

Characteristics of Household Debt in Austria

Does Household Debt Pose a Threat to Financial Stability?

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The level of household debt has risen in many countries, including Austria. This study examines whether the increased level of debt represents a risk to financial stability. The data used are mainly derived from a survey on households' financial wealth conducted by the Oesterreichische Nationalbank (OeNB).

Analysis shows that high-income households tend to have more debt than low-income households; the latter, however, are more burdened by their debt. Demand for consumer loans tends to be highest among high-income households with little financial assets.

As high debt levels are mostly concentrated among affluent and high-income households, household debt in Austria does not constitute a threat to financial stability. Borrowers with lower incomes and/or low levels of wealth are particularly vulnerable borrowers.

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1 Household Debt: An Important Issue for Central Banks

In recent years, the level of household debt has significantly increased in many countries (see for instance Girouard et al., 2006). This trend can be observed over both the short and the long term. While in many countries the latest upsurge in household debt is primarily a result of rising real estate prices, the long-term trend is unfolding against the backdrop of the broadening range of financing opportunities available to households.

In Austria, too, household debt has risen relative to disposable income. A growth in household indebtedness is not a problem per se, but it does become an issue when the borrowers' housing or consumer loan payment obligations exceed their financial means. The debt situation and the risk of excessive levels of debt in households cannot be adequately assessed using the aggregate debt level data provided by national accounts and financial accounts. For this reason, aggregate indicators need to be complemented with indicators on an individual household level.

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This study addresses two key questions: first, what are the socio-demographic characteristics of indebted households in Austria, and second, what threats to financial stability arise from the debt situation of households?

For international comparison purposes, reference is made to the analyses of the household debt situation that have been conducted by several central banks in recent years, including the Banca d'Italia (2006), the Banco de España (2005), the Bank of England (Barnes and Young, 2003; Barwell et al., 2006), the Deutsche Bundesbank (Bartzsch and Stöß, 2007), Suomen Pankki (Herrala, 2006; Herrala and Kauka, 2006), the European Central Bank (ECB, 2005; Rinaldi and Sanchis-Arellano, 2006) and Sveriges Riksbank (Johansson and Persson, 2006). In addition, both the OECD and the BIS have also recently produced their own economic policy reports on this subject (see Debelle, 2004; Girouard et al., 2006).

In Austria, the first investigations into household debt were initiated at the beginning of the 1990s, with

studies by Schönbauer (1990) and Mooslechner (1992). However, the lack of adequate available data has so far prevented more broadly based research initiatives.

In most cases, the research focus is on the potential risks for financial stability and economic growth that might arise from excessive indebtedness among households. One aspect of economic and political concern is that highly indebted households may ultimately be unable to service their loans and might thus trigger a financial crisis in the event of a macroeconomic shock (e.g. an interest rate hike, increasing unemployment or a drop in income).

In terms of economic policy, there are three different levels of concern:

- the macro level: macroeconomic risks resulting from a slump in consumer demand;
- the financial sector level: the risk of financial instability resulting from households being unable to service their debt; and
- the individual level: risk of household overindebtedness.

A variety of different indicators are needed to assess the situation on each of the different levels. Micro-data, such as the OeNB's 2004 Survey on Households' Financial Wealth, which reflect the socioeconomic characteristics of households, are important on all levels.

2 Indicators of Household Debt

In this study, the term debt denotes loans taken out by households, with a differentiation being made between housing loans and consumer loans.

The loan data used to calculate aggregate debt indicators are derived from the national financial accounts. The financial accounts characterize

loans as nonsecuritized, interest-bearing borrowings provided by banks or federal and regional governments (the latter being major providers of housing loans). Housing loans are defined as loans earmarked for the acquisition and maintenance of living space; consumer loans are loans taken out to finance the consumption of goods or services. All other types of lending fall under the heading of other loans. The latter category can lead to distortions when examining the level of household debt, as it also includes loans granted to self-employed borrowers.

This study attempts to match the survey-based indicators as closely as possible to the loan definitions given in the financial accounts. However, none of the surveys used enable a distinction between consumer loans and other loans. Unlike the aggregate data, the survey data also include debt to mail order companies and loans from private individuals.

The debt ratio can be defined as the percentage of debt relative to disposable income. The higher the income, the easier it should be to repay any outstanding debt. However, one disadvantage of this method of measurement is that it compares a stock figure to a flow figure. Considering a certain income at a specific time only reflects a snapshot in time, and security of income can only be assumed in a small number of occupational groups (e.g. tenured public servants or retirees). Whether a debt that can be financed at present will be affordable in the long term depends on future income developments. A debt ratio that is considered too high for a given situation may become affordable in the future, when an increase in income materializes. In young households, where loans are taken

out to finance consumer spending, debt may become repayable during phases of above-average growth in income.

