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CONTENTS

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FOREWORD

Real estate prices have been soaring lately in many countries all over the world. The price rise has been especially robust in Estonia. It has been boosted by low interest rates, better access to loans and loose credit standards.

On one hand, the rapid loan growth in Estonia may be considered natural. On the other hand, we should not forget about the related risks. True, the housing market has cooled but the household credit growth is nevertheless strong, as households are taking more consumer credit against real estate collateral. In this context, it is vital that both households and companies are realistic in their expectations.

The present issue of the "Kroon & Economy" describes the developments in the real estate and housing markets and their impacts on the overall economy. Furthermore, factors affecting the saving behaviour of Estonian households are analysed. The issue concludes with an article on the evaluation of developments in the financial sector, since this sector plays an important role in ensuring sustainable economic development.

FACTORS INFLUENCING DEVELOPMENTS IN THE REAL ESTATE MARKET

Angelika Kallakmaa-Kapsta

According to *The Economist*[1], real estate prices have lately grown fast and extensively in many countries. Real estate markets are swarming in the same way in the United States, Great Britain and Australia as well as in France, Spain and China. After the burst of the real estate bubble in 2000 the increase in real estate prices helped the world economy back on feet. *The Economist* raises the question of what will happen when the present real estate boom is over.

Exceptionally rapid price growth can also be noted in Estonia. According to the survey carried out in almost 40 countries and published by Global Property Guide at the beginning of 2007, the strongest real estate price rise in 2006 occurred in Estonia[2].

Comparisons between countries may often be really incomparable; however, we cannot deny the sharp rise in prices in the Estonian real estate market during the last years. According to Statistics Estonia, the total number of notarial real estate transactions remained at the level of 2005 whereas the value of transactions rose by almost a half (see Figure 1).

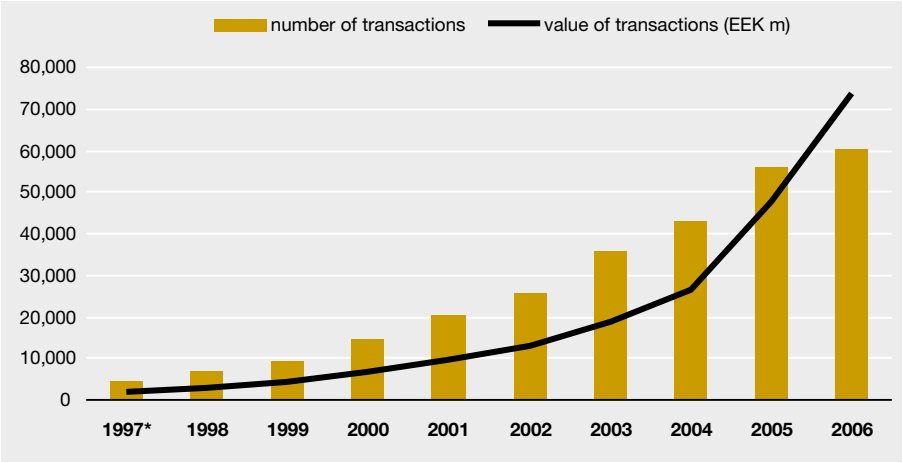

Figure 1. Notarial real estate purchase and sale transactions in Estonia during 1997–2006

Source: Statistics Estonia
* Purchase and sale transactions with buildings, dwellings or non-residential buildings were not registered separately.

[1] *The Economist*, 16/6/2005.
[2] Source: Global Property Guide, 11 January 2007, http://www.globalpropertyguide.com/articleread.php?article_id=80&cid.

On one hand, the price rise is natural since at the beginning of the independence period there was no such term in Estonia as “real estate” and only the privatisation process laid the foundation for the real estate market. On the other hand, it is worrying that real estate prices are rising faster than incomes.

One of the factors influencing real estate prices is undoubtedly the expectations of market participants: expectations of a further price rise, acceleration of economic growth, an increase in wages etc. Moreover, representatives of real estate agencies have boosted optimism in the market that real estate prices can only move upwards. This, in turn, may cause households to increase their current consumption (because they own property and the value of this property is supposedly constantly increasing) in the expectation of a further rise in real estate prices.

Despite our closest neighbour’s, Finland’s sad experience that prices may also fall in the real estate market, our real estate agencies are rather positive than negative as regards further price growth (see Figure 2).

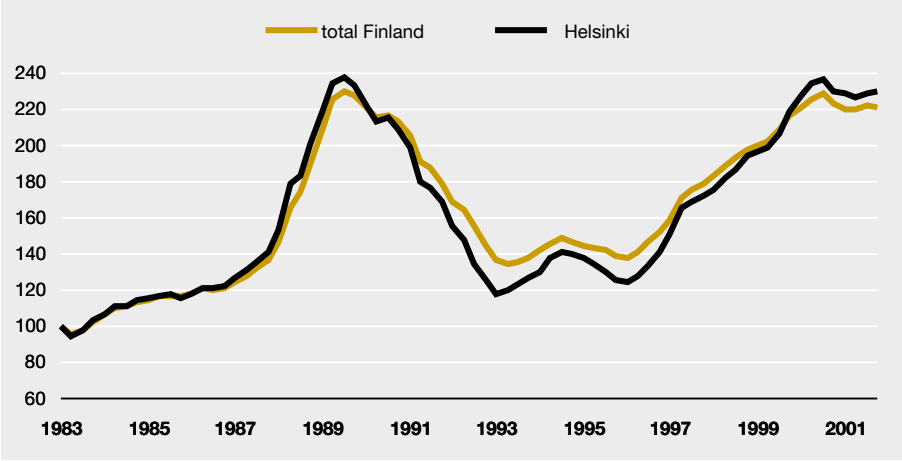

Figure 2. Changes in the real price index of apartment blocks in Finland during 1983–2001 (1983 = 100; by quarters)

Source: Finnish Statistical Office

Theoretically, it is possible to imagine an ideal market where information is equally accessible to everyone, there exists perfect competition and all market participants act rationally. Unfortunately, this is not a reality and therefore we must consider the possibility that market participants need not act rationally and usually lack adequate information for making their decisions.

Terms like “boom” and “bubble” are often used to characterise the situation prevailing in the market. One of the authors most frequently referred to when defining the term “bubble” is Charles Poor Kindleberger.

Kindleberger (1987) defines bubble as a sharp increase in real estate prices that result from the expectations of a further price rise, thus making the property more attempting to new purchasers (especially speculators) who are hoping to cash in on the rise. According to Camerer (1989), a bubble is an object that is growing until it bursts.

Garber (2000) reckons that a bubble is part of asset price dynamics that cannot be explained by key indicators. French (2006) agrees, admitting that a bubble is a situation where it is impossible to fully explain the changes in some prices by means of economic indicators.

Bubbles tend to burst at some point and bring about greater problems. Usually, bubbles have a negative after-effect in the economy.

A sharp price rise in the real estate market need not always be followed by a collapse. However, Helbing[3] who analysed the real estate cycles for 14 countries during 1970–2001 claims that about 40–60% of real estate booms end with a crash.

The term “bubble” is used also in other areas besides real estate. Generally, a bubble refers to a situation where the prices of some property rise unreasonably high during a longer period. In history, the so-called tulipomania serves as an example here, first described by Charles Mackay in his work “Extraordinary Popular Delusions and the Madness of Crowds” in 1841.

The first bubble described in history is said to be related to the price of a tulip bulb when tulip bulbs, brought to the Netherlands, had become luxury goods. At some point the bulbs of Semper Augustus were sold at a price that exceeded the annual income of that time by dozens of times.

Economic bubbles have an effect on consumption habits. In case of a price hike unjustified expectations arise with regard to a further increase in the prices of goods people own and they feel themselves to be more well-off. While expecting a further price rise, they also start consuming more.

[3] T. Helbing. Housing price bubbles – a tale based on housing price booms and busts. 2003.

Suddenly, no one in the market any longer wants to pay that much for a tulip bulb. At the same time, there are plenty of market participants expecting to cash in on the sale of bulbs. The supply is increasing and prices are falling sharply, and a panic may follow. When the bubble has burst and prices are down, instead of feeling well-off the bulb owners now feel being poor.

Coming to the real situation in Estonia, we should first mention the exceptionally favourable economic environment. Like in other Baltic States, Estonia's economic growth indicator has been among the highest in Europe for the last couple of years. In 2006, Estonia ranked second after Latvia among EU countries in terms of growth, exceeding the previous year's outcome by 11.4% in constant prices. The economic growth of EU Member States accounted for 2.9% according to the Eurostat. Obviously, such fast growth cannot continue for a longer period, as also pointed out in the economic forecasts of different institutions.

Another essential factor is the inflow of loan money to Estonian banks and especially the impact of low loan interests. Figure 3 presents the changes in loan interest rates in the housing market for the last ten years.

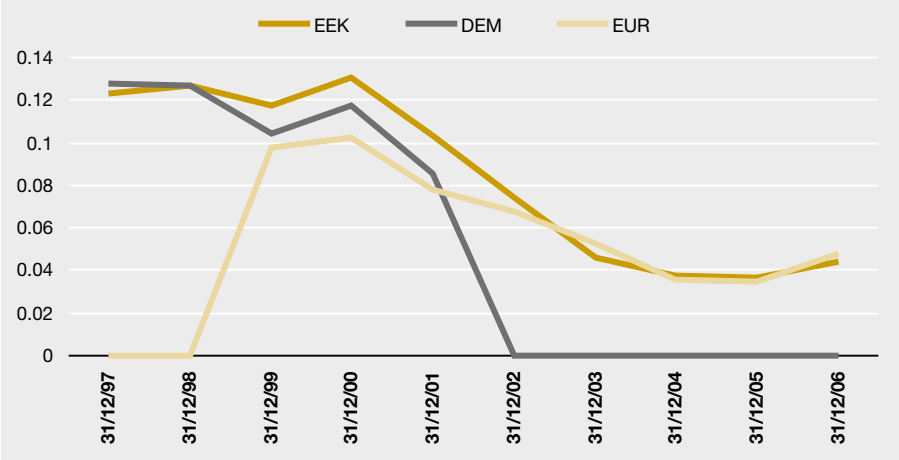

Figure 3. Interest rates on households' housing loans

Source: Eesti Pank

The larger part of loans issued to households consists of housing loans. A sharp fall in interest rates has brought about an increase in the volume of loans granted by banks. The relationship between the volume of real estate loans and interest rate changes is illustrated in Figure 4.

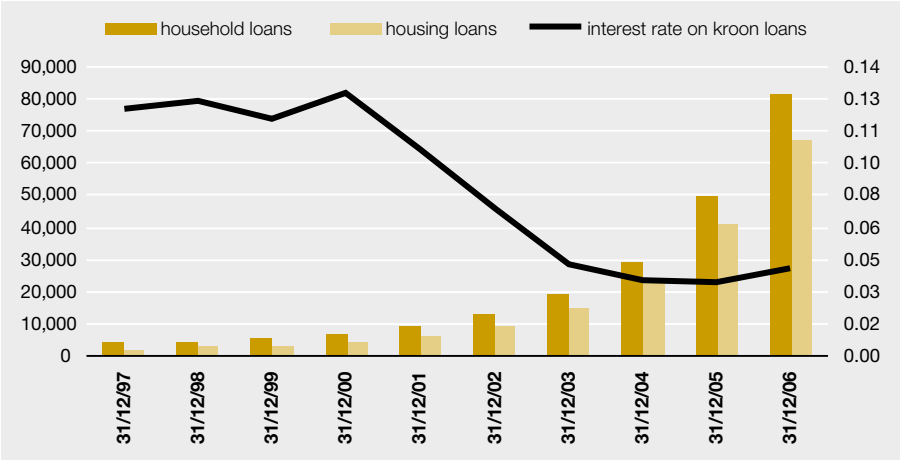

Figure 4. Stock of household loans and housing loans (EEK m; left scale) and interest rate on kroon loans

Source: Eesti Pank

The increase in the volume of household loans can also be described by comparing the loan stocks of households and companies. In 1997, the household loan stock accounted for only a third of the corporate loan stock, whereas at the end of 2006 they were almost equal (see Figure 5).

Government activities have also affected the real estate market. Already the Income Tax Act adopted in 1993 provided for the possibility of deducting housing loan interests from taxable income.

Interference of the public sector at the time when loan interests are high may be considered justified. The above Act, however, created a situation where households with higher incomes who could purchase more expensive real estate benefited the most from the state support. At the time of implementing this measure, loan interest rates were relatively high and thus the state support to people purchasing real estate with loan money was considerable. The positive impact of this Act was that it helped boost the emerging real estate and construction market.

