, this could mean decreased effectiveness in the allocation of domestic assets.

Figure 1: Savings rate and shares of investments and savings as a percentage of GDP for the Slovenian economy (left) and the euro area (right).

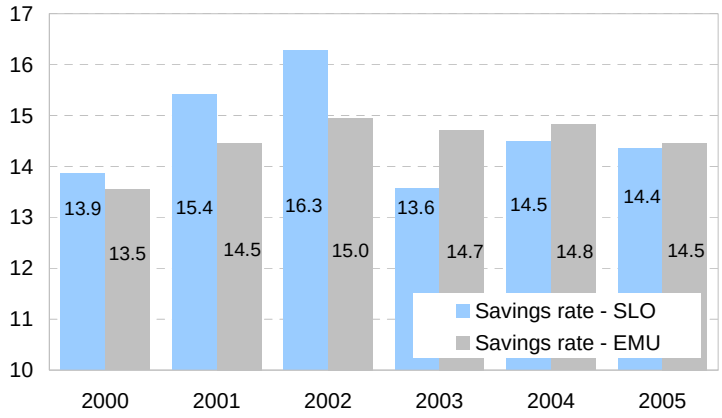


Source: SORS, Eurostat – sector accounts

In 2006 the Slovenian economy achieved a considerably higher savings rate (25%), measured as the share of gross saving in gross disposable income,[4] than the euro area (21%). The reasons are a lower rate of euro area government sector savings and the fact that the development of the Slovenian economy is still catching up with the development of the euro area economy.

Although the savings rate for the total Slovenian economy is higher than that of the euro area, the Slovenian household sector, as the most important surplus sector, with 14.4% at the and of 2005, recorded nearly the average savings rate of the euro area.[5] The period from 2000 to 2002 was characterised by growth of the savings rate for the Slovenian and euro area households, while Slovenian households' savings rate was higher than the euro area average. In 2003 the Slovenian households' savings rate declined below the euro area average, however in 2004 increased and almost reached it. The declining savings rate in the euro area at the end of the 1990s was driven by an increase of taxes and social security contributions and financial and non-financial assets resulting from favourable conditions in capital and real estate markets which led to increased household spending. The shift to a higher level of savings after 2000 is partly the result of financial uncertainty in a number of euro area countries linked to the unsustainability of existing social security systems (Hertkon et al., 2007).

Figure 2: Savings rate of Slovenian and euro area households (in %)



Source: SORS, Eurostat – sector accounts

The savings rate of Slovenian households could be influenced by the ageing of the population, which is the result of longer life expectancy and a drop in the birth rate. Ratio of the average pension to the average salary has fallen in recent years from 0.66 to 0.63.[6] Pension reform began late (in 2000) and is not yet complete. Substantial changes are to follow

[4] The savings rate is an indicator calculated from sector accounts. It represents the share of gross savings in gross disposable income. In addition to compensation of employees and social benefits, it also includes gross operating surplus, other current transfers such as non-life insurance claims, property income such as interest, distributed income of corporations, etc. It does not however include revaluation changes such as capital gains (Škrlec Šinkovec, 2006). For the definition of gross savings and gross disposable income see the attached appendix.

[5] Non-profit institutions serving households (institutional sector S.15) are, in this case, also included to households.

[6] This ratio is still substantially higher than in euro area countries. In more developed countries of Western Europe such as Switzerland, the Netherlands and the United Kingdom, the social pension based on a pay-as-you-go system and pensions from first pillar pension insurance represent a significantly lower share of net salary. The aforementioned countries have substantially lower contributions as the population saves a larger portion of retirement funds through the second pension pillar. In Switzerland for example, the pension received from the first pension pillar represents only 40% of the entire pensions (AHV-Statistics 2006). In Slovenia, the first pension pillar still represents nearly the entire pension.

in the second pension pillar that are of greater importance for stimulating individual old-age savings. A comparison with the euro area shows that increased effectiveness and recognition amongst the population is necessary for individual pension insurance in Slovenia. It is essential that possible change to the second pillar be comprehensively addressed together with the first and third pillars with clear demarcations and a clear definition of those parties assuming risks.

The savings rate is also influenced by the wealth effect via movements in capital and real estate markets. If the wealth of households rises as the result of growth on capital and real estate markets, households are prepared to spend more due to a feeling of security with regard to their wealth. The yields on the Slovenian capital and real estate markets were exemplary in 2003 and 2004. The savings rate of Slovenian households fell compared to 2002 when the rate was quite high (16.3%). The high savings rate in 2002 may have been the result of a slowdown in the growth of real estate prices. A high share of home ownership is characteristic for Slovenian households. At that time, the annual growth of the price for a two-room apartment in Ljubljana was negative (-2.6%). The annual growth rate of the SBI 20 index was 55%. This however, given the relatively moderate equity culture in Slovenia, did not have a significant impact on spending in 2002.

Households invest their savings in financial and non-financial assets. The latter is primarily represented by real estate purchases and investments of sole traders, who finance activities also by raising debt. The raising of new loans is included in transactions from financial liabilities in the financial accounts. Through their decision making with regard to savings, real investments and financing via debt, households set aside a portion of their income for a later period, enabling them to spend normally throughout their entire lifetime. Transactions from financial liabilities fell from 3% to 2.5% of gross disposable income in the period 2002 to 2004 due to decreased household borrowing. Since 2004 household borrowing has increased substantially. With the increase of financial liabilities, the ratio of transactions from liabilities to gross disposable income of households increased to 6% in 2005.[7] From 1999 to 2002, euro area households also recorded a decrease in the aforementioned ratio. In subsequent years this ratio has risen, reaching approximately 5% in 2004 (Hertkon et al., 2007).

From 2002 to 2005 Slovenian households achieved an average share of 8.7% of gross (real) investments in disposable income, while euro area households achieved 9.7%. Especially in the last two years when interest rates were low and the growth of real estate prices high an increase in the aforementioned share happened in both economies. From 2002 to 2005, total investments of Slovenian households reached 22% of gross disposable income, on average, dominated by financial investments (13.5%).

3.1 Financial assets of households

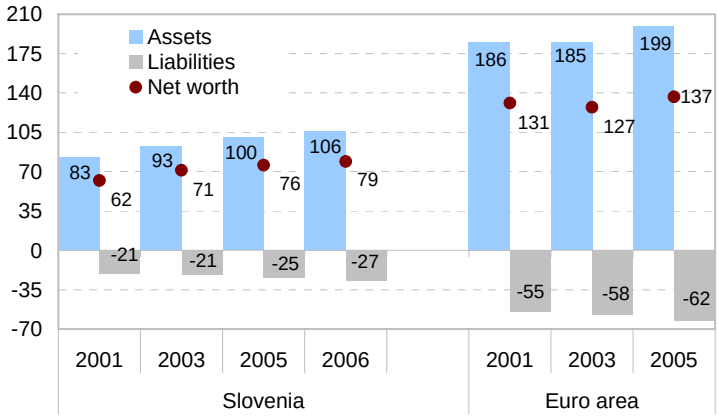
Financial assets of Slovenian households at the end of 2006 were estimated at 106% of GDP (EUR 31.5 billion). Growth of financial assets of nearly 90% has been achieved in the last five years. More than 70% of the growth is the result of transactions or current savings,[8] while the remaining 30% relates to revaluation changes, including capital gains.[9] Despite the high growth, this share is substantially lower than the 200% of GDP of euro area household financial assets.[10] The process of catching up in the accumulation of financial assets of households is necessary and also to be expected due to financial deepening and catching up to the level of household development of the euro area and also due to the aforementioned growing financial uncertainty following retirement.

