Eesti Pank and the Financial Supervision Authority have in recent years repeatedly drawn the attention of the loan-takers and the public to the fact that under certain conditions rapid credit growth might pose a threat to Estonia's economic stability. Is debt the only risk criterion? What are the associations and indicators that one should monitor in order to avoid a financial crisis? The following article is an attempt to find answers to these questions.

PRIVATE SECTOR DEBT AND FINANCIAL STABILITY

Lenno Uusküla[1]

It is the historical role of banks to bring depositors and borrowers together. As a rule, depositors want to withdraw the funds that they have deposited plus the interest at a short notice at the moment in time that is suitable for them. For banks short notice means that they are offered short-term deposits. Borrowers generally seek long-term loans, i.e. an opportunity to repay the loan after a longer period of time by a fixed date agreed upon earlier. Banks accept short-term deposits from depositors and lend the same funds to borrowers as long-term loans. Unhindered banking operations require a consistent and smooth inflow of deposits. Renewed deposits cover the funds withdrawn until borrowers repay long-term loans to the banks. If the inflow of short-term funds into the bank terminates, it endangers the stability of banking.

Banking crisis is a situation in which a considerable number of banks show negative net assets, i.e. their liabilities outweigh their assets. In a crisis situation a bank has an option to cease operations, i.e. file for bankruptcy and start the liquidation process or, if the shareholders are interested, add supplementary capital to net assets and continue to operate. The third possibility is government intervention so as to resolve the crisis. It becomes an option if private investors do not wish to save the bank and the government takes over the management and spends money so that the bank could continue operating. If there are many other financial establishments in the sector besides banks, the stability of the whole financial sector is under threat. A systemic crisis is a situation in which a significant part of the financial sector is insolvent.

[1] This article is based on the study *Critical Level of Debt*?, which will be published in the Working Papers of Eesti Pank in the near future. The author wants to express his gratitude to the co-authors of the study, Peeter Luikmel and Jana Kask.

In recent years the debt burden has soared in many Central and Eastern European countries[2]. This can be regarded normal, since in several countries household and corporate debts were minimal at the start of the 1990s. Developments in the banking sector have made it easier to borrow for investment and consumption purposes. Money can be repaid from (larger) future income. Nevertheless, analysts are interested in as to which extent such developments might contribute to instability in the financial sector (banks as well as other financial institutions, e.g. leasing companies). **The question is: How fast can the debt grow without creating problems**?

This article aims to view possible relations between debt and financial crises as well as other factors contributing to financial crises or forecasting such crises. This is followed by a concise overview of the developments in the debt burdens in the European Union (EU) and in three candidate countries (Bulgaria, Romania, and Turkey). The article also analyses the extent to which namely private sector debt might be related to financial crises in more developed European countries. The article concludes with describing the situation in Estonia from the borrowing aspect coupled with a brief discussion about future scenarios.

Debt-Related Problems

Debt burden per capita or as a ratio to GDP shows how much the residents of a country have managed to take out loans in past years. The larger the debt burden, the more one has to spend on interest payments. **If the loan burden is high, even minor changes in interest rates can translate into major growth in loan-servicing costs**. However, the borrower can consider possible growth in interest rates upon taking out a loan, and a rise in interest rates should not lead to insolvency. But if the rise in interest rates is unexpected, it might damage his/her payment ability. Clients with solvency problems boost the share of bad debts in a bank's portfolio.

Increasing loan burden might also raise risks. Banks often grant loans to such sectors of the economy, where they lack expertise on possible risks. If there is strong competition in the banking sector, this might lead to underestimating the risks and the deterioration in loan quality. In the context of fast economic growth, banks find it more difficult to distinguish good loan projects from bad ones, which in turn encourages adverse selection. This means that the banks' loan portfolios contain more bad loans, but such risks are not reflected in the interest rates. Consequently, the assets of the bank deteriorate significantly in a crisis situation.

In the context of competition it is also possible that a bank decides to lower interest margins so as to take over the clients of other banks. In order to maintain their client base, other banks also have to reduce their interest rates. To a certain extent this can be

[2] Under debt the total of household and corporate debt in the domestic financial sector has been borne in mind. Debt burden is the ratio of debt to GDP.

achieved at the expense of cutting the margins, but in stiff competition it might also lead to underestimating the risks and thus also to increased vulnerability.

Rapid loan growth also leads to consumption and investment booms, increasing inflation and, consequently, to the rise in the real exchange rate of the currency, which in turn cuts into the current account balance. Active credit activities might also lead to stock and real estate market bubbles. While good times persist, loans are issued under favourable terms, but in bad times loan resources are reduced; therefore debt growth can debase economic climate as a whole and also have an adverse effect on financial sector development.