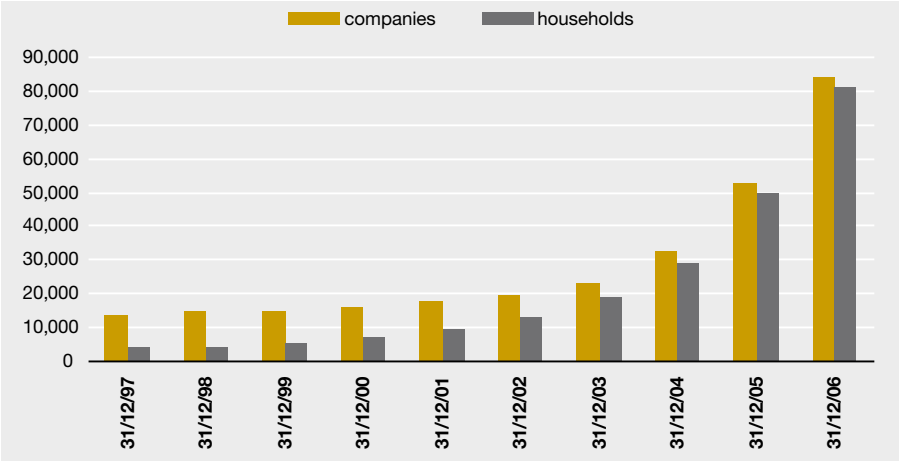

Figure 5. Loan stocks of household and corporate sectors (EEK m)

Source: Eesti Pank

Initially, no restrictions were established on the amount of money deductable from taxable income. In 1999, a provision was added to the Act that the loan or capital lease interests could be deducted from taxable income for only one dwelling at a time. In 2001, an additional restriction was added: the maximum amount deductable from taxable income was 100,000 kroons per one taxpayer. The last decision in that respect was adopted in 2003 but entered into force only at the beginning of 2005. The maximum deductable amount now stood at 50,000 kroons per one taxpayer.

The Government also established a support system to eliminate market failures through the state foundation KredEx. In 1999, Hansapank made a proposal to the Government to partly guarantee the down payment of loans within the framework of the housing programme for young families. This enabled the bank to reduce the required down payment rate, which back then accounted for 30% of the loan sum. KredEx implemented the support scheme in 2000.

Such a decision was very favourable for credit institutions and, at first glance, for borrowers as well. From borrowers' point of view, however, that part of the loan that was bearing the interest increased and often also the maturity extended.

Naturally, finding the required 30% down payment was a serious challenge for young families. But even when the down payment rate decreases thanks to the state guarantee, at the end it is still the young family that must pay back the whole loan amount together with interests, and not the state.

In any case, the introduction of such a guarantee scheme increased access to loans for also those who could not have afford a loan without the state support scheme. Moreover, with this decision the Government provided security to banks and enabled them to earn more interest income on the larger loan amounts issued.

In the initial period of introducing the guarantee scheme the loans guaranteed by KredEx accounted for almost a third of all housing loans. Considering the developments over time, the proportion of loans with collateral in the total amount of loans issued has been constantly decreasing. According to the calculations presented in the yearbook of KredEx for 2005, the share of collateralised real estate loans in total loans issued by banks decreased from 29.4% in 2001 to 5.5% in 2005.

The growth of household loan stock has been boosted by the low unemployment rate and increasing incomes. Comparing the average wage growth with the increase in the average price for a square metre of a two-room apartment in Tallinn, we can see that incomes have increased but the price for a square metre of an apartment has grown several times with the last ten years (see Figure 6).

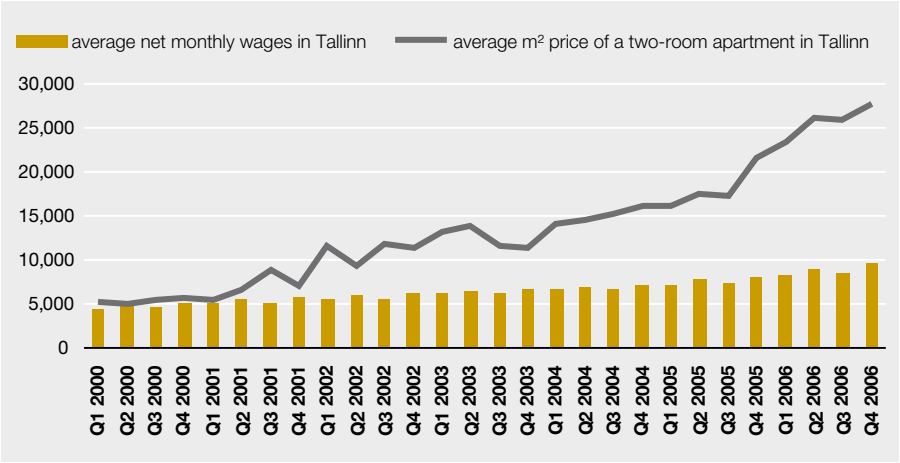

Figure 6. Average net monthly wages and average price for a square metre of a two-room apartment in Tallinn (EEK)

The average rise in apartment prices in Tallinn has been so fast that a person earning average wages is not able to purchase even one square metre of a two-room apartment for a whole net monthly income. Figure 7 illustrates the obtainability of a two-room apartment in Tallinn for a person earning average net wages and shows changes in that ratio during the last five years.

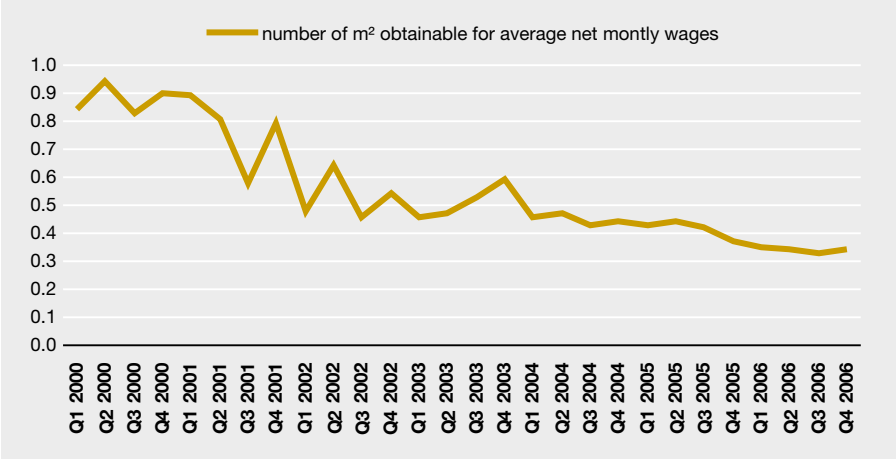

Figure 7. Number of square metres of a two-room apartment in Tallinn obtainable for average net monthly wages

The example of a two-room apartment in Tallinn should describe the situation in the Estonian housing market quite well since, based on the data of the Estonian Land Board for the year 2006 (52.8% of all transactions were done with apartments), 47.3% of all real estate purchase and sale transactions were made in the capital city Tallinn and Harju County, constituting 70.1% of the total value.

During the last ten years the demand for high quality dwellings has continuously exceeded the supply of such premises. The price hike has led to the situation where the area of new dwellings under construction is considerably smaller than in the previous periods. According to Statistics Estonia, the size of dwellings completed in 2002 formed 99 square metres on average, whereas the average area of dwellings completed in 2006 had decreased to 77 square metres. More than half of the new dwellings completed in 2006 were two or three-room apartments.

Since 2006 real estate companies have noted in their market surveys that the sale periods of objects have extended. Some years ago advance reservations were common in case of new development projects and dwellings were often sold before their completion. Now there is a tendency that dwellings are sold during a longer period after the completion of the building.

Earlier there used to be enough buyers also for apartments in satisfactory or medium conditions, whereas the trend noted at the end of 2006 showed that preference was given to flats in a very good condition that needed no substantial additional investments. This trend may have arisen from the increase in construction costs and shortage of qualified labour.

People also prefer to buy flats where they can move in immediately since usually they have to move out from the previous dwelling in a relatively short period. The sale period of apartments in satisfactory condition has extended too.

To promote sale, real estate purchasers and developers now have to organise frequent client days and offer different additional bonuses, such as kitchen furniture free of charge etc. Apparently, the time of speculation in the secondary market is over, at least for a while.

According to the state register of construction works 5,068 new dwellings were completed in 2006, i.e. 1,140 dwellings more than a year before. Three quarters of the completed dwellings were located in apartment blocks, the most common type being a three to five-storey building. The continuous increase in the share of dwellings located in apartment blocks within the last years has brought about a decrease in the average area of dwellings. In addition, more and more new dwellings are being built in rural districts neighbouring major cities.

The supply of new and high quality dwellings has still been relatively small so far, but the number of building permits issued has grown, referring to a possible increase in supply in the housing market (see Figure 8).

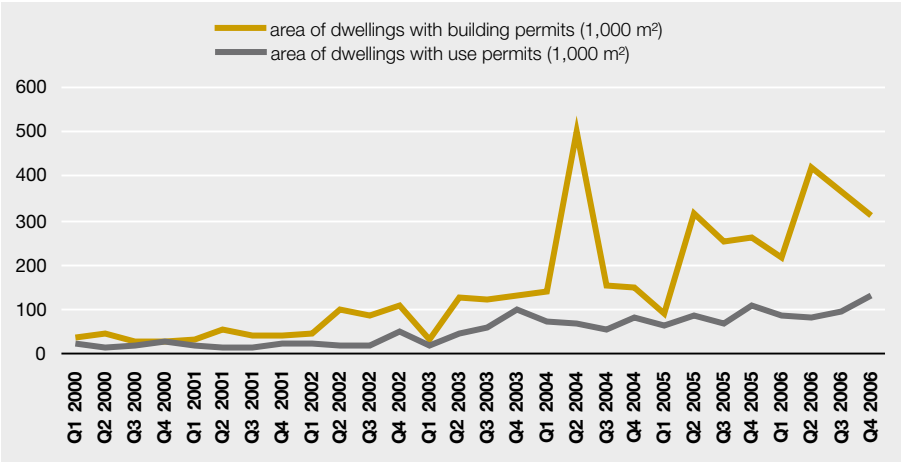

Figure 8. Dwellings with building and use permits in Estonia

Source: construction register of Statistics Estonia

Since the supply has grown and sale periods have extended, there is no need to rush when it comes to purchasing real estate. Therefore, potential buyers look over several flats before deciding. For example, as regards the centre of Tallinn real estate companies note in their surveys that

people prefer apartments with additional values, often disregarding the somewhat higher cost. According to the Estonian Land Board, in 2006 most of the purchase and sale transactions in Tallinn were made with dwellings situated in the residential area Lasnamäe (25% of all transactions) and in the centre (21.8%).

According to Statistics Estonia, almost 63,000 notarial purchase and sale transactions with real estate, movable property or building lease were made in 2006. Transactions with apartments formed 54% of them. Over half of all purchase and sale transactions were concluded at notary's offices in Tallinn; the value of contracts signed in Tallinn accounted for 78% of the total value of real estate transactions.

As mentioned above, the total number of transactions did not increase considerably in 2006 compared to the previous year. However, the share of long-term loans granted to legal persons in the real estate sector in the total loan volume seems to have grown (see Figure 9). Therefore, construction companies and developers, especially small enterprises operating in real estate development, should be worried about the possible cooling of the real estate market.

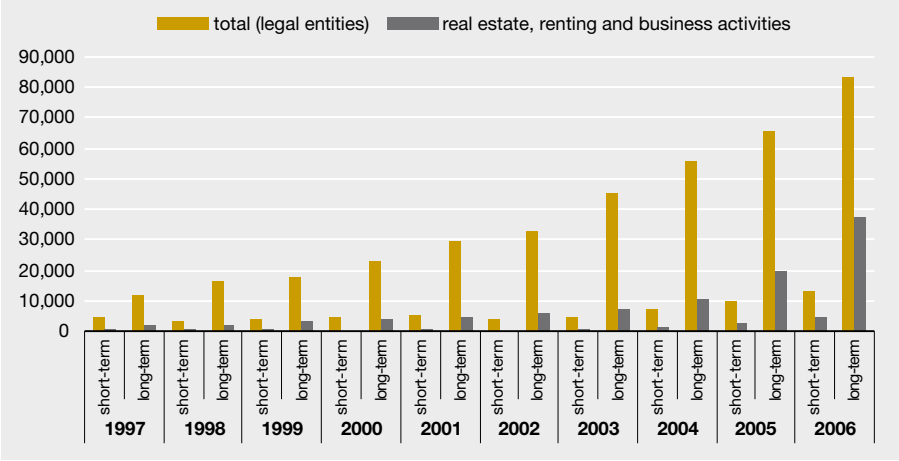

Figure 9. Volume of loans issued in the real estate, renting and business activities sector among loans issued to legal persons (EEK m)

Source: Eesti Pank

If bank customers have any problems with loan repayments, in the longer perspective these problems might become the bank's problems, especially if there are a lot of such customers.