The level of debt in relation to income has been on the rise for the last fifty years. If wealth is also increasing, this is not necessarily a cause for concern. Therefore, concentrating solely on income can be misleading. As an alternative, the ratio of debt to gross financial assets may be used as an indicator. In this context, it should be noted, however, that comprehensive data on financial assets are only available in a very few countries. While financial wealth and liabilities have been increasing along the same lines in Austria, they remain below average in comparison with the rest of the euro area. Another issue is that comparing personal debt to financial assets alone can lead to a distorted portrayal of the debt situation: the dramatic nature of the level of debt might be overestimated because tangible assets (such as real estate and cars) can be liquidated relatively quickly and therefore provide a certain cushion to cover debt servicing shortfalls.

If the research interest focuses on households' potential problems in meeting their debt obligations, the ratio of repayment liabilities to disposable income serves as a useful indicator.

Although the overindebtedness of many households frequently makes headlines in the media, the term itself is only imprecisely defined. The Kreditschutzverband von 1870 (KSV), an Austrian credit monitoring agency, estimates that, at present,

approximately 100,000 households in Austria (around 2.9% of all households) are burdened with excessive debt.

The indicators taken from aggregate data, such as national accounts and financial accounts, must be supplemented with individual household indicators. Using such survey data, it is possible to calculate the ratio of debt or repayment liabilities relative to income or financial assets for each indebted household. If we want to assess the debt situation of households, the distribution of debt within the population can be factored into the analysis with the help of these microdata indicators. This study uses the Austrian data from the European Community Household Panel (ECHP), the EU Survey on Income and Living Conditions (EU-SILC) and the OeNB's 2004 Survey on Households' Financial Wealth. A detailed description of these datasets is set out in annex 1.¹

3 Structure of Household Debt

In this section, the frequency of debt and the influence of socioeconomic characteristics are analyzed on the basis of the above data (see annex 1). This descriptive analysis is complemented by logit estimates for the probability of debt. In each case, a differentiation is made between housing loans and consumer credit.

3.1 Low Level of Debt Frequency in Austria

According to ECHP and EU-SILC data, in the period from 1995 to 2004, a little more than 30% of

¹ While several datasets have been used, many interesting aspects of household debt must remain unexamined, as none of the surveys contains information on the nonfinancial wealth of indebted households, the level of repayment liabilities for all loan types, interest rates or the duration of fixed interest periods.

Table 1

Loan Frequency													
%	ECHP										SILC		
	1995	1996	1997	1998	1999	2000	2001	2003	2004				
Housing loans	20 (0.01)	21 (0.01)	21 (0.01)	21 (0.01)	21 (0.01)	20 (0.01)	22 (0.00)	21 (0.01)	24 (0.01)				
Consumer loans	18 (0.01)	14 (0.01)	14 (0.01)	15 (0.01)	15 (0.01)	15 (0.01)	14 (0.01)	14 (0.01)	14 (0.01)				
Loans	33 (0.01)	32 (0.00)	32 (0.00)	33 (0.01)	33 (0.01)	32 (0.01)	32 (0.01)	32 (0.01)	33 (0.01)				

Source: OeNB, based on ECHP and SILC data.

Note: Standard errors are given in parentheses.

Austrian households had contracted loans. More specifically, slightly over 20% of households indicated that they had taken out housing loans whereas around 15% of households listed consumer loans. These values have remained relatively stable during the observation period.

An international comparison of debt frequency (Sierminska et al., 2006)² shows that, compared to Austria, the proportion of households with loan commitments is lower only in Germany (30%) and Italy (22%). The figure for Germany may be underestimated, however, as the national data used for the Luxembourg Wealth Study (LWS) only reflect loans to the extent that they exceed a threshold of EUR 2,500. At 80%, the loan frequency is highest in Norway, followed by the U.S.A. (75%) and Sweden (70%). Possible reasons for Austria's relatively low ranking are the tax treatment of loan interest rates, the low loan-to-value ratio for housing loans and a specific aversion to taking out loans (see section 5).

3.2 Influence of Socioeconomic Factors on Household Debt

3.2.1 Theoretical Considerations: Debt Accumulation over the Life Cycle

Our starting hypothesis is that household borrowing follows the life cycle hypothesis. Based on the variables available from the OeNB Survey on Households' Financial Wealth, we examine the influence of the following factors on borrowing: age of the household head,³ household income, gross financial assets, level of education, marital status, number of people in the household and inheritances. For a more comprehensive discussion of the influencing factors and also of the difficulties inherent in conducting econometric studies in this area, see Crook (2006), who also performs an international comparison, or Magri (2002).

As far as age is concerned, an increase in borrowing can be expected up until midlife – a development that results from the expenditures associated with establishing a household, coupled with a relatively low income.

² The data used in Sierminska et al. (2006) originate from the Luxembourg Wealth Study (LWS). LWS data are currently available for Canada, Cyprus, Finland, Germany, Italy, Norway, Sweden, the United Kingdom and the U.S.A. In November 2006, the data from the OeNB Survey on Household's Financial Wealth were integrated into the LWS database but could not yet be incorporated into Sierminska et al. A description of the integration of the OeNB survey data into the LWS database can be found in Beer et al. (2006b).

³ Information on partners was disregarded, as it either corresponded (e.g. place of residence) or correlated very closely (e.g. age) with that of the household head.