In conclusion, **fast loan growth is a factor increasing risks and creating crises, if it is accompanied by several other factors contributing to vulnerability**. The following is an overview of the typical reasons and indicators of crises.

Reasons and Indicators of Crises

Financial crises are not easy to predict, similarly to other crises. If the reason(s) of crises are known, countermeasures can be adopted. There are also several macroeconomic, financial, and institutional indicators that are analysed as possible indicators of crises.

Such macroeconomic indicators are the **level and growth of GDP**. The more developed a country, the stronger is its financial sector. In poorer countries the financial sector is mostly underdeveloped and this increases risks. Fast GDP growth supports a country's ability to cope with shocks and secures income for repayment of debt.

The underlying risk of the loans issued must also be incorporated into computing the respective interest rates. **Low interest rate level** highlights high credibility of the economic system, an abundance of good investment projects, and the ability of the financial sector to distinguish good projects from bad ones. Low interest rates make it easier for households and companies alike to make interest payments and delay principal repayments at smaller costs. This in turn helps to maintain loan quality, not least in the case of possible short-term payment problems.

The connection between **inflation** and financial crises is more complicated. High level of inflation should reduce debt burden. On the other hand, an overly high level of inflation reduces the ability of people to correctly predict real interest rates. Significant uncertainty in turn is reflected in the growth of interest margins.

Stable economic policy that considers risks is also important. **Budget deficit** might affect the above-mentioned indicators, boost the inflation and interest rates, and discourage private investments. Meanwhile decisions undermining international competitiveness of the companies operating in the country increase the share of bad loans in the loan portfolio of the banks. On the national and currency level the **size of currency reserves** is important as well as the change in reserves measured against cash in circulation and deposit money (M2).

Besides the above-mentioned debt indicators also other financial indicators are significant. It is important to analyse several **liquidity and solvency ratios**. For instance, the dependence of banks' assets on the price of assets is relevant. A decline in the stock or real estate market considerably reduces the net value of banks and, as a result, the bank's liabilities might outweigh its assets.

Several institutional indicators are also of importance. **High share of foreign money in circulation** (**dollarisation or eurosation**) reduces the ability of the central bank to help local banks as a lender of last resort. Meanwhile **deposit guarantees** enhance the willingness of banks to take risks since people show less interest in the solvency of banks.

Debt burden and financial crises in Europe

During the past thirty years more developed countries have seen comparatively few systemic banking crises. In 1977–85 Spain undertook reorganisation of the banks in the course of which several of those were closed, merged with other banks or nationalised. Arising from a recession and problematic mortgage loans, Norway's banking sector had problems in 1987–93, and the central bank was compelled to grant special loans to six major banks. In 1991–94, the government of Finland took control of three banks, managing the total of 31% of the deposits in the banking system. The funds spent on the recapitalisation of the banks measured as a ratio to GDP amounted to more than 11%. While solving the 1990s crisis Sweden spent 4% of GDP on the recapitalisation of the banks that had difficulties.

Minor (non-systemic crises) occurred in the 1970s in Germany and the United Kingdom, in the 1980s in Denmark and in the 1990s in France, Greece, and Italy. In these instances just a small share of the banking sector was having problems.

None of the eight Central and Eastern European (CEE) countries that joined the European Union (EU) this year escaped the banking crisis of the 1990s; neither did Bulgaria and Romania. The crises occurred mainly at the beginning of the decade in the early stages of market economy and banking sector developments. In Bulgaria and Poland loans had been channelled to selected branches of the industry by the governments. Companies were unable to repay the loans, which constituted a serious problem. In other countries crises were not so much related to direct government intervention but more with development-specific factors.

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Since the 1970s the average debt level has significantly increased in Europe. Figure 1 shows direct loans that the private sector has taken from the banking sector[3]; in reality

[3] Even though the structure of the financial sector and developments differs by countries, the analysis of bank loans still provides an initial insight into the current situation.

these are supplemented by loans issued by other financing institutions. In many countries the debt burden has multiplied, and has exceeded the level of GDP. Meanwhile such growth has not been level. There have been periods of rapid growth and there have been years when growth has been minimal.

When comparing the average debt burden in the 15 older EU member states with the respective indicator in the recently joined countries or those seeking to join (Bulgaria, Romania, Turkey), it is obvious that the debt burden in the old EU member states is significantly higher.