In that case, the real estate used as loan collateral may succeed to the ownership of the bank to cover the unpaid loan.

The real estate collateral or the mortgage is traditionally considered the most secure form of a loan guarantee. Therefore, it is not surprising that the majority of loans issued by credit institutions are mortgage-backed. Most people take a loan for purchasing new housing and usually the real estate acquired is used for collateral. The share of mortgage loans is shown in Figure 10.

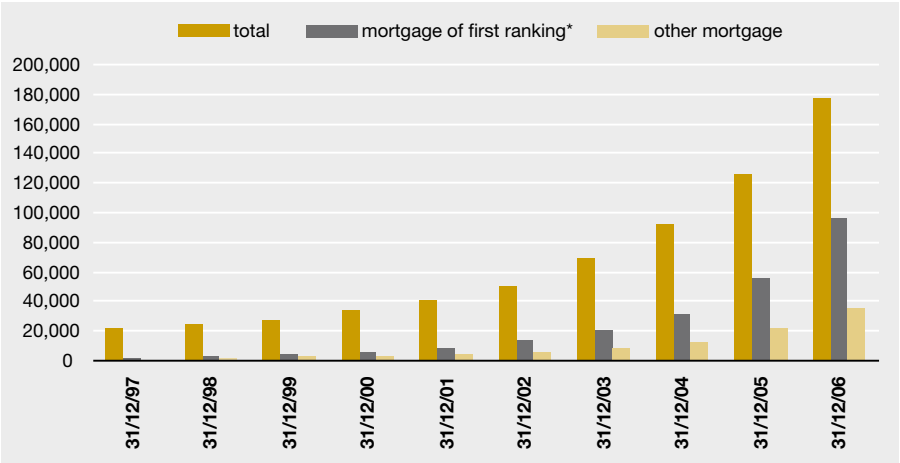

Figure 10. Share of mortgage loans in total loan stock (EEK m)

Source: Eesti Pank
* Mortage registered with first ranking in the Land Register

The financial liabilities of Estonian households often exceed their financial assets; liabilities mostly stem from purchasing real estate. The ratio of household loans to GDP has been constantly rising.

The situation might become problematic when along with falling real estate prices loan-takers start having difficulties with servicing their loan. The above-mentioned gap between the average income and the average cost of a square metre is certainly a sign of danger.

Changes in the external environment must also be taken into account, not to mention the decision of the European Central Bank of 8 March 2007 on raising the key interest rate to 3.75%, which is the highest level in the last five years. Loan-servicing costs increase for loan-takers and it is

highly likely that the potential further rise in interest rates makes them cut down on their current expenses.

The surveys compiled by the Estonian Land Board does not support the claim that foreigners are buying real estate in Estonia. The first time statistics on market participants was available was for 1998 when in the first half-year there were only 4 foreign purchasers and 29 sellers in the market. In 2004, foreigners accounted for 8.4% of the buyers with the share of 4.6% in the total value of transactions. It should also be mentioned that most of the transactions were made in Ida-Viru County (in Eastern-Estonia) and mainly with apartments. Thus, it can be concluded that purchasers were most probably locals who did not have Estonian citizenship.

In 2006, the share of foreigners among purchasers was 9.2% and their transactions formed 6.1% of the total value of transactions. The proportion of foreigners among sellers had slightly increased: in 2004 there were 6.7% of them, whereas in 2006 the respective figure was 7.2%.

As regards the regulatory framework for loan activities, stricter capital requirements to real estate loans valid since spring 2006 and the amendment to the Credit Institutions Act, which obliges credit institutions to inform clients about the potential risks related to loan-taking to protect them, can be highlighted as positive developments.

CONCLUSION

Recent developments allow to conclude that the supply-demand ratio is stabilising. Housing purchasers have started to pay more attention to the quality and location of real estate and take time to decide upon the purchase. The sale periods have extended as well.

At the same time, it should be taken into account that a further increase in the cost of loan resources will put an additional pressure on the households that have already taken a loan. A large part of the population cannot afford buying a new housing any longer because of the high real estate prices. History has shown that not every boom – but undoubtedly a significant part of real estate booms – has ended with a crash.

Should the rise in real estate prices still continue in Estonia, there will definitely be more social strains in the future as there will be a lot of families not able to buy a new housing. The market is already showing signs of a possible price adjustment. The question rather is what is the volume and extent of such adjustment.

HOUSING FINANCE IN ESTONIA: A SHORT NOTE ON RECENT DEVELOPMENTS

Mari Tamm

Housing finance has experienced rapid development in Estonia during 2000–2006. In a very open economy with strong macroeconomic policies and the ultimate goals of accession to the European Union and the Economic and Monetary Union, the necessary environment for financial deepening was created already before the year 2000. From the initially very low levels of financial deepening the steady decrease in interest rates and improved credit conditions have boosted household and corporate sector borrowing, which has been strongly supported by foreign funding. As a result, household debt has increased almost five times from the level of 15% in 2000 to the level of 74% of net disposable income in 2006. Improved availability of credit has brought along a robust development in the residential property market where prices doubled during the three years between mid-2003 and mid-2006 and started to level off after that.

The present article aims to provide a short overview of recent housing finance developments in Estonia as well as indicate the main determinants and major implications of these developments.

Section 1 offers an overview of recent developments in the housing finance market. In Section 2 the underlying factors responsible for the direction of last years' developments in the housing finance market are discussed in short. Section 3 deals with the potential implications of these developments for the whole economy as well as the financial sector. Section 4 discusses policy issues that arise in connection with housing finance developments.

DEVELOPMENTS IN HOUSING FINANCE MARKETS

Household debt

Household borrowing in Estonia entered into an active development phase in 1999–2000 in the aftermath of the Russian crisis when large Scandinavian banking groups acquired several of the larger Estonian financial institutions. Initially, banks remained cautious towards the corporate sector and mortgage loans became their main product. During that period the competition for market shares started to intensify. By the end of 2000, the annual growth rate of household credit exceeded 40%, reaching even higher levels during the following years. Starting from 2000, household debt has experienced rapid growth. The ratio of household debt to GDP rose from 8.5% to 41% by the end of 2006 (see Figures 1 and 2). The ratio of household debt to disposable income went up from 15% to 74% by the end of 2006 (see Figure 3 and 4).

Initially, mainly these housing loans, which credit institutions considered to bear a relatively low risk while providing stable long-term cash flows, contributed to the rapid growth of household debt. In the second half of 2005, banks started to offer consumer loans actively as well, which has brought along a rapid growth in loans not directly related to housing. However, their share (including consumer loans) in the total stock of household debt has not increased owing to the low volume of these loans (less than 9% of GDP at the end of 2006).

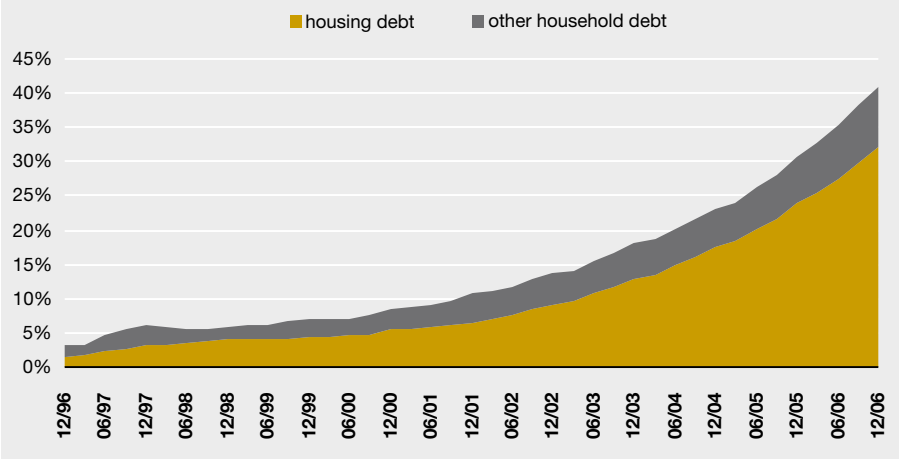

Figure 1. Household debt as a percentage of GDP

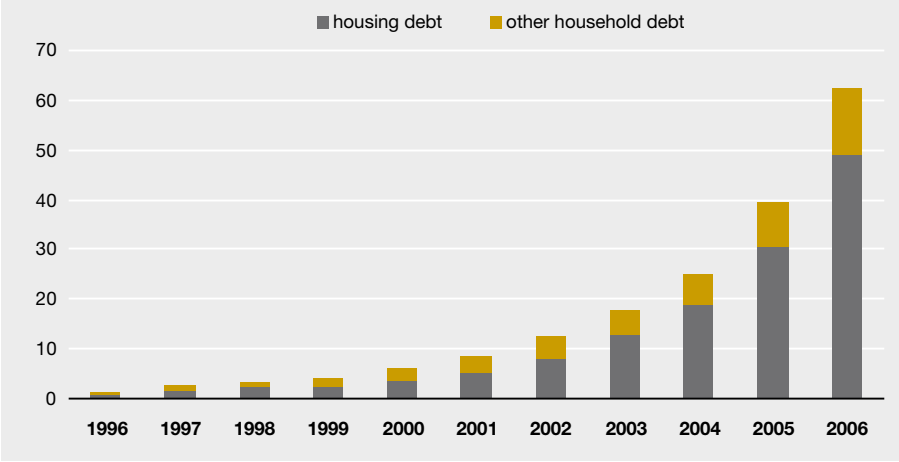

Figure 2. Household debt per capita (EEK thousand)

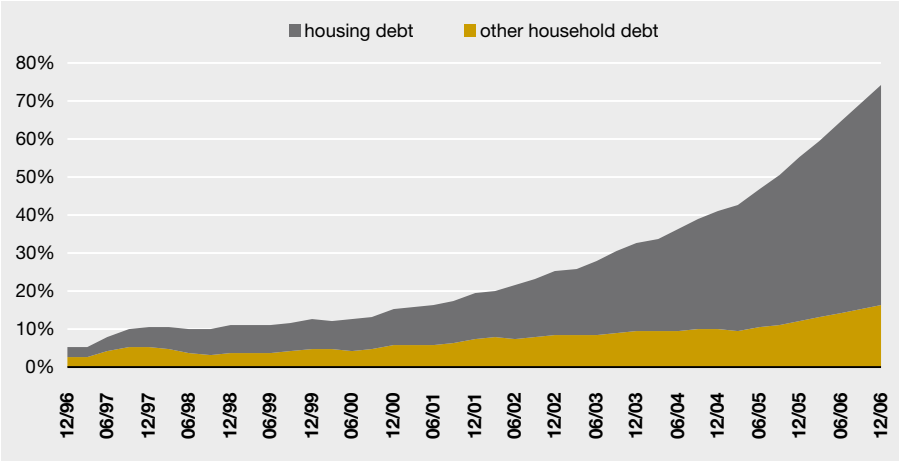

Figure 3. Household debt as a percentage of net disposable income

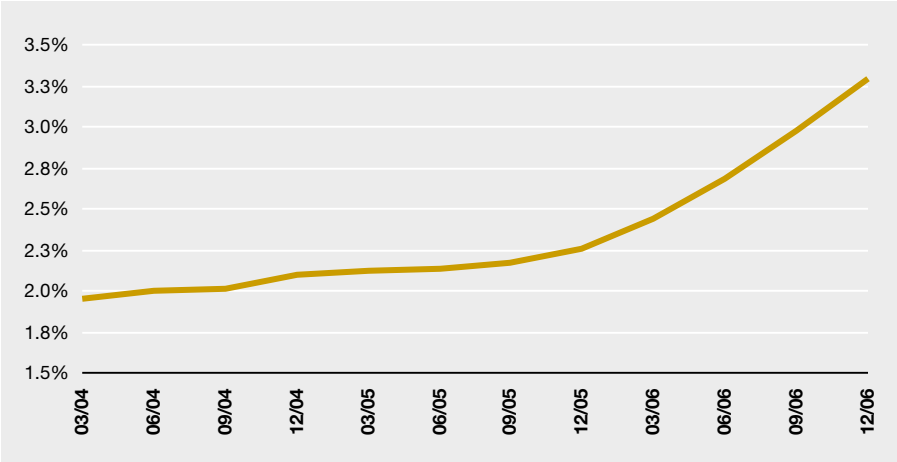

Figure 4. Housing debt service costs as a percentage of net disposable income

Because of Estonia's credible currency board arrangement with an exchange rate fixed to the euro and strong investor confidence in sustained economic convergence, retail interest rates have followed quite closely the euro area interest rates. Declining euro area interest rates and intense competition in the banking market brought the average interest rates of housing loans down from the level of 11.2% at the end of 2000 to 3.1% at the bottom of the interest rate cycle in the middle of 2005. Therefore, debt service costs in ratio to disposable income have grown at a slower rate than debt.