The most significant reasons for the lower volume of financial assets of Slovenian households are:
(1) With 56% of GDP per capita of the euro area, the Slovenian economy is a great deal less developed.[11] On average, the Slovenian population receives only 46% of the average monthly euro area gross salary.[12] The Slovenian population saves less due to lower income, taking into account the lower standard of living in Slovenia compared to euro area.
(2) A high share of social contributions (22.1% of gross salary) is characteristic for Slovenia (pension and disability insurance and health insurance represent 15.5% and 6.36% of gross salary, respectively).[13] The high share of social contributions means less current income remains for savings.
(3) A high share of wealth in real estate (resulting also from the privatisation of housing in 1991) is also characteristic of Slovenia.[14] According to census data from 2002, approximately 82% of the population lives in housing which they own outright or are co-owners thereof. Only with the mass appraisal of real estate will it be possible to determine the share of real estate in the total assets of Slovenian households.

[7] Data from the non-financial sector accounts are only available for the period 2000 to 2005, while transactions of the financial accounts for the period 2002 to 2006.
[8] A certain portion of interest and dividends received are reinvested, the value of which can not be precisely defined. A portion also relates to the transfer from real to financial assets.
[9] The leading Slovenian stock exchange index (SBI 20) has risen nearly 200% from the end of 2001 to 2006.
[10] The financial assets of Portuguese households have achieved 210% of GDP.
[11] Data for 2006; source: Eurostat.
[12] Data for 2002; source: Eurostat.
[13] In addition, employers pay a further 16.1% of gross salary for social contributions (for pension and disability insurance and health insurance, 8.85% and 6.56% of gross salary, respectively).
[14] Housing Act from 1991 (Official Gazette of the Republic of Slovenia, No. 18-652/1991).

(4) Accelerated development of institutional investors (life insurance companies and pension and investment funds), which are crucial for long-term savings, has only recently begun.

Figure 3: Net financial assets of Slovenian and euro area households as a percentage of GDP



Source: Bank of Slovenia, Eurostat – financial accounts, SORS

The structure of financial assets of Slovenian households is substantially different than that of euro area households. Amongst the three main forms of savings (investments with institutional investors, bank deposits and direct investments in securities), bank deposits are still predominant, accounting for 38% of financial assets at the end of 2006. In recent years, the structure of financial assets of Slovenia households is approaching the structure of euro area households. The share of deposits has fallen by 10 percentage points in five years, but remains approximately 7 percentage points higher than the euro area. By contrast the share of institutional investors (insurance companies and pension and investments funds) has risen by 7 percentage points to 17% of the financial assets of households. However, the share of Slovenian households' assets under management by institutional investors is still 23 percentage points lower than the euro area due to the predominance of "pay-as-you-go" pension schemes. In the euro area, insurance companies and pension funds are significantly more important than investments funds amongst institutional investors.

Table 2: Structure of the financial assets of Slovenian and euro area households

(in %)	1995	2001	2005	2006
Slovenia				
Deposits		48	40	38
Insurance technical reserves		6	8	9
Investments funds		4	7	8
Shares and bonds		28	26	27
Other		15	19	19
Euro area				
Deposits	41		31	
Insurance technical reserves	23		29	
Investments funds	8		11	
Shares and bonds	27		27	
Other	2		2	

Note: The euro area, in this case, only includes Belgium, France, Germany, Italy, the Netherlands and Spain.
Source: Bank of Slovenia; BIS CGFS Papers, 2007, p. 37

Comparison with the total euro area is only possible by the main instruments of financial accounts due to the limited availability of data.[15] The findings are as follows:

(1) There is clear trend of withdrawal from bank deposits to alternative forms of financing. The reasons are a greater recognition of institutional investors, lower interest rates and the convergence of the Slovenian economy with the euro area. The share of cash and deposits in the structure of assets of Slovenian households is still high (48%) compared to the euro area (32%) and Portugal (38%). The share of deposits in the financial assets of euro area households is relatively stable. In 2002, that share rose to 34% primarily as the result of a spike in interest rates during the year (6-month EURIBOR reached a level of 3.7%) and a bearish trend in capital markets (the DAX lost 40% of its value in 2002).

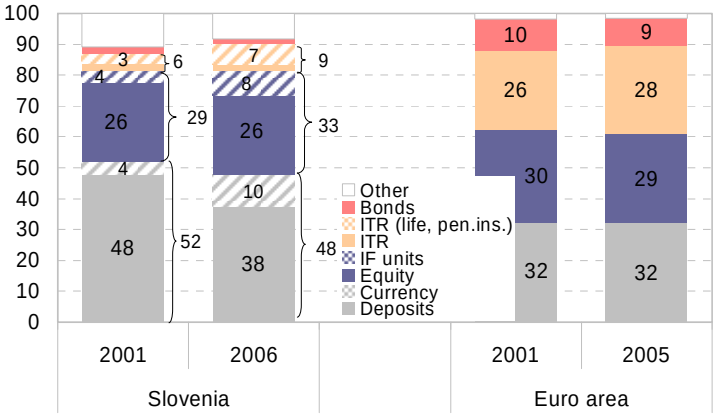
[15] Main instruments of financial accounts: F.1 – Monetary gold and SDR (special drawing rights); F.2 – Currency and deposits; F.3 – Securities other than shares; F.4 – Loans; F.5 Shares and other equity; F.6 – Insurance technical reserves; F.7 – Other accounts receivable.

(2) Slovenian households hold a substantially lower share of financial assets in the form of insurance technical reserves (8.7%), including reserves for life and pension insurance, compared to the euro area (28.3%) and Portugal (19%). The reason is the higher share of bank deposits. Given the long-term unsustainability of the existing pay-as-you-go pension system and expected changes, the share of life and pension insurance is expected to grow.

(3) The share of Slovenian household financial assets directly invested in equity[16] and bonds (35%) is comparable to the euro area (38%). In Slovenia, household investments in equity are the result of the method of privatisation of companies. There is a large difference between the two economies with regard to the ratio of investments in equity and bonds. With 9% of financial assets in bonds, euro area households have a significantly higher share than Slovenian households' share of less than 2% (10% in Portugal). The reasons are the aforementioned method of privatising companies and the strong tendency of Slovenian households to take risks when selecting investments as alternatives to bank deposits. This is also reflected in the small amount of interest shown for bond and money market mutual funds, which given the assets under management, achieve a significantly higher share in Europe compared to Slovenia.

The share of assets of Slovenian households in equity has risen approximately four percentage points in the last five years. This growth is primarily driven by increased interest in mutual funds and capital gains, as the increase to 70% is the result of revaluation changes. Since 2002 the share of financial assets in equity in the euro area is also on the rise, primarily due to decreasing share of bonds. The reference interest rate of the ECB fell to 3.75% in 2002, and continued to slide to 2% in 2005. The positive growth of European stock markets also contributed to the increased share of equity. The representative stock market for Western Europe, the DJ Eurostox, gained 60% from 2002 to 2005. Given recent interest rate levels, a turnaround is possible in the future. This however depends on developments in capital markets.