Higher income tends to enable people to self-finance their needs without resorting to borrowing. This suggests a lower demand for lending in high-income households. When it comes to consumer credit, however, the level of income is less relevant than the expected change in income. As far as assets are concerned, the effect is, a priori, not clearly identifiable. On one hand, there may be less need for borrowing in wealthier households; on the other hand, certain undertakings, such as the purchase of real estate, require borrowers to contribute their own funds, which may result in an increase in the demand for lending among wealthier households.

The same applies to inheritances, as they lead to an increase in wealth. An inheritance may cause the demand for lending to rise, for example, when the possibility of building a home only arises when a piece of land is inherited.

A higher level of education can be an indicator of possible future increases in income and reduce the nonfinancial cost of borrowing (e.g. the cost associated with collecting information).

With regard to marital status, a higher demand for lending can be expected from (married) couples. An additional variable is the number of children in the household; under certain circumstances, this can be a better indicator of long-term intentions to maintain a household than a (married) couple living together.

On the supply side, the most important issue for banks granting loans is the security of repayment. High levels of income and wealth in com-

parison with the commitment size are therefore more likely to result in a loan being granted. As security of income is another relevant factor, we will also use information on the occupational status of the household head. In cases of larger households, lenders may also have access to the incomes of several people.

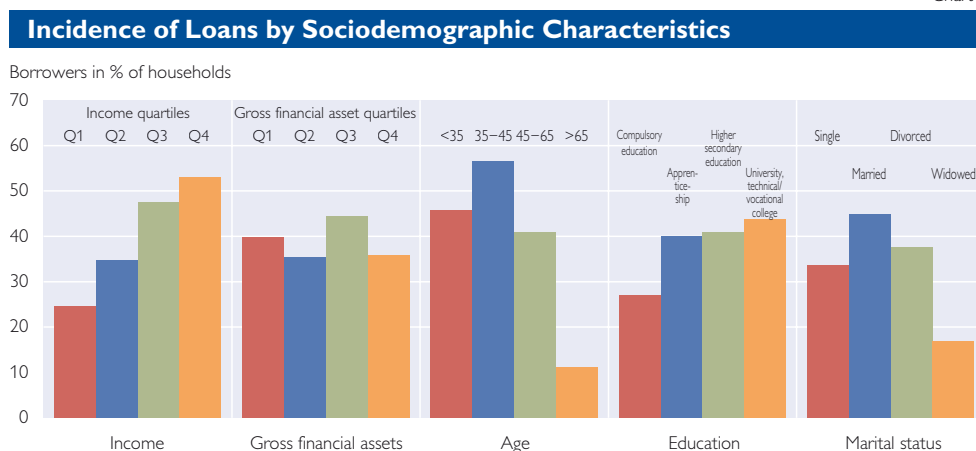
3.2.2 Influence of Sociodemographic Factors as Outlined in the OeNB Financial Wealth Survey

This section will analyze the frequency of debt according to the previously identified characteristics, using the data from the OeNB Survey on Households' Financial Wealth as a basis.⁴ The results of the OeNB survey (chart 1 and table 5) confirm the findings derived from the ECHP and EU-SILC data insofar as they indicate that housing loans are taken out more frequently than consumer loans. Regarding the share of housing loans in total debt, however, there are discrepancies between the ECHP/EU-SILC data and the OeNB survey data.

Both the ECHP/EU-SILC data and the OeNB survey data show a correlation between debt and income. Loans are more prevalent among high-income households, and this difference in distribution is even more pronounced for housing loans than for consumer loans. The differences in the levels of debt broken down by income group are repeated on an international scale and are evident in all of the countries examined by Girouard et al. (2006). There are considerable differences across income quartiles in foreign currency loans because this type of borrowing

⁴ For comparable data, see Banco de España (2005).

Chart 1



Source: Authors' calculations, based on data from the OeNB Survey on Households' Financial Wealth (2004).

is mostly used to finance new homes, i.e. for investments that high-income households are more likely to be able to afford. High-income households are also in a better position to assume (financial) risks.

Broken down by assets, the highest share in lending can be attributed to households belonging to the third quartile of gross financial assets. Consumer loans are most commonly taken out by households with a low level of financial assets, whereas the frequency of housing loans initially increases in line with financial wealth and then declines in the most affluent households.

From the perspective of age, the distribution shows the expected hump-shaped pattern, with a higher level of debt in the first half of life and a reduction in borrowing in the second half. Indebtedness is most widespread among members of the age group of 35 to 45 years. With respect to consumer loans, however, households in which the head of household

is younger than 25 years of age make up a large proportion of the total debt volume.⁵

As regards marital status, loans are most often taken out by (married) couples living in the same household. The equally frequent indebtedness of divorced individuals may be the result of loans taken out prior to separation or may stem from an additional demand for borrowing in the wake of the divorce.

Broken down by education, the ratio of borrowing is lower among households headed by individuals who have only completed compulsory education than for the rest of the population. With regard to occupational status, the relatively low level of loans taken out by self-employed individuals is particularly noteworthy, although this phenomenon may be partly related to a lack of differentiation between professional and private forms of financing by the respondents.