Although household financial assets have expanded at a growth rate of over 20% annually during the previous years, the growth rate of household debt has been even faster and the ratio of household net financial wealth to disposable income has declined during this period (see Figure 5). The share of cash and deposits has decreased and that of other financial assets, such as equities, insurance, investment and pension fund assets, have increased in the structure of household financial assets.

According to household budget surveys carried out by the market research company TNS Emor, the debt is not evenly distributed among households and the bulk of household debt burden is born by households with highest incomes, who presumably also hold the largest share of financial assets.

Residential property prices

Residential property prices have increased in line with the growth of household debt (see Figure 6). The average price of a dwelling in the suburb area of Tallinn, the capital, has reached five times the level of 2000 by 2006. Due to the low level of household savings residential property market developments are largely determined by developments at the housing finance market. For example, residential property prices especially took off in 2004 when banks started to loosen credit terms and conditions by lengthening repayment periods and lowering minimum down payment requirements, which enabled potential customers to take out larger amounts of credit.

Lenders

Estonian financial sector is dominated by commercial banks and the banking sector is a hundred per cent privately owned. Majority of household lending is provided by commercial banks. Leasing provided by bank-owned leasing companies also used to be an important channel for acquiring residential property during the initial development stages of housing finance, but the importance of that has declined in the course of time. In 2006, the share of leasing fell to 1% of total housing lending. The majority of the banking sector is foreign-owned (94% of equity capital) and highly concentrated (C4 stands at 96% and C2 at 78% in terms of total assets[1]). This applies also for the housing finance market – the four largest banks account for 97% and the two largest banks for 75% of the market.

[1] C2 and C4 represent the sum of the share of the assets belonging to two of the four largest banks, respectively, in ratio to the total assets of the banking sector.

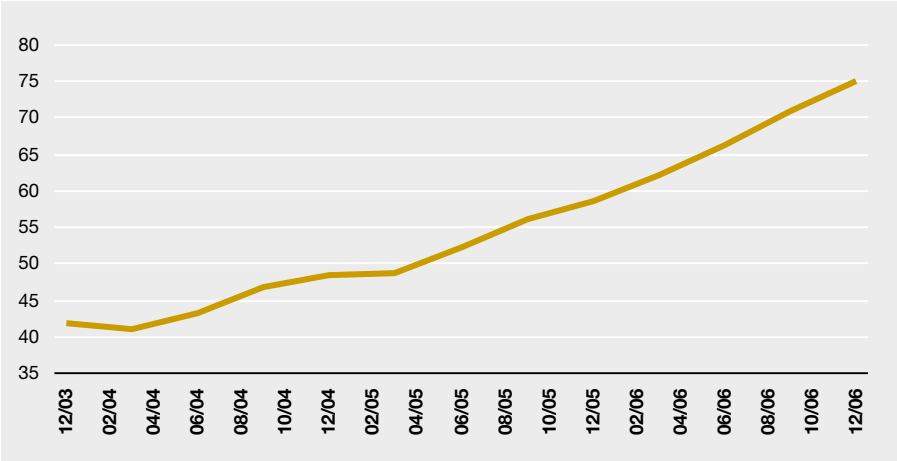

Figure 5. Household debt as a percentage of financial assets

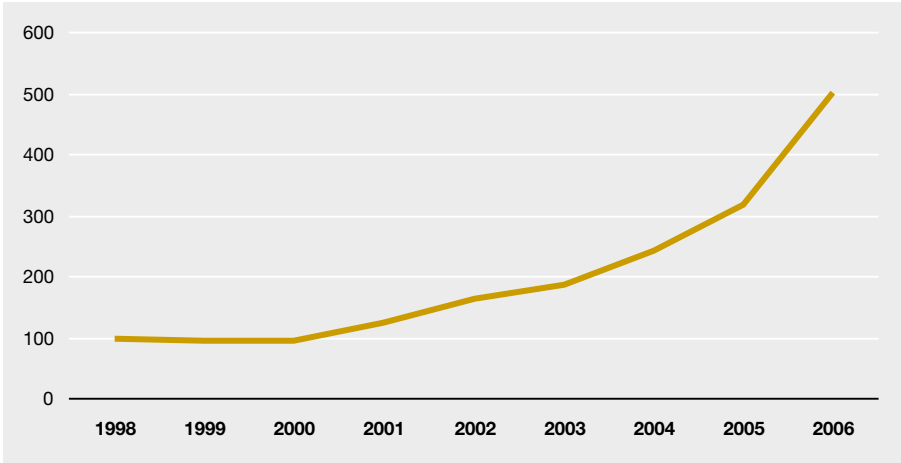

Figure 6. Residential property prices (1998 = 100)

Source: Statistics Estonia, nominal property prices less CPI

Loan types and contract features

The history of the housing finance market in Estonia is relatively short. For the most part, borrowers have experienced only falling interest rates and borrowing with a flexible interest rate has brought along lower debt service costs in the next period. Therefore, the majority of housing loans are variable interest rate loans linked to the EURIBOR with fixation periods of six months up to one year or alternatively to a bank's individual euro prime rate. Credit institutions have started to offer fixed interest rate products more actively after the turn of the interest cycle. However, the interest in these products has remained modest, but it is increasing.

Regarding product innovation, instruments that enable home equity withdrawal[2] and savings mortgages have been introduced to the market in recent years. Loans that enable home equity withdrawal have gained in popularity as residential property prices have grown. However, savings mortgages that are mainly targeted to benefit from tax advantages for long-term savings products have not become especially popular yet.[3]

According to the law, early prepayment of any loan is in most cases allowed. The loan contract involving a variable interest rate may be cancelled at any time by giving three month's notice. There are no legally binding limits for the prepayment fee. According to the law, the additional costs caused to the lender by early prepayment must be borne by the borrower. In case of obligation involving a duty to pay interest, the lender has the right to claim interest for the remaining repayment period until the original due date. In standard terms and conditions of mortgage contracts, however, it is customary to set a fixed amount for prepayment fee.

Regarding other credit terms and conditions, the extension of maximum repayment periods from the previous 20 years up to 30 years has enabled households to take higher amounts of credit without increasing their monthly repayment. The effect of this adjustment may be witnessed from the acceleration of the growth rate of housing debt in the second half of 2005, when the share of new housing loans granted with the repayment period of more than 25 years increased from 38% to over 50% by the end of the year. In addition, there has been a trend towards lower minimum down payments that has also enabled customers to take larger amounts of credit.

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[2] Home equity withdrawal takes place when households increase their borrowing against their housing assets for uses other than acquiring housing property.

[3] Savings mortgage is a mortgage loan that is combined with endowment insurance guaranteeing also life insurance (life insurance that pays the face amount of a policy when the insured party dies or at the end of a contractual period). During the life of the loan, a customer is obliged to repay only the interest of the loan and the insurance premium. The repayment of the principal of the loan will be made upon the expiry of the loan term by the insurance company. Monthly payments will earn interest during the life of the loan, and guaranteed interest and additional interest on the additional profit of the company.

Funding and financial markets

The recent rapid growth of household debt has been significantly supported by funding provided by the parent banking groups of the major credit institutions operating in Estonia, although domestic deposit growth has also been solid. Institutional borrowing including funds from parent banks and borrowing from the international markets constitutes approximately 40% of credit institutions' total liabilities.

FACTORS THAT HAVE CONTRIBUTED TO THE RECENT DEVELOPMENTS

Without presuming to offer an exhaustive analysis of all the different factors that have had an impact on the recent developments in housing finance in Estonia, the present article aims to point out the most important ones combining both demand- and supply-side factors.

(1) Decrease in average interest rates:
Due to the decrease in euro area interest rates setting the base for interest rates in Estonia, lower average interest margins resulting from a decrease in risk premiums and strong competition in the banking sector, the average interest rate on housing loans fell from 11.2% at the end of 2000 to 3.1% in the middle of 2005 (at the bottom of the interest rate cycle).

(2) Improved availability of credit, better terms and conditions:
The availability of credit has been enhanced by virtue of extension of maximum repayment periods from the previous 20 years up to 30 years and the lowering of minimum down payment brought about by intense competition.

(3) Increase in net disposable income:
Due to an increase in gross wages, a decrease in personal income tax rates and a rise in the tax-free minimum income level, the net disposable income of the household sector has more than doubled during the period from 2000 until 2006.

(4) Improved availability of foreign funding for credit institutions:
Rapid growth in housing loans has been significantly supported by foreign funding provided by non-resident parent banks of large banks. Parent banks are interested in increasing their market share in Estonia as the local market offers considerably higher interest margins compared to mature markets.

(5) Expectations related to the EU and euro area membership:
Becoming a member of the EU and perspectives of joining the euro area have contributed to the increase in the credibility of the economy, bringing along a decrease in risk premiums. Optimistic expectations towards future earnings as well as the future rise in property prices have given an extra boost to the growth of housing loans and residential property prices.

INCENTIVES PROVIDED BY PUBLIC AUTHORITIES

Regarding government incentives to the housing finance market, interest payments for a loan or finance lease taken in order to acquire a house or apartment are personal income tax deductible. The maximum amount of all deductions allowed per year was decreased from 100,000 EEK to 50,000 EEK as of 1 January 2005. Against the background of falling debt service costs, the impact of the tax deductibility of interest payments on the demand of housing loans has diminished.

Moreover, a fund named KredEx with the objective, among others, to support bank and leasing financing of home purchase and renovation via providing a guarantee has been operating under the jurisdiction of the Ministry of Economic Affairs and Communications since 2001. Initially, loan guarantees were very successful – guaranteed loans accounted for 29% of the housing loans granted in 2001. Over the next few years the terms and conditions of bank credit improved and the demand for KredEx's guarantees on the mortgage credit market decreased. In 2006, only 2.8% of the housing loans granted were guaranteed by KredEx.

IMPLICATIONS OF RECENT HOUSING FINANCE DEVELOPMENTS

Macroeconomic implications of rising household debt

Rapid credit growth in a convergence economy should be seen as a positive phenomenon as corporate sector and households with low level of savings are able to invest and consume out of their expected future income. In case of converging economies the indebtedness of the economy is initially underdeveloped, well below the level perceived to be justified by the fundamentals. Rapid credit growth is mainly a reflection of a process of financial deepening. However, when the indebtedness of the economy exceeds the fundamentally justified level, credit growth may be considered excessive and potentially risky.[4]

The macroeconomic implications of rapid growth in household indebtedness are centred around concerns about the possible deterioration of the households' ability to service debt under worsening economic conditions. In case a rapid credit growth is fuelled by inflows of foreign savings, rising indebtedness may bring along a sudden shift in expectations and increase in risk premiums.

Regarding the macroeconomic implications of residential property prices, according to a recent study by Eesti Pank[5], the wealth effect manifested by the long-term marginal propensity to consume out of housing wealth is relatively low: 1.1% of the change in real estate value.

[4] Although many recent studies have offered several approaches to determine the optimal or fundamentally justified level of indebtedness, there is no commonly accepted method yet.

[5] Paabut, A., Kattai, R. (2007) "Does the Increase in Housing Value Influence Private Consumption in Estonia?" Working Papers of Eesti Pank, 5/2007 (currently in Estonian only).

This can partly be explained by the fact that the majority of residential property is owner-occupied and the share of credit-eligible households is relatively small.

Implications and risks for financial institutions

According to the financial accelerator theory, economic agents tend to take a somewhat overoptimistic view of the economic prospects when the economy is improving. That could lead to overly optimistic valuations of collateral and consequently higher amounts borrowed. During the downward phase of the business cycle, the expectations are adjusted and the valuations of the collateral and the demand and supply for loans decrease. The optimism of lenders and borrowers during the upward phase of the business cycle may receive an additional boost from intensified competition between credit institutions (that has been the case in Estonia). The result, in this case, may be a further loosening of the terms and conditions of credit, leading to an increase in risk taking for financial institutions.