Figure 4: Structure of the financial assets of Slovenian and euro area households (in %)



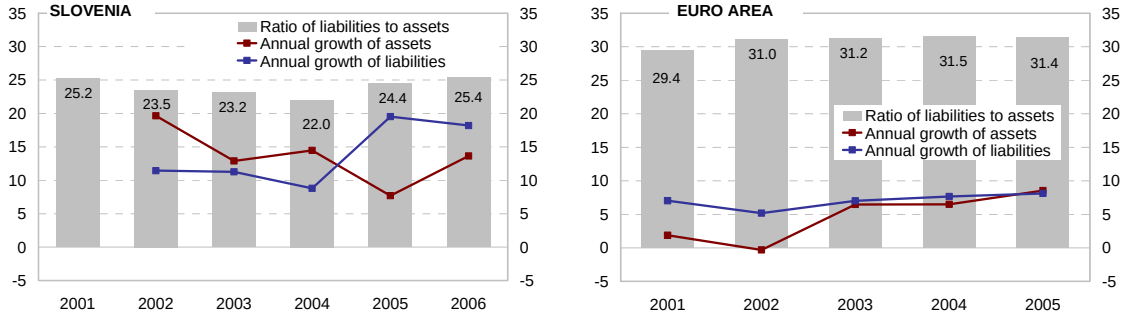
Note: ITR – insurance technical reserves, IF – investment funds
Source: Bank of Slovenia, Eurostat – financial accounts

3.2 Financial position and financial liabilities of households

The movement of financial liabilities has a significant impact on financial assets. Similar to assets, the financial liabilities of Slovenian households have increased by more than 90% in the last five year, reaching 27% of GDP (EUR 8 billion). The 31% growth of financial liabilities of euro area households in the last five years (until 2005) is lower than Slovenia, but still higher than the 23% growth of financial assets in the euro area. The reason for the higher growth in Slovenia is the substantially greater financial depth of the euro area. The net financial position of Slovenian households (the difference between financial assets and liabilities), which shows funds available for net lending, of 80% of GDP is considerably lower than the net financial position or euro area households (137% of GDP).

[16] The financial accounts item F.5 Shares and other equity includes all shares (quoted and unquoted), investment funds units/shares and other equity such as other forms of economic ownership (limited companies, unlimited companies, etc.), excluding public limited companies. When applying the concept of equity, all three forms of equity (or the total item F.5) are included.

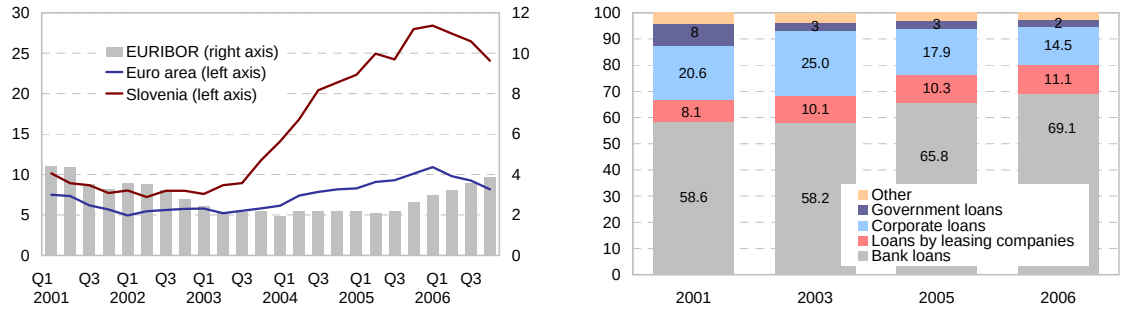
Figure 5: Annual growth rate of financial assets and liabilities (and the ratio thereof) of Slovenia and euro area households (in %)



Source: Bank of Slovenia, Eurostat – financial accounts

The annual growth rate of financial liabilities and assets of Slovenian households were quite different in the past five years as reflected in the ratio of financial liabilities to assets, which was 25% in 2006, achieving a level from five years ago. The ratio of financial liabilities to assets of euro area households rose in the same period and was 31% at the end of 2005, achieving a higher share. Fluctuation of the ratio of total liabilities to assets (financial and non-financial) of households, given the recent rapid growth of real estate prices, is different and likely in favour of assets. Until a mass appraisal of real estate is carried out in Slovenia, it is not possible to determine the value of household financial assets and the total ratio.

Figure 6: Annual growth of bank loans to Slovenian and euro area households (in %) and EURIBOR (left) and the structure of financial liabilities of Slovenian households (in %, right)



Source: Bank of Slovenia – financial accounts, ECB

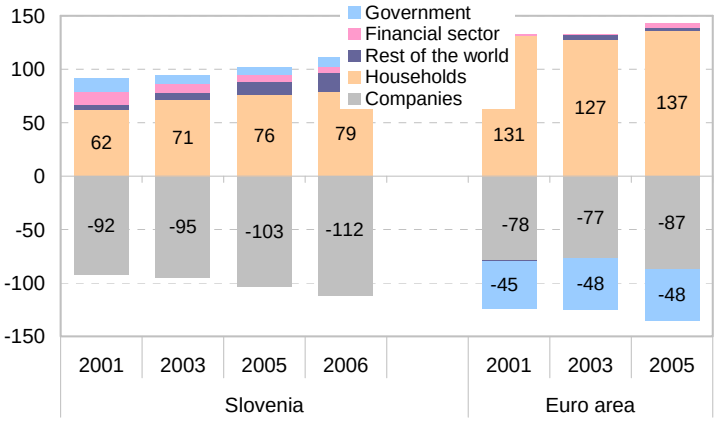
The period of falling interest rates (2001 to 2005) stimulated the borrowing of households. At the beginning of 2006, household borrowing in Slovenia and the euro area reached its highest annual growth, as reflected in the high ratio of liabilities to assets. Many loans were for the purchase of real estate, which increased the real wealth of households. The share of long-term loans in the structure of financial liabilities of Slovenian households rose 10 percentage points in the period observed, reaching 72% (short-term loans and others accounted for 12% and 16%, respectively). In 2004, when there was significant growth of loans to households, gross (real) investments of households rose by nearly 23%. Competition also had an impact on the high growth of loans: banks were forced to ease conditions for approving loans and transferred risks (primarily currency and interest rate risk) to households. This could lead to the increased risk of loan default. The structure of providers of loans to households is dominated by banks, whose share increased mainly as the result of loans to companies and the government. Stiff competition amongst banks is further increased by leasing companies, which by definition are flexible with regard to approving loans.

4 Non-financial corporations

Non-financial corporations are typically net borrowers of funds for investments in manufacturing, indirectly from households (through banks and institutional investors) or directly. The share of investments of Slovenian companies in GDP was 16% in 2005. This was considerably higher than in the euro area, as Slovenian economic development continued to catch up to the euro area. Slovenian companies finance their net negative financial position (112% of GDP) primarily through households (79% of GDP) and abroad (17.5% of GDP). The continuous increase of the negative financial position of non-financial companies coincides with the growth of their investments. In the euro area, the negative net financial position of companies was 87% of GDP at the end of 2005. This was lower than that recorded in Slovenia. The negative net financial position of the total euro area economy was higher, driven by the negative net

financial position of the government sector (48% of GDP). The total negative net financial position of the euro area is financed through households (137% of GDP).