⁵ For interpretation purposes, the fact that the OeNB survey is a cross-sectional analysis should be taken into account. Statements on the distribution of loans throughout the life cycle can therefore be misleading.

Table 2

Logit Estimates for Indebtedness		
Odds ratio	Housing	Consumption
Age of household head	1.079**	1.180***
Age of household head, squared	0.999***	0.998***
Public servant	0.851	1.081
Vienna	0.586***	1.568***
Self-employed	0.756	1.050
Inherited	1.296**	0.786
Married	0.834	1.320
Number of adults	1.181**	1.087
Number of children	1.216***	0.776**
Gross financial assets		
2 nd quartile	0.884	0.386***
3 rd quartile	1.024	0.299***
75 th to 95 th percentile	0.693*	0.244***
95 th percentile and above	0.468**	0.075***
Net household income		
Between EUR 1,350 and EUR 2,399	1.997***	1.292
Between EUR 2,400 and EUR 4,199	2.996***	1.813**
Exceeding EUR 4,199	3.619***	2.799***
Higher secondary education	1.232	1.246
University, technical/vocational college	1.218	1.199

Source: OeNB, based on the Survey on Households' Financial Wealth (2004).

Note: *** The coefficient differs from 1 to a statistically significant degree at a significance level of 1% (** 5%, * 10%). The coefficients represent the effect of the explanatory variable on the probability of being in debt, with an odds ratio greater than 1 indicating an increase in the probability.

Consumer loans are taken out for a variety of reasons. Based on the data from the OeNB Survey on Households' Financial Wealth, loans can be broken down by loan purpose, with purchasing a motor vehicle and furnishing one's home ranking highest, each being named by 31% of all households surveyed as the purpose of taking out a loan. It can be assumed that the intended use of consumer loans is also related to income. Auto loans, for example, are taken out more frequently by households with an income above the median than by those with an income below the median.

3.2.3 Logit Estimates of the Probability of Debt

As the variables used are, in part, strongly correlated with each other (e.g. education and income), the influence of individual socioeconomic characteristics must be isolated. For this reason, we performed a logit estimate⁶ for the probability of incurring indebtedness using the data from the OeNB Survey on Households' Financial Wealth.⁷ As the property market in Vienna differs from those in the other federal provinces (e.g. higher proportion of rental properties), a dummy variable was entered

⁶ These models estimate the influence of explanatory variables (in this case, the socioeconomic characteristics of a household) on the probability of an event taking place (in this case, borrowing).

⁷ The OeNB Survey on Households' Financial Wealth is a cross-sectional survey, which only shows whether or not a household was in debt at the time of the survey. There is no information on the time a loan was taken out, and therefore the household characteristics used in the logit estimate may differ from the characteristics prevailing at the time the indebtedness was incurred. Furthermore, it is not possible to establish whether certain households did not require external funding or whether their loan applications were denied.

for households whose primary residence is in Vienna. To take the possible nonlinear effects of age into account, the square of the age was also included in the calculation.

For both housing and consumer loans, the age of the head of household has a positive effect on the level of debt. The greatest probability of debt is reached at an age of 35 years. While the level of financial wealth generally has a negative influence on the probability of holding debt from consumer loans, a significant negative influence on housing loan indebtedness is only evident for households belonging to the fourth quartile. Income has a positive effect on both housing and consumer loans.

Viennese households tend to incur debt less frequently for housing purposes and more frequently for consumption purposes than other Austrian households. After all, those Viennese who are entitled to public housing have a specific alternative without the need to seek external financing.

The variable (married) couple, which falls under the category of marital status, has no significant influence on the probability of debt from housing loans, although the number of adults and children in the household does. As people have children, the demand for owning their home instead of just renting it appears to increase, while the probability of taking out consumer credit, by contrast, drops with the number of children in a household. Households that have previously received an inheritance take out housing loans significantly more often, whereas inheritances have no impact on the demand for consumer loans. The level of education does not appear to have a pronounced effect on the

demand for either housing or consumer loans.