The fact that the majority of the housing loans outstanding are variable interest rate loans means that households are all the more vulnerable to increased debt service costs. Stress-tests, however, have indicated that the effects of an increase in interest rates on household debt servicing ability are moderate. This can be explained by the fact that households that have taken a housing loan are in higher income brackets with a high level of net financial assets. However, stress-tests also show that households that have taken a loan in the recent 12 months are the most vulnerable to shocks. That might be seen as a possible reflection of looser loan terms and conditions and higher risk taking by credit institutions.

Still, current indicators of credit quality are at their historical best and credit institutions seem to be adequately capitalised to absorb losses from a potential worsening of credit quality according to the stress-tests. The aggregate capitalisation of the banking sector reached the level of 13.1% at the end of 2006 (in Estonia, the capital adequacy requirement is 10%), whereas the share of loans overdue for more than 60 days is 0.3% of total loans, which are 1.5 times covered by credit loss provisions.

POLICY ISSUES

Eesti Pank has been closely monitoring credit developments to prevent the inevitable risks related to real and nominal convergence in the financial sector and the mortgage market. On two occasions, in 2003 and 2004, the central bank together with the Financial Supervision Authority reminded credit institutions also formally of the potential risks related to rapid credit growth. In 2005, the risk weighting applied to housing loans was increased from 50% to 100% as of 2006. As an additional measure, in July 2006 the reserve requirement was increased from 13% to 15% as of 1 September 2006. Possible risks to macroeconomic and financial stability are

further mitigated by the broadly appropriate fiscal stance. The Estonian Government has achieved sustained and significant budget surpluses for six consecutive years.

Since the second half of 2006, the housing finance market has been showing some signs of stabilisation. Against the background of high price level reached, the demand for residential property has decreased and the growth of residential property prices has started to slow down, and so has the growth of housing loans. Furthermore, credit institutions have developed a less optimistic approach towards the future potential of the housing finance market, which means that the credit terms and conditions for residential property development firms are tighter now. However, the reflection of that may probably be witnessed more clearly from the statistics starting from the second half of 2007.

FACTORS AFFECTING HOUSEHOLD SAVING BEHAVIOUR IN ESTONIA*

Dmitry Kulikov, Annika Paabut, Karsten Staehr

INTRODUCTION

This article focuses on the saving behaviour of Estonian households[1]. The analysis is important for a number of reasons. First, household savings potentially comprises a substantial contribution to national savings and thus an understanding of household saving behaviour helps to explain macroeconomic performance. Second, even though saving behaviour has been analysed in several developed countries, relatively little is known about saving behaviour in transition countries[2]. Third, Estonia, along with other fast-growing countries in Central and Eastern Europe, has substantial current account deficit. This raises the issue of sources of these deficits and whether they are sustainable over time[3]. Fourth, household saving and the factors affecting it are important for financial stability and is itself affected by credit availability and financial conditions[4]. The resilience of the household sector to income and financial shocks depends on the accumulation of resources in the sector.

The literature on household saving provides several theoretical approaches and hypotheses that seek to explain household saving behaviour. Browning and Lusardi (1996) identify nine reasons or motives, of which eight had already been mentioned by Keynes in 1936:

- the precautionary motive,
- the life-cycle motive,
- the intertemporal substitution,
- the improvement motive ("save to make consumption increase over life-time")
- the independence motive ("save without any well-defined risks"),
- the bequest motive,
- the avarice motive ("accumulate in sake of accumulation"), and
- the down payment motive.

The motives above rely on the assumption that households have access to means of saving and dissaving. In practice, the absence of such means may affect the decision to save and this may be actually the principal underlying reason for non-existent or scarce savings. In addition, liquidity constraints may prevent households from borrowing when desired which again means that households may find it difficult to adjust consumption over time – they might not be credit-

[1] In this article, the terms "private household" and "household" have been used as synonyms. In the Household Budget Survey carried out by the Statistical Office the latter has been defined as a group of persons residing in one principal residence (at common address) using common monetary and/or food resources whose members acknowledge themselves as belonging to one household. Also a single person can make up a household.

[2] See also Attanasio and Banks (2001).

[3] See also Kutos and Vogelmann (2005).

[4] See also the International Monetary Fund (2005, Chapter 3).

* The article is based on Eesti Pank's 2007 publication, *A Microeconomic Analysis of Household Saving in Estonia: Income, Wealth and Financial Exposure* (authors Kulikov, Staehr and Paabut).

worthy, thus they might not be able to borrow when necessary so as to consume more today at the expense of the future. Hence one can say that households' saving behaviour is determined by the combined effect of two different motives – the motive to save and the possibilities for intertemporal allocation by e.g. the financial system.

Since several of the above-mentioned motives are complementary, it is difficult to identify and separate the relative impact of each motive on overall household saving. A second complication is that saving may depend on such unobservable factors as perception of future income and/or income uncertainty. The perception of future income has a relatively large impact on household saving. If one believes that his/her income is going to increase significantly in the future, saving today is less extensive because the confidence regarding the future financial situation is high. However, if a household feels uncertainty regarding future incomes (e.g. possible unemployment), saving may account for a significant part of the household's income. This, in turn, means that estimating saving behaviour sets many requirements to the data used for that purpose. Namely, this requires different indicators, which are hard to obtain (e.g. the monetary value of the overall wealth of a household; the value of real estate and/or other assets owned by a household).

Owing to the fact that the working paper the article is based on relies mainly on macroeconomic indicators published by Statistics Estonia and Eesti Pank as well as on the data received through the Household Budget Survey, restricts the analysis of saving behaviour in many ways. First, we are dealing with cross-section data – households are viewed at one point in time, not across several years. Dataset covers years from 2002 to 2005 and the survey was conducted throughout the year and this may indicate that household expenditure in June may significantly differ from that in December or January being thus difficult to compare. Therefore, extraordinary expenditure was excluded from the survey.

Also the period studied (2002–2005) can be considered problematic. This was a time of rapid economic growth with favourable labour market conditions. Consequently, people were also generally more optimistic than at times of economic recession. This article makes use of the most recent surveys, covering the period from 2002 to 2005. Earlier surveys covering the period before 2002 relied on different data collection methodologies, making it difficult to compile comparable datasets to carry out empirical analysis.

The main limitation of the Household Budget Survey from the perspective of this paper is the absence of detailed information on household wealth in monetary terms. In particular, there is little information in the survey about the financial wealth of households in the form of saving accounts, financial investments, accumulated pensions and other types of wealth. Where available, such variables are restricted to some pre-specified intervals, making it difficult to assess the precise value of assets. Indicators of non-financial wealth (e.g. real estate ownership and different types of durable

goods) are available, but monetary valuations of these assets are not collected. Along the same lines, the information on different types of household liabilities is partial and at best limited to interval assessments. The survey also lacks data on changes in the stocks of monetary and non-monetary household wealth during the interview month, including changes in housing wealth, capital gains, accumulated pension savings etc.

The above-mentioned problems are not unique to Estonia – problems with data are quite common in advanced economies as well. Hence, it is not surprising that empirical literature has yielded just a few stylized facts[5] describing the comparative significance of saving motives. It is much easier to establish the impact of different household-related features (e.g. the number of household members, education of the head of the household, etc.) on the marginal propensity to save[6]. Analyses based on the data collected in the United States and most developed countries lead to several regularities[7]. For example, it has been shown that saving exhibits hump-shaped relationship with respect to age: young people save generally less while the middle-aged save more compared to other age groups, whereby older people use their savings for financing consumption. Models of intertemporal choice predict that households save more if they receive higher income (in particular if the income shock is temporary), if future income becomes more uncertain or if stocks of accumulated net financial and non-financial assets increase. In addition to variables like income, income shocks, wealth and financial exposure, saving preferences generally also depend on a range of characteristics such as the size and composition of the household as well as age and education of household members.

As indicated above, household saving in advanced and transition economies has only been analysed in a few microeconometric studies. Studies covering developing countries have revealed that variables such as income and wealth play an important role in determining household saving. Measures for financial deepening and international financial integration affect the saving propensity positively and play a more important role in developing economies than in high-income countries[8]. This may suggest that liquidity constraints are particularly important in the former. The propensity to save in transition economies may also be influenced by negative past experience – savings lost through hyperinflation, etc.[9] Moreover, saving in transition countries is influenced by regime changes, i.e. elimination of compulsory saving.

Summarising the content of relevant literature, one can say that household saving behaviour in transition countries may be affected by past experience, current macroeconomic conditions as well

[5] Empiric regularity that actually might not apply always and at all times, but still comprises some relevant characteristics and contributes to describing general changes in the economy.
[6] Marginal propensity to consume gauges how much of each additional kroon earned households spend.
[7] See also Browning and Lusardi (1996), Potebra (1994).
[8] Schmidt-Hebbel et al. (1996), Murodoglu and Taskin (1996).
[9] Denizer and Wolf (2000).

as the development of the financial system. The following article will shortly cover earlier studies, followed by a brief analysis of macroeconomic factors and, finally, the principal results of the study carried out by the authors will be introduced.

FACTORS AFFECTING HOUSEHOLD SAVING BEHAVIOUR IN TRANSITION COUNTRIES

Household saving behaviour has been covered in several studies at the micro level, but there is very little information about transition countries and the number of respective studies is limited. Denizer et al. (2002) use mid-1990s household budget data from Bulgaria, Hungary and Poland and show that saving is a positive function of income but is not affected by the source of income (i.e. entrepreneurship, income from employment). They also indicate that saving is higher in case of households that did not own a home or selected consumer durable goods (refrigerator, car, etc.), possibly because households without credit access save to buy these items. Such a result may refer to liquidity constraints or to the development stage of the financial system. Unemployment does not affect saving behaviour. Guariglia and Kim (2004) use a panel of Russian households to test the precautionary saving hypothesis. Their measure of earnings uncertainty significantly increases household saving, although only for households where the head holds merely one job.

The fact that unemployment does not affect saving in transition economies seems quite odd, since the unemployed should use their existing savings (the savings should appear with negative sign) to cover their consumption costs. However, if households believe that there is a risk of unemployment in the future, saving should increase[10].

According to Guariglia and Kim (2004) the middle-aged save less than the elderly and the young, which contradicts the life-cycle theory as well as the results of surveys covering advanced economies. According to these, it is the middle-aged households, whose income is presumably the highest, that should save most. This is also confirmed by a study by Foley and Pyle (2005), which also reveals that households seem to use savings for mitigating temporary income shocks. Meanwhile, ownership of larger household items (e.g. refrigerator, washing machine) leads to less saving, which means that households save with the purpose of purchasing these items.

Let us return to the relationship between the development of the financial system and household saving behaviour. It has been shown that in transition countries, financial deepening leads to a simultaneous increase in both assets and liabilities.[11] Therefore, one should note that the development of the financial system affects household behaviour in transition countries more than in advanced

[10] However, the studies quoted have not applied such a forward-looking approach mainly because of the absence of information of households' perception of the future.
[11] Ganelli (2006).

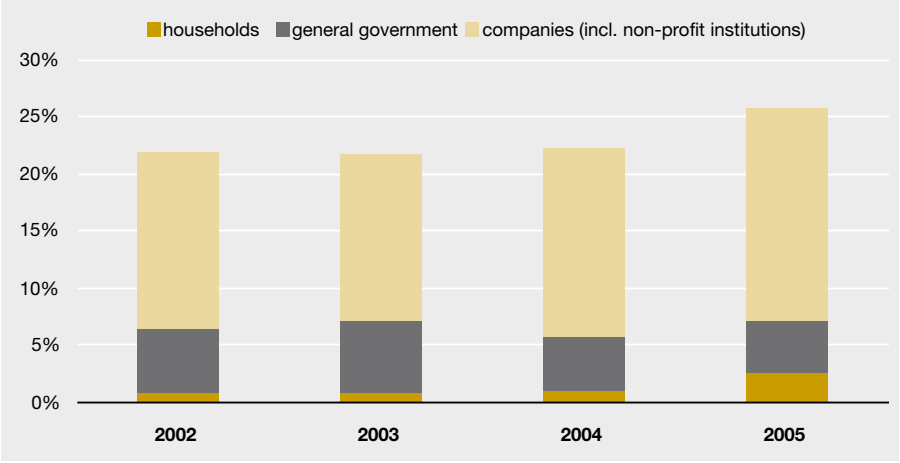
economies. This holds, regardless of the fact that in advanced economies a positive correlation between real estate purchases and price increases arising from increased demand for real estate and the financial system (launch onto the market of different loan products) has been identified. Thus, initially the main motive for households was to save for down payment, whereas now in addition to traditional loans new loan products have been launched to the market that require small or even no down payment.