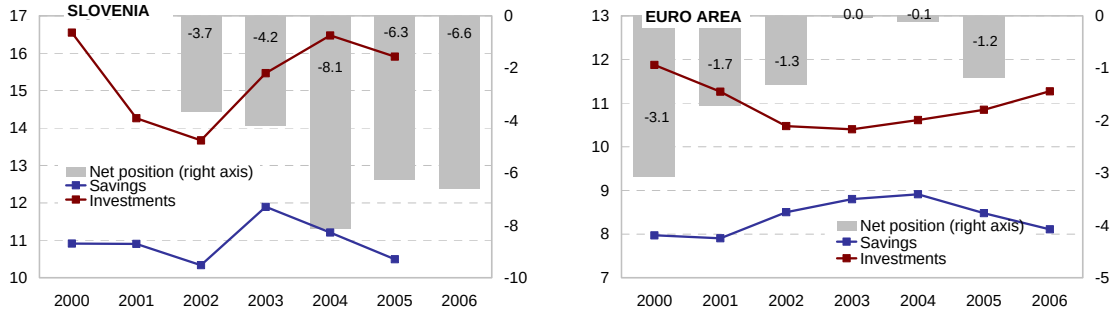
Figure 7: Financing the negative net financial position of the non-financial corporate sector as a percentage of GDP in Slovenia and the euro area



Source: Bank of Slovenia, Eurostat – financial accounts, SORS

The International Monetary Fund (IMF) has tried to explain why in the first years of this decade non-financial corporations in some of the G-7 countries (except Italy and France) became net lenders.[17] (1) Since 2003, companies from important industrial countries have demonstrated high growth in corporate earnings, primarily the result of falling interest expenses and corporate taxes. (2) The second reason is less intensive investing activities in recent years. (3) Furthermore, the excess cash of companies is being used to a large extent to repay debts (bank loans, and corporate bonds), thereby decreasing financial leverage. In most wealthy economies, the ratio of debt to equity has fallen in recent years. (4) In some countries the investment of companies in liquid assets has been noticed. On the one hand, this is driven by growing profits and on the other hand by expectations of increased uncertainty in the business environment leading to some types of precautionary savings.[18]

Figure 8: Investments, savings and the net financial position from transactions of non-financial corporations as a percentage of GDP for Slovenia and the euro area



Source: Bank of Slovenia, SORS, Eurostat – sector accounts

According to the findings of the IMF, companies in some of the G-7 countries were faced with a high level of debt under unfavourable conditions in capital markets in the first years of this decade. Profits were therefore more frequently used to pay debts than for investing and the payment of dividends. Companies became more aware of their own vulnerability to changes in financial markets and their dependence on loans and external sources of financing, leading to a greater use of internal financing. This process was reflected in a decrease of net borrowing of euro area companies in years 2000 to 2003 and the decrease or stagnation of their negative net financial position.

Slovenian companies also finance themselves to a great extent with retained earnings, but for different reasons. One reason is that intensive promotion of the domestic capital market began only recently. Five years ago market capitalisation on the Ljubljana stock exchange was four times lower. The liquidity and depth of the organised domestic capital market remain its main weaknesses. In 2006, turnover with eight listed shares on the prime market accounted for 60% of total turnover on the Ljubljana stock exchange, pointing to a high level of concentration. Companies rarely opt to

[17] For more on this subject see: World Economic Outlook. Awash With Cash: Why are Corporate Savings so High? IMF, 2006

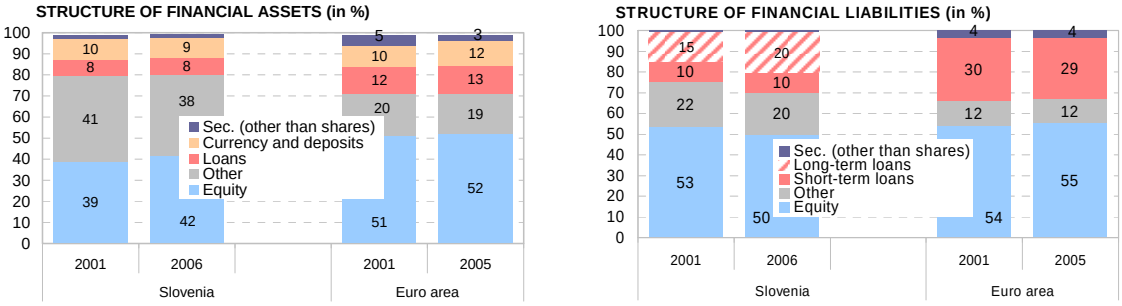
[18] Pension systems, to which companies are obliged to pay contributions, also have a significant impact on corporate savings and investment.

acquire new capital through capital injections or the issue of new bonds. When they do, these issues are generally organised as private placements. Even recently, when the share prices of leading Slovenian companies are extremely high, leading to a high price to earnings ratio (P/E), these companies do not opt for capital injections as a form of financing. The average value of P/E for prime market shares was nearly 33% in April 2007, compared to 22% one year ago.

The structure of financial assets of non-financial corporations in Slovenia indicates a significant mutual assumption of the burden of financing which could be to some extent reflected in lower operational efficiency compared to euro area companies. Instead of focusing on production, these companies may be overly burdened with financing problems, such as the extension of payment deadlines and possibly the recovery of receivables, which has an impact on liquidity. The item other accounts receivable (item F.7 in the financial accounts, including trade credits, advances, etc.) represents 38% in the structure of financial assets of Slovenian non-financial companies (only 20% in the euro area). Half of this amount is to the domestic corporate sector and one-third to the rest of the world, most likely to foreign associates. As a result, Slovenian companies also have a high share of other receivables on the liability side, which like on the assets side, is declining.[19]

Compared to euro area non-financial corporations, Slovenian companies have a lower share of equity on both the asset and liability sides. The findings regarding the relatively high level of cross ownership amongst Slovenian companies are surprising. Responsibility of some euro area companies for employee pension insurance has an impact on the high share of equity on their assets side. The pension funds of more developed Western European countries often invest a higher share in equity securities than in Slovenia.

Figure 9: Comparison of the structure of financial assets and liabilities of non-financial corporations for Slovenia and the euro area (in %)



Source: Bank of Slovenia, Eurostat – financial accounts

The structure of financial liabilities of Slovenian non-financial corporations is more similar to the financial structure of liabilities of euro area companies and is still reflected in the significance of bank financing. Loans account for 30% of the financial liabilities of Slovenian companies. More than 60% of this amount is loans from the domestic banking sector. The trend of decreasing equity at the expense of an increasing share of loans is surprising: given the development of the equity culture and the high value of stock indices, increases of equity financing through capital injections and debt financing through the bond issues would be expected.[20] This finding is also unusual given the high level of financing of Slovenian companies through retained earnings, which indirectly increases the value of their equity issued (through revaluation changes). In this regard, we must not forget that a number of other factors affect the growth of companies' shares. From transactions and revaluation changes, available in the financial accounts,[21] it is apparent that the importance of transactions for loan instruments and other receivables was greater in recent years than revaluation changes to equity instruments, even though these changes were not negligible. It is possible that the financing needs of companies in recent years during a time of favourable economic growth were very high and were therefore associated with already traditional sources of financing. It is unlikely that the share of equity in the structure of financing sources of Slovenian companies will fall in the long-term.