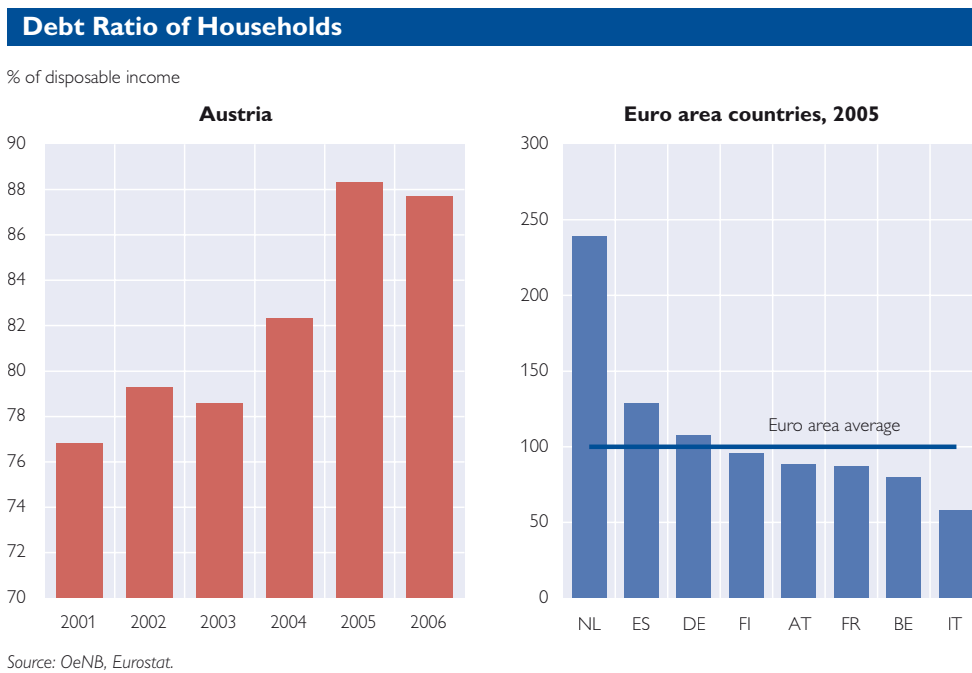
4 Amount of Debt

This section presents an overview of the amount of debt held by Austrian households. First, household indebtedness is analyzed on the basis of national financial accounts data released since 1995, including an international comparison with other countries in the euro area. These data are then compared with the microdata from the OeNB Survey on Households' Financial Wealth.

4.1 Household Debt in Austria Moves up Sharply but Remains Low by International Standards

In 2006, the ratio of debt relative to disposable income among Austrian households was around 88%. In the last five years, this ratio has increased by approximately 11 percentage points. In the euro area, the level of household debt is almost equal to the disposable income, although there are marked differences between individual euro area countries.

In Austria, the ratio of debt to gross financial assets is, at 36%, somewhat higher than the euro area average (33%), and the accumulation of financial assets is comparatively low. Debt-to-wealth ratios are a lot more uniform within the euro area than the ratios of debt to disposable income, which may reflect, among other reasons, the fact that in countries where bullet loans are widely common (e.g. the Netherlands), part of people's savings are earmarked for loan repayment at the end of the term, whereas in Austria, bullet maturities are only customary for foreign currency loans. In other countries, for example in Italy, the steady accumulation of financial assets can



partly be ascribed to the fact that banks applied very restrictive lending policies over long periods of time. There are also other factors, such as an increasing demand for private pensions that may be of decisive influence for the greater accumulation of financial assets in some euro area countries.

In 2006, housing loans represented the majority (60%) of debt in Austrian households, consumer loans accounted for 18%, and other loans made up the remainder. For the most part (85%), housing loans are a long-term form of finance with maturities of more than five years. For consumer loans, terms of up to one year are also significant, comprising around 25%

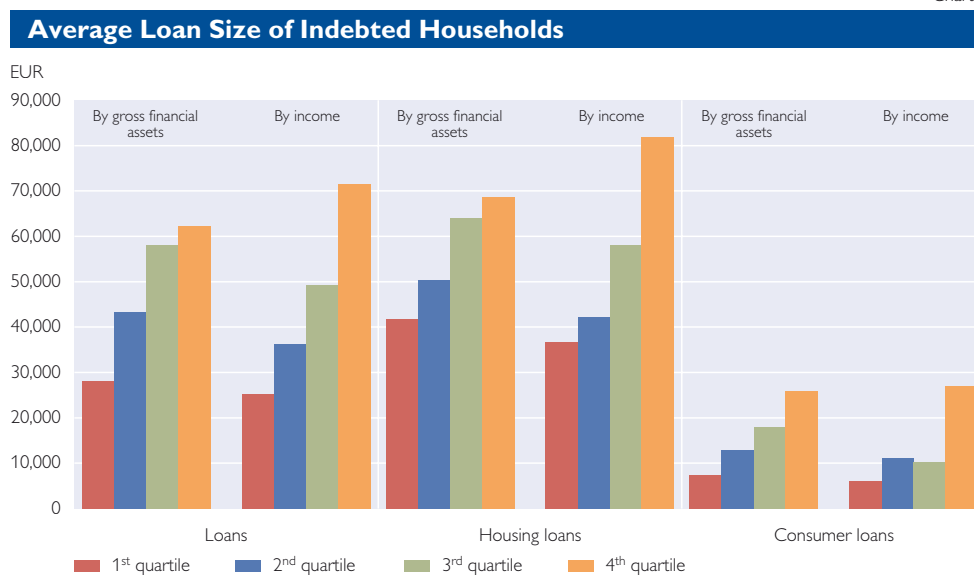
of consumer and other loans. In the category of housing loans, borrowings from building and loan associations make up 17% of the total lending volume. Foreign currency loans have become a widely used means of home financing, especially since the mid-1990s. At the end of 2006, the share of total foreign currency loans in the total lending volume came to around 31%.⁸

At the end of 2006, approximately 85% of newly acquired consumer loans and around 58% of newly contracted housing loans carried variable interest rates.⁹ Foreign currency loans bearing fixed interest constitute an exception to customary practice.