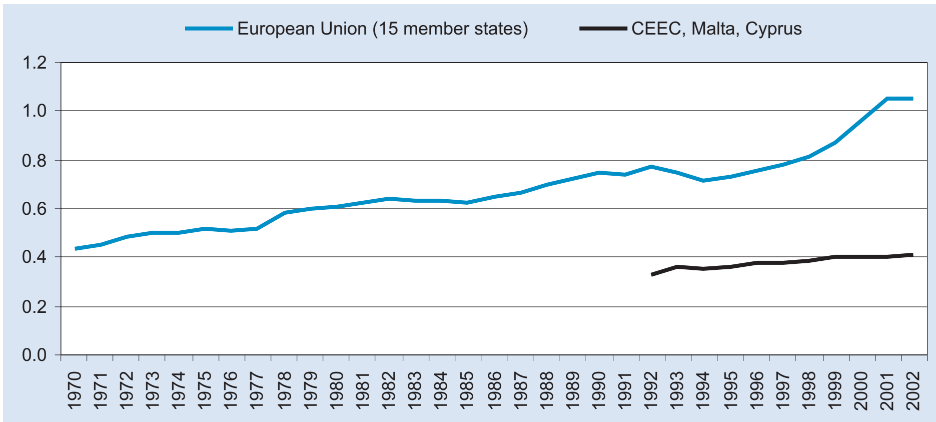

Figure 1. Household and corporate bank loans in the European countries (debt to GDP ratio, %)

Source: IFS

When observing the debt burden during crisis episodes (Figure 2), it can be seen that there have been crises in countries with low debt burden and in countries with high debt burden. Debt burden in the CEE countries during crises has been smaller than in the 15 old EU member states.

There is no common view in economic writing as to whether the level and growth of debt are relevant contributors to a crisis. **Usually, one manages to show that crises are related to a bigger debt burden, but the relevance of statistical correlation depends on several factors. Firstly, it is the selection bias that matters**. When monitoring areas where many financial crises have occurred, the probability of finding statistically meaningful correlations is bigger. When incorporating several other countres, including those with large debt burden, the relevance of statistical correlation fades.

Secondly, it is important how many different indicators serve as a basis of an analysis. A larger number of variables might lead to either an over- or underestimated statistical correlation since the indicators are closely related. For example, in countries with extensive GDP the debt burden is large as well, but it is coupled with a low level of inflation and interest rates.

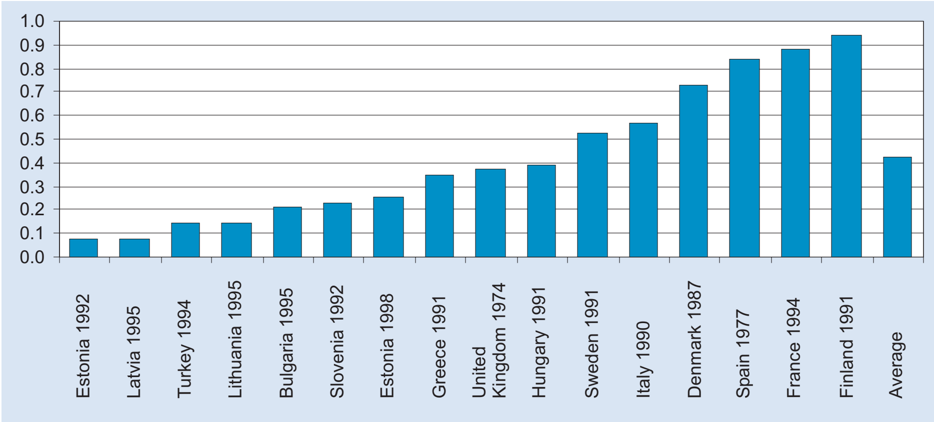

Figure 2. Bank loans to GDP ratio (%) during banking crises

Source: IFS; Caprio and Klingebiel (2003)

Figure 3 compares debt burdens in the early years of crises to customary debt burdens in Europe since 1970. If the probability of a crisis did not depend on the debt burden, both lines in the chart should be comparatively similar or even overlap. The actual position of the two curves regarding each other shows whether the likelihood of a crisis is bigger or smaller. If the debt line describing a crisis situation is above the average debt line, it indicates greater likelihood of a crisis, but if it is below it, the probability of a crisis is smaller.