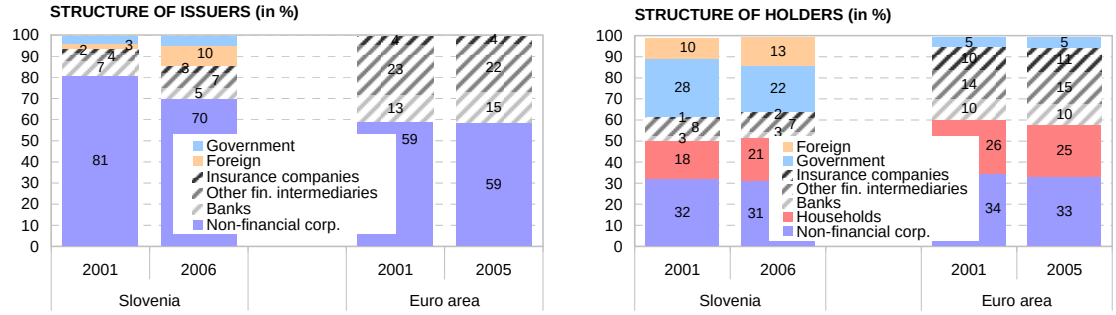
The reason for the high importance of financing through retained earnings and the high level of interrelationship amongst Slovenian companies through trade credits is not that highly developed Slovenian financial system, with regard to the relatively lower depth and value of assets under management. While the financial assets of the Slovenian financial system represent 180% of GDP, that ratio is two and a half times higher in the euro area. A socialistic past, when non-banking financial institutions did not have the appropriate conditions for development, the brief history of the Slovenian capital market and the only recent aggressive support of institutional investors in the market are the most significant reasons for

[19] As is the case with Slovenian companies, non-financial corporations in Portugal have a significantly lower share in the item other (28%).
[20] Portuguese companies finance somewhat more through loans (33%) and a similar amount through equity (slightly less than 49%).They also finance nearly 6% through the debt security issues.
[21] See the appendix for an explanation of transactions and revaluation changes.

relatively lower depth of the Slovenian financial system. Institutional investors, who with their intermediary role between savings and investments significantly influence the liquidity of capital markets, can have a major impact on how companies acquire assets.

A comparison of the structure of issuers and holders of all securities in Slovenia and the euro area demonstrates that the importance of the euro area financial sector is considerably greater.[22] While the financial sector in Slovenia achieves a 14% share amongst issuers, the share of the financial sector in the euro area is 42%, primarily the result of a considerably stronger sector of other financial intermediaries and investments funds. A similar situation also exists on the side of security holders. In Slovenia, the financial sector holds 11% of issued equity, while that share is 37% in the euro area. The reason for such a difference is the high share of state ownership in the domestic economy, which according to forecasts will continue to decline. Given an international comparison, it should primarily be financial corporations (banks, insurance companies, investments funds, etc,) that show interest in the purchase of state ownership shares. The question is do these companies already have the financial capacity to make these types of investments to a large extent.

Figure 10: Comparison of the structure of issuers and holders of securities in Slovenia and the euro area (in %)



Source: Bank of Slovenia, Eurostat – financial accounts

5 Financial corporations

As opposed to other sectors, financial intermediaries generally have financial instruments on both the asset and liability sides. They sell their own liabilities for the purpose of collecting funds to buy the liabilities of others. Their net financial position is therefore more or less in balance. The primary function of financial corporations is to pass assets from sectors with a surplus to sectors with a deficit, thereby contributing to the efficient performance of the overall economy. Only when financial markets and financial institutions function efficiently together can they contribute to the optimal allocation of assets, reduce the cost of capital and allow for risk-sharing and risk-diversification (Papedemos, 2006).

In accordance with ESA95, the financial sector (S.12) is broken down into five sub-sectors in the sector accounts:[23]
(1) Central bank (S.121).
(2) Other monetary financial institutions (S.122) which primarily includes banks and savings banks.
(3) Other financial intermediaries, excluding insurance companies and pension funds (S.123), comprise one of the most diverse sectors. Investments funds and leasing companies account for a significant share of financial intermediaries.
(4) Financial auxiliaries (S.124), which includes stock broking companies. This sector also includes various financial corporations. However, their assets do not represent a significant share of the overall financial assets of the financial sector.
(5) Insurance corporations and pension funds (s.125). With life and pension insurances, this sector is increasing in importance.

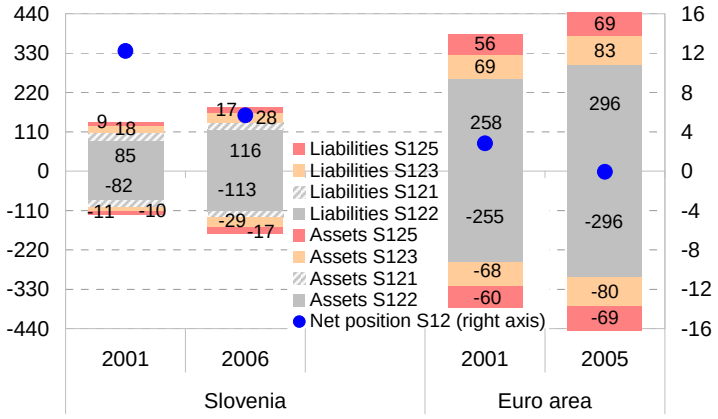
Compared to the euro area, the importance of the insurance corporations and pension fund sector (S.125) is underestimated in Slovenia. This sector accounts for 9% of financial assets of the total Slovenian financial system. In the euro area, the same sector accounts for more than 15%. In both economies, particularly in Slovenia, the role of this sector is increasing substantially. The reason is the growing awareness of the need for additional old-age savings, as this sector primarily manages the long-term assets of households in the form of life and pension insurances. The importance of other

[22] At the end of 2006, Slovenian residents held equity totalling 170% of GDP and were issuers of equity totalling 154% of GDP. This share has been growing continuously for the last five years, mainly due to favourable economic growth and good operating results and the associated growth of prices on stock markets. Financial ownership integration with the rest of the world and as a result foreign equity markets is of growing importance for the domestic economy. At the end of 2006, foreigners held more than 13% of total equity in Slovenia, while nearly 10% of issuers of equity (held by Slovenian residents) were foreign. At the end of 2005, euro area residents held a significantly higher share of equity (236% of GDP). Given the favourable economic conditions in recent years, this share has also risen. This difference is also due to the fact that few Slovenian financial companies are listed on the stock exchange, meaning that their securities are generally estimated at book value which is frequently lower than market value.

[23] For a more detailed definition of these sub-sectors see SNA93 and ESA95.

financial intermediaries (S.123) is also greater in the euro area. The difference however is not as obvious. The significant share of other Slovenian financial intermediaries in the overall financial system results from the method of privatisation of companies in Slovenia, the emergence of so called authorised investment companies and the highly dynamic development of mutual funds in recent years. The banking sector (S.122) still maintains the chief role in the financial systems of Slovenia and the euro area. However, its role has been reduced in recent years, mainly on the liability side. The ageing of the population and the associated unsustainability of the existing pension system, resulting from low interest rates and the search for investments as alternatives to bank deposits are behind this reduction. Furthermore, the banking sector, together with leasing companies, is becoming more aggressive with regard to loans due to low interest rates. The demand for loans is stimulated by activity in the real estate market and favourable economic conditions in recent periods.