In addition, it has been noted in various studies that the implementation of new pension schemes might be also a factor affecting the saving behaviour.

HOUSEHOLD SAVING IN NATIONAL ACCOUNTS

The National Accounts measure household saving residually as the net-of-tax income earned by the household sector less all expenditures, except real estate purchases and debt-related payments. Figure 1(a) shows that household saving as measured in the National Accounts constitutes only a small part of gross national saving. The bulk of gross saving derives from the corporate sector, which is also the sector using up the most capital. Household saving in Estonia increased markedly in 2005, but still makes up a substantially smaller share of GDP than in most western EU countries[12].

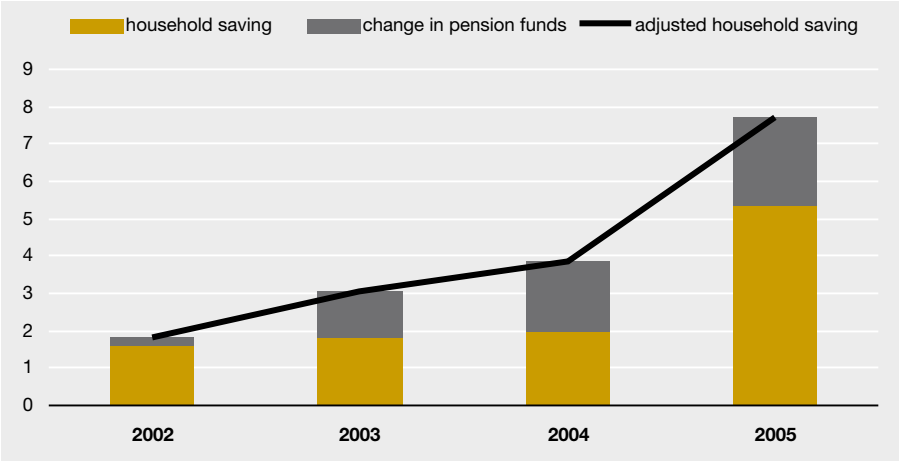
Figure 1. Gross saving rates in Estonia based on National Accounts data (2002–2005)



(a) Gross saving rates by institutional sectors as a percentage of GDP

Source: Eurostat (2007)

[12] Eurostat (2005).



(b) Gross saving rates in the household sector as a percentage of household disposable income

The low rate of household saving is one factor behind the substantial current account deficits in Estonia[13].

When considering the economic situation among households, it is customary to calculate the rate of household saving as a percentage of household disposable income, i.e. household income net of income tax and social security contributions. Figure 1(b) shows the gross household saving ratio as a percentage of net disposable income in the household sector. The figure also indicates the adjusted household saving rate, which takes into account changes in the net equity of households in pension fund reserves. This adjustment comprises the part of households' social security contributions that is accumulated in pension funds to which households have a definite claim. In Estonia, this entails accumulation of assets under the second and third pillars of the pension system, which has gained importance in recent years as a form of household saving.

Developments in household saving have occurred amid rapid changes in income, employment opportunities, stocks of non-financial wealth (including property wealth) and financial exposure among households.

The Estonian economy has expanded rapidly with annual GDP growth amounting to 8.4% on average during the period 2002–2005. Wages and other forms of household income have increased along with GDP. Reductions in the personal income tax rate and a higher tax-free

[13] Weber and Taube (1999), Kutos and Vogelmann (2005).

threshold have also contributed to growth in household disposable income. The disposable income of the household sector as measured in the National Accounts grew by 9.1% in real terms in 2002, 5.8% in 2003, 5.3% in 2004 and 9.7% in 2005[14]. Rapid economic growth has coincided with higher employment and lower unemployment. The survey-based unemployment rate among persons aged 15 to 74 fell from 10.3% in 2002 to 7.9% at the end of 2005. As said before, those conditions affect households' expectations and confidence regarding future incomes, which in turn might also have an effect on their saving decisions.

The main component of non-financial household wealth is the possession of residential property and other forms of property. Rapid price increases have been accompanied by a boom in the construction of new buildings and renovation of the existing stock. The growth rate of the value of housing stock was 28.7% in 2002, 12.6% in 2003, 29.5% in 2004 and 28.8% in 2005, which means that annual growth averaged 25% over the period 2002-2005[15]. Evidently, many households have also accumulated other forms of non-financial assets during the period; the sale of new and used cars as well as of other durable goods has seen significant growth.

Partly reflecting the growth of non-financial assets, Estonian households have also accumulated substantial financial assets and liabilities during the years 2002–2005. Figure 2(a) shows the outstanding loans to Estonian households granted by Estonian financial institutions during the period. The rapid growth of household debt as a share of disposable income is noticeable. Housing loans comprise the bulk of debt, and their share in total loans has increased over the years. The share of households that save to make a down payment before buying a house or an apartment amounted to 12% in 2005.

Figure 2(b) shows the financial assets and liabilities of Estonian households for the period 2003–2005. The stock of other liabilities (which includes car leases) has gained importance over the period. The stocks of loans and other liabilities have grown markedly, and this is also the case for the stocks of deposits, equity and other assets. The financial exposure of households has increased over the three-year period, while the net financial balance for households has deteriorated in both 2004 and 2005.

When assessing the overall financial exposure of Estonian households, it should be noted that although household debt has been growing rapidly, it is still low compared to the levels observed in most Western European countries.[16] Furthermore, the Estonian Government has no net debt and the country's households thus carry no implicit debt burden stemming from the servicing and eventual repayment of government debt.

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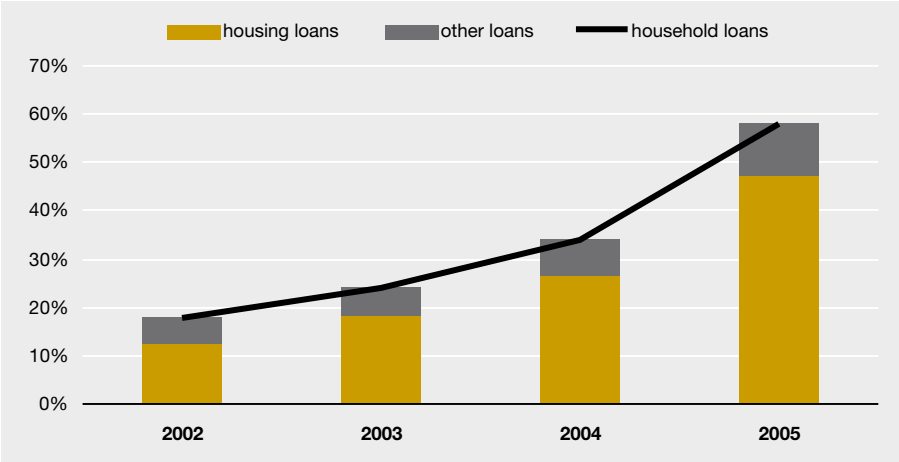
[14] Data from web sites of Eurostat and Eesti Pank.

[15] Kattai and Paabut (2006).

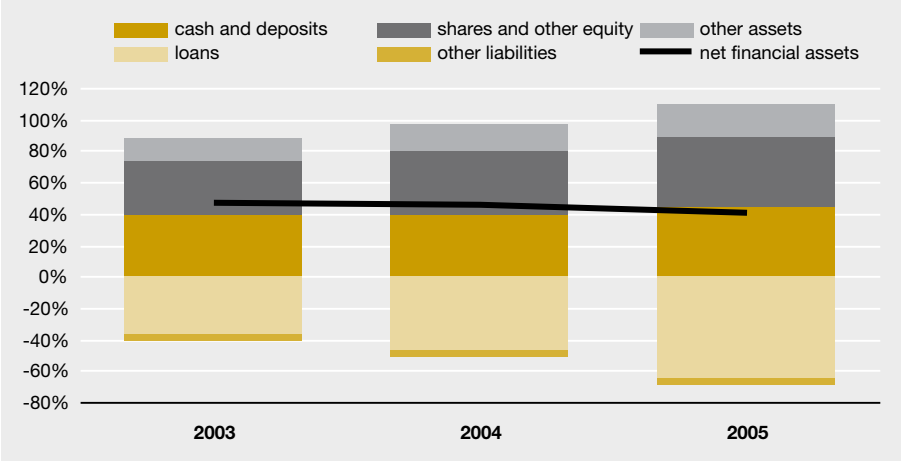
[16] At the end of 2005, the ratio of debt to annual disposable income amounted to 234% in Denmark, 133% in Sweden and 89% in Finland (Eesti Pank 2006, p. 33).

Figure 2. Financial assets and liabilities of Estonian households (2002–2005)



(a) Household loans granted by Estonian financial institutions

Source: Eesti Pank's web site, Kulikov et al. (2007)



(b) Financial assets and liabilities of households as a percentage of disposable income (end of year)

SAVING BEHAVIOUR FACTORS ON HOUSEHOLD LEVEL

As mentioned before, most studies dealing with high-income countries, like US, indicate that households smooth their consumption and therefore saving should exhibit a hump-shaped relationship with respect to age. Households typically have low or negative saving rates during the start and end of their life-cycle. In Estonia, as in other transition and developing economies, this pattern tends to be different. Namely, young and old households tend to save more than middle-aged households. An interesting study has been conducted in New Zealand[17], showing that the saving behaviour depends on the year of birth of household members. The abovementioned study explains the differences in cohort saving behaviour by differences in the tax system as well as in the economic and social environment (e.g. different social baggage and experience). This may be valid for Estonia as well: it appears that saving behaviour largely depends on the age of household members (in order to observe the birth year phenomenon, a longer period is needed) and the young and the elderly save more than the middle-aged. However, the underlying reasons may be somewhat different in Estonia compared to New Zealand.

The lowest saving rate is found for households where the age of the household head is approximately 29 years old. Comparing two households headed by persons being respectively 29 and 65 years old, the saving rate is, ceteris paribus, 9.2 percentage points higher for the older household. There are several probable explanations for the relatively high saving rate among the elderly. First, the elderly might save more than younger households owing to the bequest motive.[18] Second, Estonia has emerged from decades of communist rule and the subsequent transition to market economy. The relatively high saving propensity among older-generation households may be due to a habitual thrift or perception of economic vulnerability in the new economic environment.

In addition to age, also other variables may be analysed (e.g. the sex, nationality, level of education and labour market status of the head of household). The estimated coefficients of the variable indicating the labour market status of a household (not all household members work, all household members are inactive, or one or more household members are unemployed) are all statistically insignificant. But the receipt of entrepreneurial income appears to have a large negative effect on the saving rate. This result is surprising given that entrepreneurial income generally exhibits large variability. The finding may, however, to some extent reflect underreporting of this easily concealable type of income, provided that consumption is not similarly underreported[19]. Another possibility is that this group of households has better access to credit in ways otherwise unaccounted for among the explanatory variables.

[17] Gibson and Scobie (2001).

[18] Browning & Lusardi (1996).

[19] Pissarides & Weber (1989)

Temporary and regular incomes are important determinants of the saving rate. The working paper on which this article is based on (Kulikov et al. 2007) shows that temporary income shocks have substantially larger effect on the saving rate than the regular income. This difference is consistent with theories of consumption smoothing.

Dividing the households into sub-samples based on income and income source, as done in the study, reveals some interesting results of household saving behaviour in Estonia. For instance, the bulk of overall saving is undertaken by a relatively small group of mainly high-income earners. The saving behaviour of this group heavily affects the total amount saved. Conversely, some low-income households exhibit substantial negative saving.

In addition, the estimated coefficient for the income shock is substantially lower for low-income households than for middle and high-income households. In other words, low-income households smooth their consumption less when subjected to income shocks than better-off households. Second, the subjective assessment of being worse off at the time of the interview than one year before has broadly the same effect on the saving rate irrespective of income. Third, the debt service and liquidity variables have rather similar effects on the household saving rate across all three income groups. Fourth, the effects of financial assets and liabilities on household saving are by and large comparable across income groups. The effects are, however, much more precisely estimated for high-income households than for the other two groups, presumably because financial assets and liabilities are disproportionately held by high-income households. Fifth, the possession of non-financial assets in the form of cars and refrigerators has a much stronger downward effect on saving in low-income households compared to higher-income households.