⁸ For information on the characteristics and prevalence of foreign currency loans in Austria, see Waschiczek (2002). The reasons prompting Austrian households to take out foreign currency loans are currently being examined in a joint research project conducted by the OeNB and the Swiss National Bank (Beer et al., 2007). Results are expected before the end of 2007.

⁹ The data on fixed interest periods are only available for newly originated loans, but not for existing commitments.

Chart 3



Source: Authors' calculations, based on data from the OeNB Survey on Households' Financial Wealth (2004).

4.2 Higher Income Tiers More Heavily Indebted

In section 4.1, the total lending volume was examined in relation to the income and financial assets of the entire household sector. The fact alone that only around 40% of all Austrian households actually have loan commitments clearly shows the disadvantages of this kind of analysis. Furthermore, the unequal distribution of debt across households has not been considered to date because aggregate data enable a comparison of averages only. In the following, therefore, the picture provided on the basis of aggregate data will be complemented and modified by information from microdata on households.

The OeNB Survey on Households' Financial Wealth shows that the average size of housing loans far exceeds that of consumer loans. In households with loan commitments, the median debt is EUR 25,000 (average: EUR 48,000), the median for housing loans is EUR 36,000 (average: EUR 57,600) and the median for consumer loans is EUR 7,000 (average: EUR

14,100). Both consumer and housing loans evidently increase in size as the levels of income and gross financial assets rise (chart 3). A comparison with Girouard et al. (2006) shows that – like the correlation between income and loan distribution – the dependency of loan size on income levels is also a factor in the ten OECD countries analyzed.

The pronounced difference between the average and the median figures indicates the wide spread in loan size within the group of debtors. One problem in interpreting this spread arises because neither the original loan amount nor the time when it was taken out is known. This problem is especially relevant if the research is focused on establishing how the size of household debt is influenced by socioeconomic characteristics, whereas the size of debt at the time of the survey is relevant in addressing other questions, for example the implications of household debt for financial stability.

The differences in frequency and size of debt are reflected in the break-

down of the outstanding debt volume by income and gross financial asset quartiles. More than 45% of total household lending is attributable to households in the highest income quartile, and around 30% to households in the highest financial asset quartile. In both cases, the difference is even more pronounced for consumer loans, although households with low financial assets take out consumer loans to a comparatively large extent.

The results derived from the microdata show that the aggregate data are insufficiently detailed to examine the ratio of debt to gross financial assets. According to data from the OeNB Survey on Households' Financial Wealth, the median for the ratio of liabilities to gross financial assets among borrowers is 119% (average: 360%). For consumer loans, the median is 44% (average: 150%), and for housing loans, it is 138% (average: 411%). The differences from the aggregate data underline the importance of using supplementary microdata when analyzing household debt.

5 Austrian Households Maintain Skeptical Attitude toward Debt

The OeNB's 2004 Survey on Households' Financial Wealth attempted to ascertain respondents' attitudes toward incurring debt. These self-as-

sessments can be compared with actual financial behavior.

About 80% of the respondents consider themselves to be savers rather than spenders, and only 15% stated that they would rather take out a loan than save for a long time to make a purchase. More than three-quarters of the survey participants thought that banks often grant loans too readily.

Borrowers, in contrast, less readily characterize themselves as savers and less frequently believe that banks issue loans too freely. Borrowers are more inclined to take out a loan rather than save for a long time to buy something. Agreement with this view is particularly strong among households that have taken out a consumer loan. Households with consumer loan liabilities are also less likely to hold the opinion that banks grant loans too readily than households with housing loan commitments.

Households that prefer to take out a loan rather than save first take out loans considerably more often, as their stated views would suggest. This is especially true for consumer loans, even more than for housing loans. Households that are more inclined to borrow have a slightly above-average income, but their gross financial assets are markedly below average, and, with an average age of 48 years, they tend to be younger than the rest of

Table 3

Attitudes toward Debt												
	I consider myself to be a saver						Rather than save for something for a long time, I prefer to take out a loan					
	Population		Housing loan borrowers		Consumer loan borrowers		Population		Housing loan borrowers		Consumer loan borrowers	
Agree	79	(0.00)	74	(0.02)	71	(0.03)	15	(0.01)	23	(0.02)	40	(0.03)
Disagree	21	(0.00)	26	(0.02)	29	(0.03)	85	(0.01)	77	(0.02)	60	(0.03)

Source: OeNB, based on the 2004 Survey on Households' Financial Wealth.
Note: Standard errors are given in parentheses.

the population (51 years). They are underrepresented among the age group of 60 years and older. Households headed by workers are most skeptical about loans.

6 Factors Weakening Households' Debt Servicing Capabilities

In this section we will examine to what extent households are able to fulfill their debt liabilities and in what way their debt servicing capabilities are influenced by the results of macroeconomic shocks, such as higher unemployment or interest rate hikes.