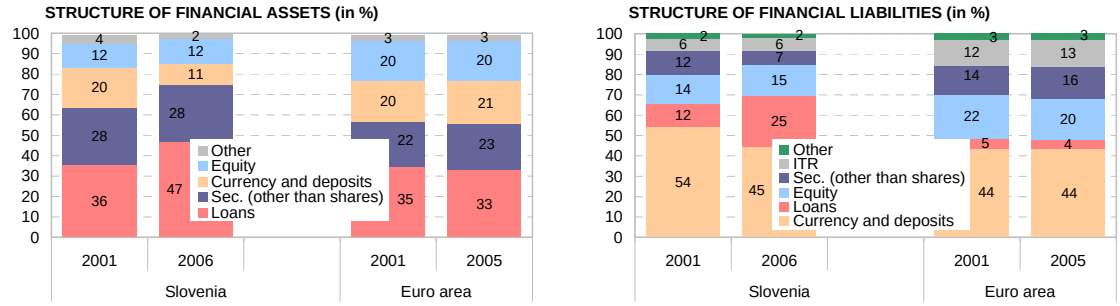
Figure 11: Financial assets and liabilities and the net position as a percentage of GDP of the Slovenian and euro area financial sector



Note: S.12 – Financial corporations; S.121 – Central bank; S.122 – Other monetary financial institutions (including commercial banks and savings banks); S.123 – Other financial intermediaries, excluding insurance companies and pension funds (including investment funds and leasing companies); S.125 – Insurance corporations and pension funds; Net position S.12 – difference between the financial assets and liabilities of the total financial sector.

Source: Bank of Slovenia, Eurostat – financial accounts, SORS

Figure 12: Structure of financial assets and liabilities of the total financial sector of Slovenia and the euro area (in %)



Source: Bank of Slovenia, Eurostat – financial accounts

The strong banking tendency of the Slovenian economy is reflected in the structure of financial assets (with loans representing 47%) and liabilities (with currency and deposits representing 45%) of the Slovenian financial system. These shares are also high in the financial system of the euro area, which has also been traditionally oriented to banking. The structure of assets and liabilities of the Slovenian financial system has changed considerably in the last five years due to the adaptation of the domestic banking system to changing methods of financing given the unavoidable decline in interest for bank deposits. The domestic financial system has adapted to the nearly 10 percentage point drop in the share of currency and deposits with an increased share of loans. Banks and leasing companies in particular ensure additional sources of funds by borrowing abroad. With the decrease of deposits, the structure of liabilities (with regard to deposits) has been adjusted to a great extent to the structure of the euro area. The same is not true for the share of loans, which has recently declined. Financial corporations of the euro area receive considerably more funds through equity financing and bond issues. An increase in this type of financing can be expected in Slovenia with the development of the capital market and a second round of privatisation.

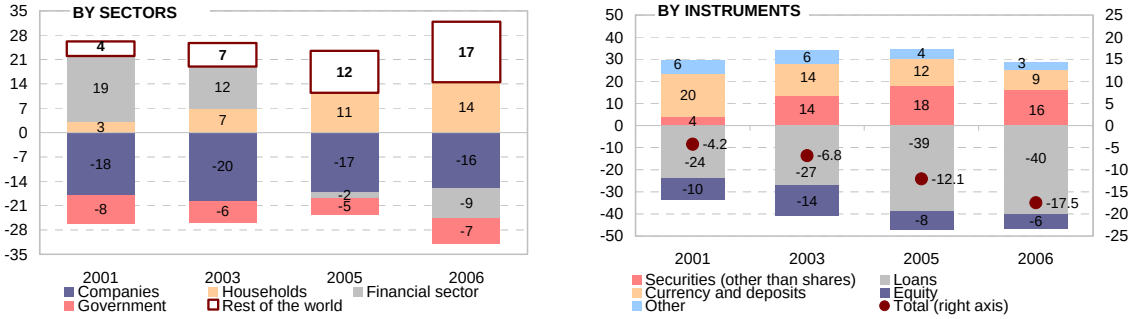
With the increased borrowing of households, the share of loans on the assets side of the domestic financial system has risen by 10 percentage points in the last five years. This has resulted in a considerable deviation in the structure of assets of the domestic financial system from that of the euro area. The conservative investment policies of domestic insurance

companies and pension funds have an impact of the high share of debt securities. Given the proceeding period of low interest rates and high returns on shares, this indicates to some extant limited ability of the domestic financial system to adapt to conditions in financial markets.

6 Position of the Slovenian economy to the rest of the world

The Slovenian economy has a growing negative net financial position to the rest of the world. At the end of 2006, financial liabilities exceeded claims to the rest of the world by 17% of GDP. This indicates a deficit of domestic disposable financial assets with regard to investment needs. The difference for individual sectors and instruments are considerable. It is important that the yields of domestic financial assets invested abroad, taking into account transaction costs and risks, remain on par with the yields of foreign financial assets invested in Slovenia.

Figure 13: Net position to the rest of the world as a percentage of GDP by sectors (left) and by financial instruments (right)



Source: Bank of Slovenia – financial accounts, SORS

Amongst the major institutional sectors, only households have a positive net financial position to the rest of the world. The principal reason is the foreign currency accumulated by households in the past.[24] A large portion of foreign currency is in euros. Therefore the value of foreign currency decreased considerably with the adoption of the euro in January 2007. The Bank of Slovenia has a large amount of claims to the rest of the world in the form of deposits, which due to the contraction of total assets, are decreasing. On the other hand, domestic banks are being financed more and more by the deposits of non-residents, thereby increasing the negative net position to the rest of the world in this form of financing. Household claims to the rest of the world in the form of foreign currency and from the Bank of Slovenia in the form of foreign deposits are still significantly higher than the banking sector's liabilities to the rest of the world in the form of deposits.

The banking sector and leasing companies contribute the most to the increase of the negative net position to the rest of the world by raising loans abroad, which are subsequently placed in the domestic economy. Given the pronounced shift of households away from bank deposits, foreign sources of financing are extremely important for banks. This however increases their dependence on external financing sources. In the event of a severe recession in the European economy, this type of financing could become unreliable. The negative position of the corporate sector is decreasing due to the intermediary role of banks and leasing companies and the associated decrease of direct self-financing with foreign loans. This is also the result of interest rate convergence. The corporate sector has claims to the rest of the world through other instruments, an indication of the high level of business links of domestic companies through trade credits abroad, most likely with associated companies.