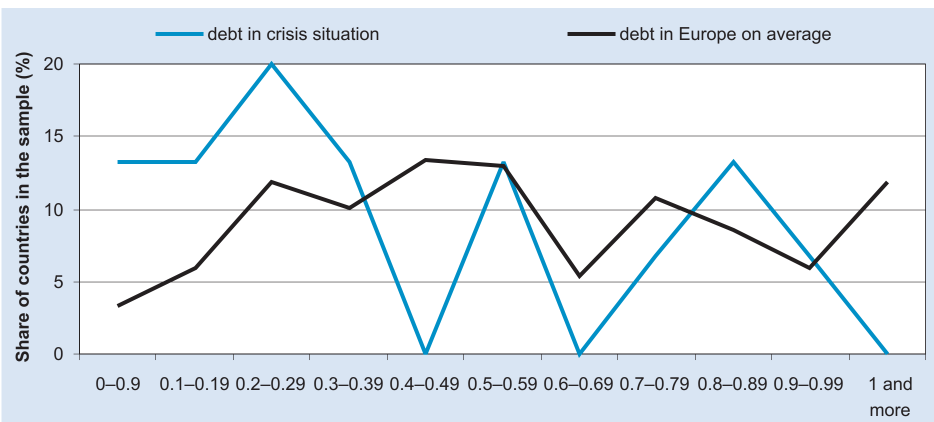

Figure 3. Debt level during financial crises and on average in Europe as of 1970 (% of GDP)

Source: IFS; Caprio and Klingebiel (2003)

All in all, there have been more crises in countries with a very low indebtedness and fewer in the countries with a higher debt burden, where the debt to GDP ratio stands at 60–80%. This can be explained by the crises in the CEE countries at the beginning of the 1990s, where the level of debt was not the main reason for the crisis. In the old European Union countries the likelihood of a crisis is the same in high-debt as well as low-debt CEE countries.

Growth in the debt burden can be interpreted from two aspects. For instance, debt growth from 10 to 15 per cent translates into a growth rate of either 5 percentage points or 50 per cent. Using either of the indicators has certain advantages. Hereby the second option has been selected since it allows a clearer distinction of growth in the debt burden on the lower level. Figure 4 shows the likelihood of crises in line with the growth in the debt burden. **There have been more crises in the context of very fast growth in the debt burden (more than 51% in three years)**. Such a rapid growth is only possible in the countries with a very low initial debt burden. For example, the debt burden in Bulgaria tripled in 1992–1995, rising from 2% to 6% of GDP. This was followed by a crisis, which lasted until 1997. It is easy to find periods when rapid debt burden growth has been followed by a financial crisis, but it is even easier to find periods when crises have not followed.

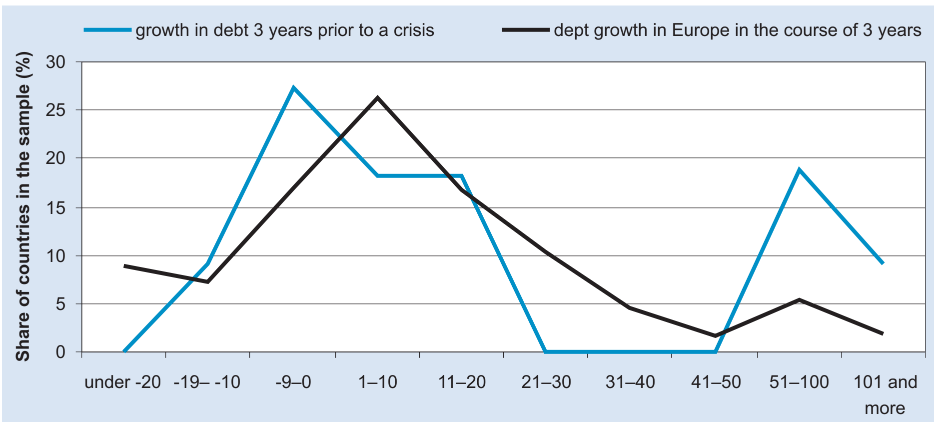

Figure 4. Debt growth during financial crises and on average in Europe since 1970 (%)

Source: IFS; Caprio and Klingebiel (2003)

Based on the above, it can be claimed that neither the debt burden nor the growth thereof have been direct reasons for financial crises in European countries. However, one should not make a conclusion that there is no need to pay attention to the issue of debt. As mentioned above, a growing or large debt burden can be an indirect reason for a crisis. Besides, the above analysis did not take into account the reaction to the growth in loans. It may be possible that different measures have been adopted so as to curb the growth, which in turn has enabled a smooth changeover from the rapid loan growth phase to a phase of slower growth. Measures for crisis prevention have not been taken into account either.

Debt Burden and the Severity of Crisis

Besides the fact that debt burden can cause crises, we also studied to which extent the gravity of the crises has been related to the debt burden. By doing that we analysed the length of crises as well as the costliness thereof measured as a ratio to GDP.