Among wealth-related measures, the coefficient of the debt service ratio is statistically significant but obtains a negative sign. Taken literally, this implies that given the additional debt-servicing burden, Estonian households tend to reduce their saving as measured by the difference between the disposable income and consumption expenditure excluding debt-servicing payments. This result may not be as counterintuitive as it first appears: the likely explanation is that higher debt-servicing costs may capture some unobserved household characteristics, like access to credit and/or capital gains on real estate or other debt-financed property.

The results, however, show that real estate ownership has no impact on the consumption decisions of households. This may be surprising in light of real estate potentially comprising a large share of non-financial household wealth. One possible explanation focuses on the illiquidity of non-financial wealth in the form of real estate. If financial markets are less developed, households might find it difficult to transform property wealth into liquid assets available for current consumption expenses. Another possible explanation is that real estate ownership implies that many different channels (e.g. intertemporal substitution, the bequest motive, the down payment motive) affect household

consumption and that the net effect of real estate ownership on saving from all these different channels is indistinguishable from zero.

The coefficients for the two variables of car ownership (old and new car(s)) are negative and significant. The coefficients for the dummy variables indicating ownership of a refrigerator and a dishwasher are negative, although only significant at conventional levels in the first case. Denizer et al. (2002) also find that the possession of durable goods reduced saving in a number of transition countries in the mid-1990s. Foley & Pyle (2005) reach as similar conclusion using more recent data for Russia.

There are several possible explanations for that. First, Denizer et al. (2002) argue that the absence of consumer credit markets may compel households to save before buying durable consumer products. Consequently, the ownership of a durable good indicates that the household does not need to save for the down payment or the full purchase price of this particular good (the down payment motive). This explanation, however, may be less applicable in Estonia's case, especially at the end of the full sample period when consumer credit became widespread. Second, a purchase of a durable good is counted as consumption expenditure and will, ceteris paribus, lower saving in the month of the purchase. In the case of cars and refrigerators, which most households possess, a certain proportion of households will likely buy these goods during the interview month and, hence, register the purchase expenditure and the ensuring ownership of the good. Experimentation has shown, however, that this "purchase effect" can at most explain a very small proportion of the effect of durable good ownership on saving. Third, durable goods, in particular cars, may in many cases constitute a large part of household wealth and the negative sign might then be the result of a wealth effect on saving. Fourth, even if the wealth of a used car or refrigerator is rather limited, the ownership of such durable goods may be an indicator of otherwise unobserved forms of wealth which affect saving negatively. Finally, car ownership in particular entails substantial expenses paid for petrol, insurance, etc. which may lead car-owning households to reduce their saving.

Turning briefly to the household characteristics not directly related to income or wealth measures, the coefficients for a number of variables are significant in the model. The number of adults and children below the age of 15 in a household affect the saving rate negatively; more household members strain resources in the household and reduce saving. The negative coefficient for the variable indicating children below age of 15 may also reflect that children will support their parents at later stages of life and this will reduce the need for saving.[20]

Households headed by a woman, ceteris paribus, save less than households headed by a man. Households that are headed by non-Estonians have a higher saving rate than those headed by

[20] Orbeta (2006).

Estonians. These results are, however, not very robust to sample changes.

The higher the level of the household's education, the less it saves, other things being equal. This may reflect that households with higher education expect an increasing or less uncertain future income and, thus, bring their consumption forward. The fact that higher education is, ceteris paribus, associated with more saving is a result typically found in microeconometric analyses of saving behaviour[21].

CONCLUSION

This article summarizes the results of the working paper presenting a microeconometric analysis of the saving behaviour of a cross-section of Estonian households during the years 2002–2005.

In spite of limited dataset, the results obtained and reported are mostly in accordance with previous findings in the empirical literature on saving in middle-income transition economies, although some unexpected findings also arose. In line with Gibson & Scobie (2001), we find that a number of income and wealth related covariates along with controls for household characteristics make up a statistically and economically significant model explaining cross-sectional variation of the saving behaviour of households in Estonia. We will briefly review the main results and discuss some policy issues arising from the findings.

The saving rate depends positively on regular household income, but more pronouncedly on transitory income. These findings are consistent with theories of consumption smoothing. The estimated coefficients were relatively large; this is likely to be a result of the monthly observation period adopted by the Estonian Household Budget Survey. If an income shock leads to higher income during a particular month, then the part of the income that is not spent during the same month will be measured as savings. The marginal propensities to save out of regular and transitory income are thus not immediately comparable with results obtained using surveys with, e.g. annual periodicity. It should be noted that since the income variables enter in logarithmic form, the results should not be interpreted as indicating that average (economy-wide) income changes affect household saving. Even if the Estonian economy continues to expand rapidly, this may not lead to a higher household saving rate.

Households receiving income from self-employment have lower saving propensities. This finding is surprising given that proprietary income generally exhibits large variability, but the finding could reflect reporting problems concerning income and consumption. Otherwise the labour market status of a household has no discernable effect on household saving.

[21] Browning & Lusardi (1996)

Among the measures of non-financial assets, the empirical results suggest no statistically significant effect on saving behaviour from the ownership indicators of household's home and other real estate. This finding conflicts with results from Japan, for example, where saving behaviour varies markedly across renters and homeowners (Suruga & Tachibanaki 1991). The results for Estonia may be affected by the rapid changes in the housing market during the sample years, or the fact that home ownership and property ownership are widespread among households in Estonia as a result of the property restitution and privatisation that took place at the beginning of the 1990s.

The possession of a range of durable consumer goods, in particular cars, reduces household saving. This finding corresponds to similar findings in earlier studies of household saving in transition countries (Denizer et al. 2002, Foley & Pyle 2005). The rapid expansion of the ownership of cars and other durable goods has gone hand in hand with less saving. It is, however, not straightforward to interpret this result or, indeed, establish the direction of causality.

Taken at face value, the above results suggest that larger debts and/or debt-servicing payments reduce household saving. A possible explanation of this apparently contradictory result is that the employed indicators for liabilities and debt servicing are correlated with the unobserved credit access characteristics of the households in the sample. Easier credit access would lead to more consumption smoothing in anticipation of higher future real income. In this respect, the finding is in accordance with the macro background in Section 2: Estonian households have rapidly expanded their borrowing since 2002, which has also led to the continuing accumulation of financial liabilities.

The young and the elderly appear to save more than the middle-aged. A similar relationship has been found for other transition economies using cross-sectional data from the mid-1990s (Denizer et al. 2002). The finding should not be taken as contradicting the predictions of the life-cycle hypothesis, but most likely reflects differences in saving behaviour across generations in the cross-section of Estonian households.

Higher levels of education lead to lower saving. This result has been found in other studies as well and may be the consequence of households with higher education expecting higher and/or stable income streams in the future. In this interpretation, the education variables are proxies of non-financial wealth.

To conclude, household saving in Estonia has increased over the period 2002–2005, but so has the financial exposure of households. Income and wealth related covariates are found to be among the most important determinants of saving behaviour, but they alone are unlikely to explain the time trend in the macroeconomic picture of household saving. Other important variables, such as possession of durable goods and educational attainment, are similarly unlikely to explain the trend

in saving over the years. The main results of this study should therefore be interpreted as describing microeconomic determinants of saving behaviour across different household sub-groups, rather than explaining trends in the saving behaviour of Estonian households over time.

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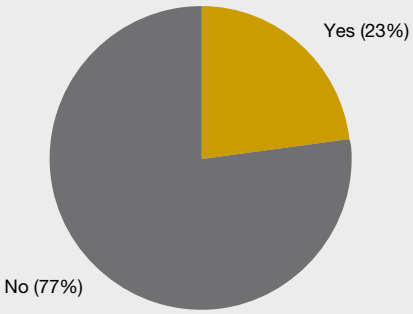
ESTONIAN RESIDENTS' ATTITUDE TOWARDS TAKING A HOUSING LOAN

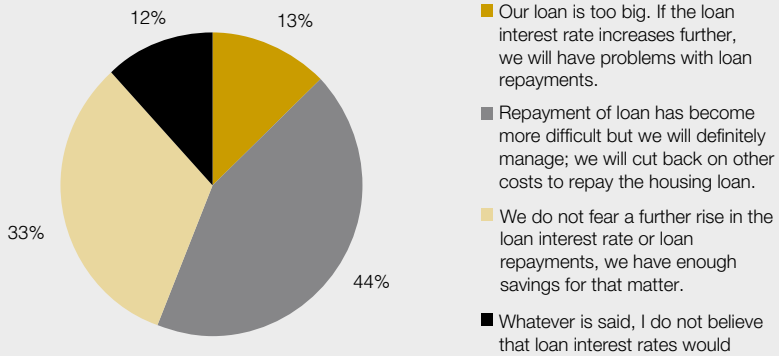
Survey by TNS Emor

In order to determine Estonian residents' attitude towards taking a housing loan and towards risks associated with borrowing, Eesti Pank asked TNS EMOR to conduct a respective survey among 15 to 74 year old Estonian residents during 29–31 May 2007. The following outlines the main results of the survey.

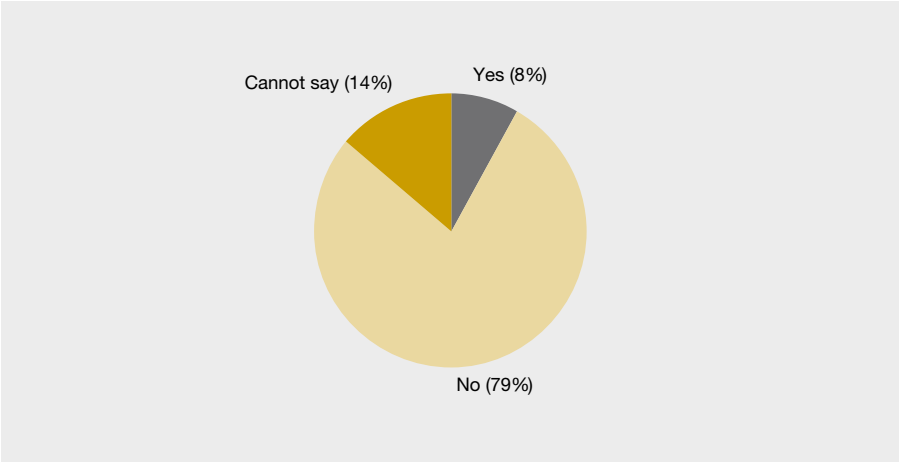
Approximately a fifth of the households surveyed are repaying a household loan.



Over 10 percent of the households with housing loans are worried about their loan repayments. Nearly 40% sense that the repayment of loan has become more problematic and are ready to cut other costs for that matter.



Approximately 8 percent of the respondents claim to know someone who has problems with loan repayments. Nearly 80 percent claim to not know such persons.



Only 3 percent of the respondents are sure they will take a housing loan this year. About 7 percent will possibly take a housing loan. More than half of those planning to take a loan this year will do it only in case they find a suitable and pleasant housing. Less than 10 percent are ready to "buy anything" at any cost in the expectation of a further real estate price rise.

All this proves that Estonian residents are sensible and responsible when it comes to taking a housing loan. This, in turn, means that risks accompanying borrowing are relatively well hedged.

EVALUATION OF FINANCIAL SECTOR DEVELOPMENT

Mari Tamm

INTRODUCTION

The financial sector plays an important role in economy and therefore its development has primarily been explored from the aspect of facilitating economic development. In order to study the impact of the financial sector on economic development, indicators characterising the development of the financial sector should be determined. The effectiveness of the financial sector may be defined in many ways, and thus we face the question which indicators would be most suitable for that purpose. This article aims to cover indicators that have been suggested or used for the evaluation of financial sector development, and analyse their shortcomings under the current conditions of the global financial market.