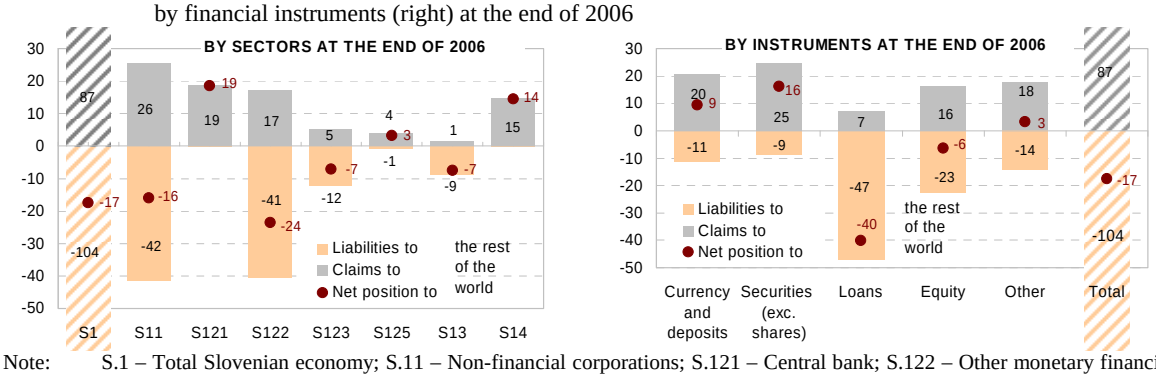
The low depth and liquidity of the Slovenian debt securities market affect net claims to the rest of the world in the form of bonds. It is primarily the banking and insurance sectors that are increasing investments in foreign bonds, which for banks, is additionally stimulated by the release of funds from Bank of Slovenia bills. Growing interest of foreigners for domestic government bonds and the decreased investments of the Bank of Slovenia in foreign debt securities due to a contraction of total assets linked to Slovenia's entry into the euro area have affected the decrease of the positive net financial position of bond instruments in recent period.

The Slovenian economy has net liabilities to the rest of the world in the form of equity, resulting from equity investments of foreigners in domestic companies and the banking system. Equity investments of domestic banks and companies abroad are on the rise. Increased interest of mutual funds and direct interest of the household sector in portfolio investments in foreign equity securities has had an impact on the substantial decrease in the negative net position in the form of equity in recent period. The following figures demonstrate the desire of households for high returns, frequently

[24] Foreign currency that households no longer "keep at home", which has been invested in the purchase of various forms of property (financial and non-financial) abroad, is also taken into account.

without regard to risks assumed. Interest in Balkan capital markets, which have achieved above-average yields, has increased in recent period.

Figure 14: Claims, liabilities and the net position to the rest of the world as a percentage of GDP by sectors (left) and by financial instruments (right) at the end of 2006



Note: S.1 – Total Slovenian economy; S.11 – Non-financial corporations; S.121 – Central bank; S.122 – Other monetary financial institutions (including commercial banks and savings banks); S.123 – Other financial intermediaries, excluding insurance companies and pension funds (including investment funds and leasing companies); S.125 – Insurance corporations and pension funds; S.13 – General government; S.14 – Households

Source: Bank of Slovenia – financial accounts, SORS

The Slovenian economy has financial liabilities to the rest of the world totalling 104% of GDP, predominated by loans (47%), primarily of the banking sector, followed by liabilities in the form of equity (23%). Foreign capital investments in domestic non-financial corporations stand out. On the other hand the Slovenian economy with 87% of GDP has less financial claims to the rest of the world for 17% of GDP. Standing out are claims in the form of bonds (25%), primarily of the central bank, but with an increasing amount from commercial banks and the insurance sector. With 20%, claims in the form of currency (mainly of households) and deposits, for which the central bank stands out, are also significant. Financial claims to the rest of the world in the form of equity, primarily from mutual funds and households, are also on the rise.

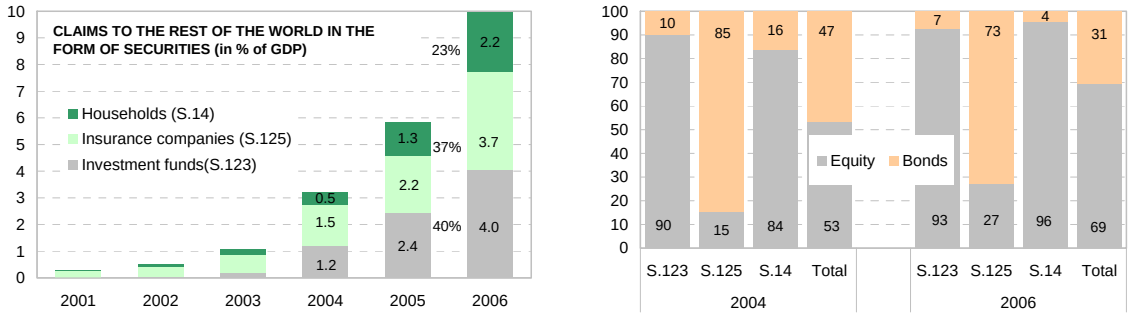
In the most recent period, there is a noticeable decrease of net liabilities to the rest of the world in the form of equity. It is however necessary to point out that income is flowing abroad from countries with predominantly foreign equity. This weakens the current account and increases borrowing, thereby decreasing the portion of domestic product that remains for domestic spending. With approximately 15% of GDP, the negative net position to the rest of the world in the form of equity was highest in 2002 and 2003 when the domestic economy had not yet begun to actively invest in foreign securities (also due to legal restrictions), while non-residents began investing more intensively in Slovenia.[25] On the other hand, excessive investment abroad means less savings for domestic investment, which in addition to the development of the domestic economy, provides for the creation of new jobs. Already high claims of households to the rest of the world (more than 9% of GDP) in the form of equity and debts securities (2.2% of GDP directly, 3.4% of GDP through the insurance sector and more than 3.5% through investments funds) have achieved extraordinarily high growth recently. Considerable inflows of financial assets through the banking sector and foreign loans represent a burden on future income in terms of debt servicing. In any event, international integration is necessary. It is important however that the domestic economy allocate its assets as efficiently as possible in the given circumstances.

Given that savings have significant meaning for the development of the domestic economy and that these are primarily assets of households who increasingly assume risks, a brief review of assets (directly and indirectly through the insurance sector and investment funds) of the household sector, invested in foreign securities such as bonds and shares, follows.[26] With the increasing role of non-monetary financial intermediaries, households' exposure to risk also increases. In this regard, the question arises: are households qualified to manage risks and to what extent are they even aware of them? It is evident that the perception of risk has recently shifted considerably towards the acceptance of significantly greater risks for the sake of high returns. With increased investment abroad, resulting also from a lack of depth and liquidity in the domestic capital market, the sensitivity of the domestic economy to conditions in foreign capital markets increases. Most troublesome is the increasing investment of households in less developed and high-risk regions.

[25] In 2002, the Swiss company Novartis took over Lek, Belgian Interbrew attempted a takeover of Union and the first phase of privatisation of NLB was completed with the sale of 34% share of the government to the Belgian banking and insurance group KBC.

[26] Hereinafter the phrase "direct claim of households" is used in the context of direct, own investments of households in foreign securities. The term indirect claim is used in terms of investment via the insurance sector (primarily life and pension insurance) and other financial intermediaries, (mainly investment funds). There are some simplifications as total assets of the insurance sector (S.125) and other financial intermediaries (S.123) invested in foreign securities are included in the data. We have assumed that most of these assets are represented by liabilities to households.