Comparing the length of crises in the context of different levels of debt, a correlation can be pointed out that **in case of crises lasting for six years and more the debt burden has been on average twice as large as in case of shorter crises**. Moreover, short crises have occurred in the countries with small and large debt burden alike, whereas long crises have happened mainly in the countries with a large debt burden.

When observing average GDP growth rates seven years before and after a crisis and comparing the period of crisis with economic growth, it can be also noted that **the larger the debt burden, the costlier the crisis has been**. Spain as the only country, where economic growth during the crisis was nearly twice as fast as the average rate, is an exception here.

Debt Burden in Estonia

At the beginning of the 1990s, the debt burden of the Estonian private sector was very low. Young newly established banks had little experience in risk management. The starting years in banking in 1992–95 have, indeed, been described as an ongoing crisis when small banks closed down one after another. The second half of the 1990s brought about a consistent rise in the debt burden: in 1995–98 the indicator soared by more that 70%, amounting to approximately 25% of GDP[4]. The Asian crisis in 1997 and the Russian crisis in 1998 brought problems also to Estonia. By 2002 private sector debt burden had soared to 58% of GDP, while 25% of that were loans granted by leasing companies. In most of the CEE countries the debt level is lower than in Estonia, whereas their growth rates are also high.

Even though Estonia's current loan level is similar to that of the European countries in the 1970s, our situation is not one-on-one comparable to the situation in Europe at that time. Among other things, it should be considered **that at present the capital is more mobile internationally. The financial sector should also be currently stronger than before, partly due to financial supervision**, which is capable of monitoring the risks taken by banks. It is possible to solve emerging crisis situations faster, thus considerably reducing the costs arising from any crisis.

Considering the future outlook, it is important how fast Estonia approaches the level of more developed countries. In a small open economy it is likely that the debt burden turns out to be rather big. This is encouraged by several factors. Future adoption of the euro

[4] Here also the loans granted by financial institutions have been considered.

will reduce currency and country risks. The mobility of capital accelerates integration of the financial markets with the European countries. Since the level and growth of savings is small in Estonia, it is natural that investments are financed from foreign loans. This is being further boosted by positive expectations regarding the future wealth of the Estonians. The larger the expected future GDP, the bigger the future consumption is. Borrowing today translates into comparatively smaller consumption in the future.

Considering the future outlook, it is important how fast Estonia approaches the level of more developed countries.

Nevertheless, there are several risk scenarios. **As interest rates grow, the volume of loans reduces due to demand related factors, e.g. a significant halt in economic growth**. This terminates a rise in nominal and real wages and might increase unemployment. The solvency of people deteriorates due to the companies and private persons, who had overestimated their income and thus the loan quality worsens. Besides decreasing prices of collateral arising from a decline in economic activity, rising interest rates and slowing economic growth might also indirectly reduce the prices of collateral through the sales of objects given to the banks as collateral.

If rapid economic development continues and the growth in the loan volume is slowed, the situation can be solved without a crisis. This is so even if the global economy should be hit by a major shock. But if the development is moderate and loan growth consistently very fast and the economy should be struck by a shock, it might cause problems also to the financial sector. But if expectations of future income should not materialise and economic growth is significantly slower, this might lead Estonia to a long and costly financial and economic crisis.

From the economic policy angle, initially it is important to stabilise the growth in the debt burden, maintain fiscal policy with a balanced budget accompanied by strong financial sector supervision. This makes problems more easily predictable and reduces possible costs.

Conclusion

Borrowing is a natural part of economic activity, which allows making necessary investments today while postponing expenditure to the future. How large can a loan be so that the solvency of the borrower would be guaranteed during the whole loan period? If the investment is profitable, there are no problems with repayment: the earnings are sufficient to pay interest and the rest is income that has been earned because of the investment made with the loan. But if the investment is not profitable, interest payments alone might be too large.

Historically, a big loan burden has not been a considerable and direct factor causing a crisis. It should be considered, however, that the debt burden can bring about several adverse effects, including a rise in the real exchange rate of the currency, consumption and investments booms, and real estate and stock market bubbles. This might worsen the macroeconomic situation and cause overall instability.

It should be considered, however, that the debt burden can bring about several adverse effects.

The analysis showed that the crises that have occurred in the countries with large debt burdens have been longer than average and costlier. Thus, debt burden is one of the factors to be analysed in order to secure financial stability.

Rapid growth in the debt burden can be expected also in the following decades. The debt level in Estonia is still considerably low compared to the other EU countries. On the other hand, many investments have to be made in order to secure economic growth. Should economic growth continue and the rise in indebtedness be halted step-by-step, the current debt level would not create problems. However, the dangers associated with debt burden and its growth depend on several macroeconomic factors.