If households' liabilities exceed their available means, they are no longer able to service their debt commitments. The debt situation and the risk of excessive levels of debt in households cannot be adequately assessed using the aggregate debt level data provided by national accounts and financial accounts. For this reason, aggregate indicators need to be complemented with indicators on an individual household level. Data on payment arrears are available from the ECHP and EU-SILC surveys and show that payment arrears are far more common for consumer loans than for housing loans. If households are permanently unable to fulfill their liabilities, they have the option of claiming personal bankruptcy to eliminate their debt burden (annex 3). From the lenders' point of view, this means that they must renounce a part of the debt that is still owed to them.

The ratio of interest payments to disposable income gives an initial impression of the debt burden on households. According to the national accounts, this ratio came to around 3.3% in 2006. It should be noted that

this figure relates borrowers' interest payments to the income of the entire population, including households without loan commitments.

Considering that, according to the OeNB Survey on Households' Financial Wealth, 39% of Austrian households had taken out a loan and that, on average, these households had a higher income than those without loan liabilities, the ratio of interest payments to disposable income among loan debtors at the end of 2006 would have been around 7.5%. This indicator, however, neglects principal repayments, which are often considerably higher than interest payments, and the distribution of interest expenses within the group of loan debtors.

The ECHP microdata contain information on the overall size of repayments (principal and interest) for housing loans from 1995 to 2000. During this period, the median for the ratio of repayment liabilities to income fluctuated between 8% and 11% among housing loan borrowers, with the ratio generally being lower in households with an income exceeding the median. The limit at which loan repayments can become critical is often set at 30% of disposable income (ECB, 2005). According to the ECHP data, from 1995 to 2000, the proportion of Austrian households exceeding this limit ranged between 9% and 12%.

How does the share of households with repayment burdens in excess of the threshold value change in cases of income loss due to unemployment or if repayment liabilities increase because of rising interest rates?

This type of analysis has recently been carried out by a number of central banks (e.g. Herrala, 2006; Johansson and Persson, 2006; van

Rooij, 2002; Vatne, 2007; Zajaczkowski and Żochowski, 2006). The precise design of the simulation models differs in each case, depending on the data available. In most cases, the disposable income remaining after servicing debts and deducting living costs was the focus of interest. If one disregards the possibility of drawing on assets to service debt, it can be assumed that households whose freely disposable income is close to or less than zero will possibly be unable to repay their debt (hereinafter referred to as vulnerable borrowers). A further step is to calculate the change in the proportion of vulnerable borrowers that is caused by a rise in interest rates or by an increase in unemployment. The previously mentioned literature relies exclusively on partial analyses. The effects of interest rate hikes or rising unemployment are viewed in isolation from one another and from other changes. Where data on loan sizes are available, the model can be extended to assess the size of loans held by vulnerable borrowers and thus calculate the volume of loans potentially subject to default. From the banks' point of view, a further refinement of the estimation of loan defaults can also be obtained if the outstanding loan volume is contrasted with the financial assets that could be used to service debt. The study conducted by Herrala and Kauka (2006) is one of the few that goes beyond the descriptive presentation and modeling of scenarios. Building on the paper by Del-Rio and Young (2005), Herrala and Kauka project the development in the share of vulnerable borrowers by linking forecast values for determinants influencing the

emergence of repayment problems with microdata.

The results of simulations for Austria in the year 2000 are summarized below (see annex 2 for details of the methodology and assumptions used). The models are based on the studies by Johansson and Persson (2006) and Vatne (2007). In contrast to these authors, who use the level of disposable income less interest payments and living costs as an indicator of risk, our indicator is the ratio of repayment liabilities to income, for which we set the critical level at 30%. Data for this kind of simulation are available in the ECHP statistics only until 2000 and are limited to housing loans. As the input figures do not allow the effects of an interest rate hike and an increase in unemployment to be simulated directly, the consequences of a rise in repayment liabilities and the impacts of a certain proportion of employed persons becoming unemployed were examined instead. Due to the deficiencies in the available data, a series of further assumptions are necessary, which means that the significance of the simulation results is limited for the time being.¹⁰

The simulation results are displayed in table 4. With regard to unemployment as a risk factor, column 2 shows how many households would remain above the critical level if the respective percentage of employed persons were to become unemployed. Column 4 illustrates to what extent the proportion of vulnerable borrowers would go up in the event of a rise in repayment obligations.

The figures show that an increase in repayment obligations takes a heavier toll on borrowers than a rise

¹⁰ These assumptions are listed in annex 2.

in unemployment does, because higher unemployment affects only a proportion of debtors, whereas a growth in repayment obligations impacts all borrowers in equal measure. Moreover, households in which a member becomes unemployed may still be able to draw on sources of income other than that generated from employed work. The effects of interest hikes are overestimated in table 4, however, as fixed interest periods are not taken into account.

7 Household Debt Poses Low Level of Risk to Financial Stability

Loan debts in Austria are particularly prevalent among the middle-aged population segment (30 to 60 years of age). High-income households tend to accumulate more debt than those with lower incomes; the latter, however, are more heavily burdened by their indebtedness. Demand for consumer loans tends to be highest among high-income households with little financial assets.

The risks associated with private debt that could threaten financial stability in Austria are minimal. Due to the low levels of debt compared with other countries and owing to the fact that borrowing is concentrated in affluent households and households with high incomes, the level of household indebtedness in Austria does not pose a threat to financial stability.