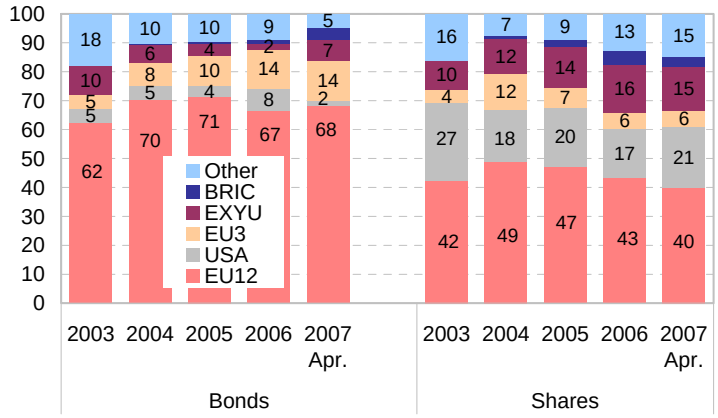
Figure 15: Structure of claims of households to the rest of the world as a percentage of GDP with regard to intermediaries (left) and with regard to the form of equity and debt securities (in %) (right)



Note: S.123 – Other financial intermediaries excluding insurance companies and pension funds (including investment funds); S.125 – Insurance corporations and pension funds; S.14 – Households
Source: Bank of Slovenia

Households have financial claims to the rest of the world of approximately EUR 3 billion or 10% of GDP in the form of debt securities and equity, which are constantly increasing. Five years ago, that share was barely one-quarter of one percent of GDP. Of the aforementioned amount, the majority of household claims to the rest of the world are via mutual funds and life insurance. Recently however, more and more is being invested directly abroad. Household investments in foreign equity securities have recorded the highest growth, or nearly 70% at the end of 2006. Given the high growth achieved recently by Balkan capital markets, their share in the regional structure of capital investments of the household sector has risen to over 21%. The markets of other developing countries such as India, Russia, Brazil and China, as well as Japan are of increasing importance. The increased spread of investments in terms of regions means a greater diversification of risks. On the other hand, the increased share of investments in the markets of developing countries also means increased risk. Data have confirmed recent findings: Slovenian households that opt for investments in capital markets are very prone to investment risks, resulting from their lack of experience and the fact that they have not yet experienced an extended recession in the (domestic) capital market.

Figure 16: Regional structure of direct and indirect investments of households in foreign securities (in %)



Note: EU12 – euro area; EU3 – United Kingdom, Denmark, Sweden; BRIC (Brazil, Russia, India, and China); EXYU (countries of the former Yugoslavia).
Source: Bank of Slovenia

Funds invested in capital markets are mainly long-term, meaning short-term capital fluctuations should have a limited effect on wealth and household spending. The question is whether Slovenian households are aware that investments in capital markets are considered primarily long-term savings. The danger is mainly the potential simultaneous sale of financial instruments of investors which could threaten the liquidity of financial markets. The loss of household savings could trigger a loss of confidence in the financial system, which could potentially lead to decreased spending and economic growth through a wealth effect. This type of macroeconomic effect could have a severe impact on the total financial system.

7 Conclusion

The value of financial assets, with regard to GDP, is significantly lower in Slovenia than in the euro area. One of the reasons is the relatively short development period (just over 15 years) of institutional investors. The consequences are

reflected in the economy as a whole through the financial sector. Equity culture is improving; however, given the depth and liquidity of the domestic capital market it is not yet sufficiently developed. This is also due to the fact that Slovenian authorised investments companies established with the primary objective of developing an equity culture amongst the population were not that successful in achieving that objective. Privatisation equity was concentrated in the hands of smaller groups, who today control quite a part of Slovenian enterprise sector, amongst other also due to not perfect legislation and not that much informed and knowledgeable small shareholders.

The unsustainability of the existing pension system also contributes to the limited financial assets of Slovenian households. This is confirmed by a comparison with the euro area. If we want to maintain a specific standard of living for the long-term, households must directly (or the government through taxes and contributions) allocate more to savings. Future pension reforms must mean new, supplemental savings, which would also mean new investments in the Slovenian economy.

Sustainability of the existing pension systems is one of the most significant problems in more developed countries. Slovenia is no exception. Discussions on this topic are welcomed: it is a complex system that manages huge amounts of money and represents financial security for citizens. Recently, the idea of defined contribution pension insurance in place of defined benefit pension insurance frequently arises in Slovenia. The investment risk associated with this type of savings is again transferred to households. However, given to some extant limited financial knowledge and the lengthy socialistic history of Slovenia, many are unaware what this means. Furthermore, voluntary pension contributions do not guarantee that all people, particularly those who do not have surplus funds during their working years, will be mindful of the reduced standard of living during retirement and opt for pension savings before it is too late. We may be able to say that the majority of workers will function well in a world of defined contribution voluntary pension insurance, but it is unlikely that all will. A portion of the pension system should be created in the form of individual accounts of defined contribution compulsory insurance, since households do not have the capacity as institutional investors to identify, assess and manage risks.

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APPENDIX

The following definitions are summarised from Chapter 1 (General features) and Chapter 8 (Sequence of accounts and balancing items) of the European System of Accounts.

National income (Chapter 8): Gross (or net) national income (at market prices) represents total primary income receivable by resident institutional units: compensation of employees, taxes on production and imports less subsidies, property income (receivable less payable), (gross or net) operating surplus and (gross or net) mixed income.
Gross national income (at market prices) equals GDP minus primary income payable by resident units to non-resident units plus primary income receivable by resident units from the rest of the world.
Gross national income (at market prices) is conceptually identical with gross national product (GNP) (at market prices), as hitherto understood in national accounts generally.
National income is not a production concept but an income concept, which is more significant if expressed in net terms, i.e. after deduction of the consumption of fixed capital.

National disposable income (Chapter 8): Gross (or net) national disposable income is the sum of the gross (or net) disposable incomes of the institutional sectors. Gross (or net) national disposable income equals gross (or net) national income (at market prices) minus current transfers (current taxes on income, wealth etc., social contributions, social benefits and other current transfers) payable to non-resident units, plus current transfers receivable by resident units from the rest of the world.

Saving (Chapter 8): This aggregate measures the portion of national disposable income that is not used for final consumption expenditure. Gross (or net) national saving is the sum of the gross (or net) savings of the various institutional sectors.

Transactions (Chapter 1): A transaction is an economic flow that is an interaction between institutional units by mutual agreement or an action within an institutional unit that it is useful to treat as a transaction, often because the unit is operating in two different capacities. Financial transactions describe the net acquisition of financial assets or the net incurrence of liabilities for each type of financial instrument.
The classification of financial transactions corresponds to the classification of financial assets and liabilities. Seven categories of financial transactions are distinguished: monetary gold and SDR (F.1), currency and deposits (F.2), securities other than shares (F.3), loans (F.4), shares and other equity (F.5), insurance technical reserves (F.6) and other accounts receivable (F.7).

Other changes in assets (Chapter 1): Other changes in assets record changes that are not the result of transactions. They are either:
a) other changes in the volume of assets and liabilities: contain normal appearance and disappearance of assets other than by transactions; changes in assets and liabilities due to exceptional, unanticipated events; changes in classification and structure.
b) holding gains and losses result from changes in the prices of assets. They occur on all kinds of financial and non-financial assets, and on liabilities. Holding gains and losses accrue to the owners of assets and liabilities purely as a result of holding the assets or liabilities over time, without transforming them in any way.