FACTORS AFFECTING FINANCIAL SECTOR DEVELOPMENT

A number of different factors affect financial sector development but among the most outstanding aspects are the existing legal systems, and laws and regulations based on these systems. It has been found that the development of financial markets is fostered in those countries that can ensure the inviolability of property, performance of contracts, and protection of creditors' and investors' rights.[1] From the aspect of financial sector development, also flexibility of the legal system is considered essential – that is how quickly the legal system can adjust to the changing circumstances of the financial market so as to meet its needs.[2]

Financial sector development is certainly affected also by the macroeconomic policy implemented in the country. More precisely, it is facilitated by a macroeconomic policy aiming at a low inflation rate and a high level of investment.[3] It has been found that the liberalisation of the current and capital accounts have a positive impact on financial sector development, although for the impact to become evident, strong and well-functioning economic, legal and social institutions are inevitable.[4] Allegedly, opening the financial market to foreign competition will bring about financial services at lower prices and of higher quality.[5]

Since the financial structure differs across countries and regions, the influence of the structure of the financial system on the sector's development has been frequently treated. Ever since the 1970s discussions have been going on the impacts that bank and market based financial systems have on financial sector development. However, no clear preference has been given to either system. As for bank based systems, collection of information on companies and supervision

[1] See e.g. La Porta, Lopez-de-Silanes, Schleifer and Vishny (2000).
[2] Beck, Demirgüc-Kunt and Levine (2003), Beck, Demirgüc-Kunt and Levine (2005).
[3] See e.g. Huang (2005).
[4] Klein and Olivei (1999).
[5] Barth, Caprio and Levine (2004), Classens, Demirgüc-Kunt and Huzinga (1998).

of management is more efficient than in case of market based systems, whereas the latter are claimed to be more flexible since they offer a wider range of financial products for risk management and are more suitable for financing new and innovative companies.[6]

Thus, it has also been claimed that the financial sector structure is not of paramount importance from the aspect of the sector's development, provided the sector fulfils its functions effectively. With the above in mind, a combination of bank and market based structures could prove the most viable solution.

Although a number of authors have confirmed the impact of the financial sector on economic growth, others have studied whether an opposite relationship exists, or whether economic growth affects financial sector development. As using services of the financial sector involves certain expenses, economic growth reflects that a higher number of economic agents may afford using financial services and the volume of financial assets is rising. Economic growth triggers tighter competition which reduces charges for financial services.[7] When the level of income is higher, fixed costs related to the establishment of financial markets are relatively easier to bear.[8] Some authors have stated, however, that the financial sector only responds to economic development and/or have questioned the role of the financial sector in economic development altogether.[9]

HOW IS FINANCIAL SECTOR DEVELOPMENT ASSESSED?

In order to evaluate the performance of the financial sector, the sector's ability to fulfil its tasks is measured. In general, tasks of the financial sector's include: (a) acquiring information about potential investment opportunities; (b) monitoring and evaluating investments after a positive investment decision has been made; (c) facilitating risk diversification and management; (d) mobilising and allocating savings, and (e) facilitating the exchange of trading goods and services. Completion of these tasks is very complicated, if not impossible, to measure with empirical indicators.

The first indicators to describe financial sector performance, proposed in the late 1960s and early 1970s in the studies on the positive impact of financial sector liberalisation, were the ratio of financial intermediaries' assets to GDP and the ratio of money supply to GDP.[10] Thus, financial sector performance was measured through savings intermediated by the sector and the volume

[6] See e.g. Levine (2002).
[7] Greenwood and Jovanovich (1990).
[8] Greenwood and Smith (1997).
[9] See e.g. Rousseau and Wachtel (2005).
[10] Goldsmith (1969), McKinnon (1973), referred through Levine (2004).

of investment. The positive effect of financial liberalisation reflected in financial deepening, i.e. the increase in the volume of financial assets as a ratio to the total volume of economy.

The next important stage in studying financial development were publications of the early 1990s, which attempted to evaluate financial sector development by taking into account also the financial intermediaries that fulfil the functions of the financial sector, and the destination of savings directed through the financial sector. Thus, the following indicators were added to the traditional ratio of financial intermediaries' assets to GDP: a) loans issued by banks divided by the sum of their assets and the central bank's domestic assets, and b) loans of the private sector divided by GDP. Moreover, attempts have been made to capture the effectiveness of the financial sector, primarily through the average loan-deposit spread.[11]

In order to consider several factors (including qualitative) simultaneously, various indices of financial development were constructed which also take note of expert opinions collected through surveys.[12] Since they are subjective by nature, it is rather complicated to use them for evaluating financial sector development in time, and making comparisons between countries.

KEY INDICATORS AND THEIR SHORTCOMINGS

The indicators most frequently employed for describing financial sector development are financial deepening indicators: volume of financial intermediaries' assets, money supply and/or a ratio of the volume of private sector loans or other loans to the volume of total economy. Apparently, they are used as they are easily available and comparable. Mostly banks' assets and/or capitalisation/turnover of the securities market are used as the characteristic features of financial deepening. From the viewpoint of the present-day financial system, the above approach is insufficient because it neither considers the integration of financial markets arising from globalisation nor structural differences of financial sectors in different countries.

The integration of financial markets caused by globalisation has blurred the boundaries between financial sectors. If there are no restrictions on the movement of capital between countries, foreign borrowing can play an important role besides the funds intermediated by the domestic financial sector. Similarly, the financing of private sector may occur through other financial intermediaries besides banks or securities markets. If there are no restrictions on capital movement, neither the physical location nor form of the financial market is important from the perspective of financing. From the aspect of financing the economy, what matters is the access to finance regardless of from where or through which channels it is provided to economic agents.

[11] King and Levine (1992), King and Levine (1993), Johnston and Pazarbasioglu (1995), Levine (1996).
[12] See e.g. Gelbard and Leite (1999), Huang (2005).

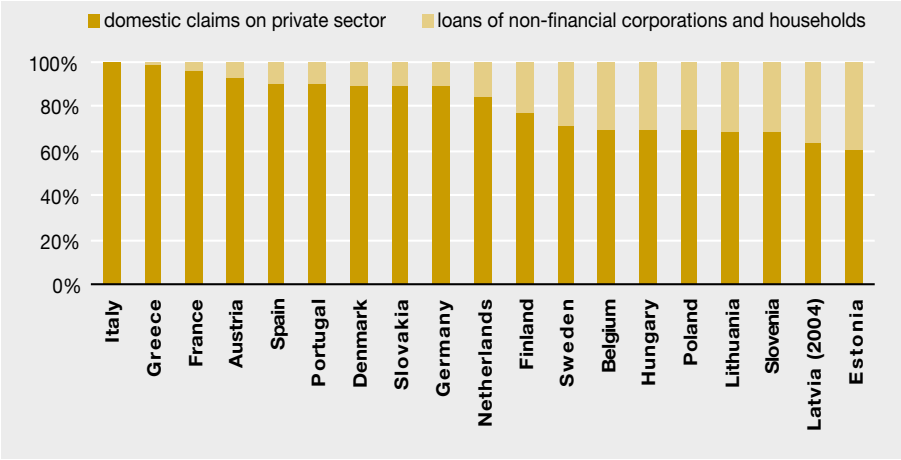


Figure 1. Structure of private sector loans in EU Member States at the end of 2005

Sources: Eurostat; International Monetary Fund (IMF/IFS)

In the European Union there are economies that are nearly 100% financed by banks, and those that are about 50% financed by other funds (including foreign loans; see Figure 1). The shortcomings of describing financial deepening through a single component of borrowing are especially obvious in the case of those countries where large-scale institutional and structural changes are taking place that may significantly influence the development of different components of borrowing. Consequently, wrong conclusions may be drawn with regard to total financing of the economy on the basis of the development affected by the structural changes of a borrowing component. Therefore, adequate evaluation of financial deepening calls for indicators that cover the total borrowing of the economy.

CONCLUSION

Until today, there is no uniform agreement on how to assess and describe the capability of the financial sector to fulfil its tasks. Therefore, different indicators are used for the evaluation of financial sector development. In order to describe financial deepening, indicators based on the domestic banking sector or securities market are often applied, but they do not take the integration of financial markets caused by globalisation or international structural differences of financial markets into account. If financial sector development is evaluated by using financial deepening indicators, indicators reflecting the total borrowing of the economy have to be applied in order to draw informative conclusions.

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APPENDIX

MAIN QUARTELY INDICATORS OF THE ESTONIAN ECONOMY as at 31 July 2007

	Unit	Period	Indicator	Change compared to the previous period (%)	Change compared to the same period last year (%)	Source
Gross domestic product						
Current prices	EEK m	Q1 07	54,267.3			ESA
Constant prices	EEK m	Q1 07	39,739.3	-3.9	9.8	ESA
Production						
Volume index of industrial production (at constant prices, 2000 = 100)	%	Q2 07		6.6	7.2	ESA
Investments in fixed assets (at current prices)	EEK m	Q1 07	8,753	-26.2	12.6	ESA
Construction						
Construction activities of construction enterprises (at current prices)	EEK m	Q1 07	10,531	-25.1	41.3	ESA
Usable floor area of completed dwellings	thousand m^2	Q2 07	164.7	35.2	100.4	ESA
Usable floor area of non-residential buildings	thousand m^2	Q2 07	271.2	18.5	16.9	ESA
Consumption						
Retail sales volume index (at constant prices, 2000 = 100)	%	Q2 07		12	17	ESA
New registration of passenger cars	pieces	Q2 07	21,864	21.8	3.2	ARK
Prices						
Consumer price index	%	Q2 07		1.9	5.7	ESA
Producer price index	%	Q2 07		2.4	8.5	ESA
Export price index	%	Q2 07		2.5	7.5	ESA
Import price index	%	Q2 07		1.6	3.2	ESA
Construction price index	%	Q2 07		2.1	15.2	ESA
Real effective exchange rate (REER) of the Estonian kroon	%	Q2 07		0.8	2.2	EP
Labour market and wages						
Employment rate (based on the Labour Force Survey)*	%	Q1 07	61.8	62.0	60.5	ESA
Unemployment rate (based on the Labour Force Survey)*	%	Q1 07	5.3	5.6	6.4	ESA
Registered unemployed	persons per month	Q2 07	13,133	-5.1	-17.5	TTA
% of population between 16 years old and pension age*	%	Q2 07	2.0	2.0	1.9	TTA
Average monthly gross wages and salaries (health insurance benefits excluded)	EEK	Q1 07	10,322	1.1	20.1	ESA

* Indicators of the period, not changes.

	Unit	Period	Indicator	Change compared to the previous period (%)	Change compared to the same period last year (%)	Source
General government budget (net borrowing not included here)						
Revenue	EEK m	Q1 07	19,336.5	-8.7	24.6	RM
Expenditure	EEK m	Q1 07	18,610.8	-19.0	20.6	RM
Balance (+/-)*	EEK m	Q1 07	725.7	-1,804.7	87.0	RM
Period's revenue to the planned annual revenue*	%	Q1 07	27.0	29.5	21.6	RM
Transport						
Carriage of passengers	thousand	Q1 07	53,689	-3.3	-0.8	ESA
Carriage of goods	thousand tons	Q1 07	29,291	19.9	32.9	ESA
Tourism and accommodation						
Visitors from foreign countries received by Estonian travel agencies	thousand	Q1 07	422.6	18.8	45.9	ESA
Visitors sent to foreign tours by Estonian travel agencies	thousand	Q1 07	128.1	14.6	12.9	ESA
Accommodated visitors	thousand	Q1 07	395.3	-16.7	7.8	ESA
o/w foreign visitors	thousand	Q1 07	199.6	-29.1	1.9	ESA
Foreign trade (special trade system)						
Exports	EEK m	Q1 07	29,416.3	-4.4	3.7	ESA
Imports	EEK m	Q1 07	41,267.5	-4.3	9.5	ESA
Balance*	EEK m	Q1 07	-11,851.2	-12,387.8	-9,329.6	ESA
Foreign trade balance/exports*	%	Q1 07	-40.3	-40.3	-32.9	ESA
Balance of payments*						
Current account balance	EEK m	Q1 07	-9,723.2	-9,462.4	-7,355.8	EP
Current account balance to GDP	%	Q1 07	-17.9	-17.2	-16.1	EP
Foreign direct investment inflow	EEK m	Q1 07	7,804.5	3,984.8	7,788.2	EP
Foreign direct investment outflow	EEK m	Q1 07	-3,439.2	-2,350.7	-2,050.9	EP
International investment position						
Net international investment position	EEK m	31/03/07	-153,385.0	0.8	6.6	EP
Direct investment in Estonia	EEK m	31/03/07	147,240.7	-2.1	-2.9	EP
Net external debt	EEK m	31/03/07	215,325.7	7.8	30.9	EP
o/w goverment	EEK m	31/03/07	4,771.4	1.2	4.6	EP
EEK/USD average quarterly exchange rate	EEK	Q2 07	11.610	-2.8	-6.6	EP

Statistical Office of Estonia (ESA)
Motor Vehicle Registration Centre (ARK)
Eesti Pank (EP)
Labour Market Board (TTA)
Ministry of Finance (RM)
Estonian Institute of Economic Research (EKI)