The relatively high share of housing loans in the total debt volume is another indicator of low financial stability risk, as housing loans are generally

secured by the underlying property. One housing loan risk factor is the high proportion of foreign currency loans, which presents a quite considerable exchange rate risk to the liabilities of households. The most vulnerable borrowers tend to be borrowers of consumer loans with lower incomes and/or low levels of wealth.

Table 4

Proportion of Housing Loan Borrowers with a Ratio of Repayment Obligations to Income in Excess of 30% in 2000

%

Unemployment		Repayment obligations	
Proportion of employed people	Proportion of vulnerable households	Increase in repayment obligations	Proportion of vulnerable households
0 ¹	9.0	0 ¹	9.5
1	9.2	5	10.6
2	9.4	10	12.3
3	9.7	15	13.0
4	9.9	20	14.7
5	10.2	25	15.8
6	10.4	30	17.9
7	10.6	35	18.7
8	10.8	40	19.2
9	11.1	45	20.3
10	11.3	50	21.4

Source: OeNB, based on ECHP data.

¹ Due to differences in the households included in the analyses, the figures differ in the baseline scenario.

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Annex 1

Datasets used

The *European Community Household Panel (ECHP)* is a longitudinal survey that provides data on the incomes and living conditions of households in the countries of the EU. For Austria, data are available from the country's accession to the EU in 1995 until the discontinuation of the ECHP in 2001. As regards debt, households were asked if they had taken out housing loans, consumer loans or loans for other purposes. For housing loans, information on the repayment size (principal and interest payments) is also available. Furthermore, the respondents were asked whether they had any difficulties meeting their repayment obligations and whether the repayment of loans represented a financial burden for their households.

EU-SILC,¹¹ the EU's Survey on Income and Living Conditions, is the successor to the ECHP and provides data for comparative statistics on income, poverty and living conditions. Unlike the ECHP, the SILC survey used only a rotating panel. For this study, the EU-SILC cross-sectional data for 2003 and 2004 were available. The data on loans relate to mortgage repayment liabilities and the size of interest payments for home owners and to repayment liabilities for loans that are not linked to the home loans, i.e. consumer and other loans. Furthermore, for all loans, the question is asked whether repayment obligations represent a financial burden to the household and whether payment arrears have occurred. Even though

SILC is, to a certain extent, the successor to the ECHP, and ECHP and SILC data are presented as a time series, it must be borne in mind when interpreting the data that ECHP and SILC are two different surveys and that they are therefore only comparable to a limited extent.

The *OeNB's 2004 Survey on Households' Financial Wealth*¹² contains information on the size of loans taken out, broken down by loan type (e.g. bank loan, private loan) and by intended purpose (e.g. purchase of a home, a car, etc.). There are, however, no data available on interest rates and repayment obligations. In this survey, households were asked to indicate which types of loans they had taken out (e.g. bank loans, private loans) and to specify the amounts borrowed with each loan type. In addition, respondents were asked to indicate the purpose of each loan, distinguishing between housing and consumer loans. The category of housing loans includes loans taken out for the purchase, restoration, construction, conversion and renovation of houses and apartments. Loans used for other purposes are considered consumer loans. If a loan was taken out for different purposes and can thus not be clearly assigned to a specific purpose, the total loan volume is allocated to the category of housing loans to avoid double counting. As a result of this approach, it must be assumed that there is a (relative) underestimation of the size of consumer loans and a (relative) overestimation of the size of housing loans.

¹¹ More detailed information on the Austrian EU-SILC data can be found in *Statistics Austria (2006)*.

¹² For information on the *OeNB Survey on Households' Financial Wealth*, see *Beer et al. (2006a)*.

Annex 2

Methodology and assumptions used in simulation models

Data used: As no more recent data are available, the ECHP data for 2000 have been used. Commitments arising from consumer loans have not been taken into account because only information on the repayment obligations from housing loans was provided.

Methodology for simulating the effect of an interest rate hike: First, the repayment liabilities were increased by the respective percentages specified in table 4. In a next step, the proportion of vulnerable borrowers among housing loan borrowers was recalculated. This approach had to be taken because it was not possible to break down the repayment obligations by principal and interest amounts. Fixed interest periods could also not be taken into account.

Methodology for simulating an increase in unemployment: To simulate the effects of an increase in unemployment, it was assumed that the percentage of employed persons given in

table 4 would become unemployed and that these would then draw unemployment benefits. Using the resulting adjusted value for household income, the share of vulnerable borrowers among housing loan borrowers was recalculated. This procedure was repeated a thousand times for every increase in the unemployment rate that was examined, and the mean value of these repetitions was specified as the new proportion of vulnerable borrowers in table 4.

In this context, it was assumed that the probability of becoming unemployed was equal for the entire employed workforce. Consequently, the effects of an increase in unemployment tended to be overestimated, as the probability of becoming unemployed is likely to be lower among people drawing high incomes, and households with high incomes also take out loans more frequently. Furthermore, fluctuations in the income of households that (also) draw income from sources other than employed work were disregarded.

Annex 3

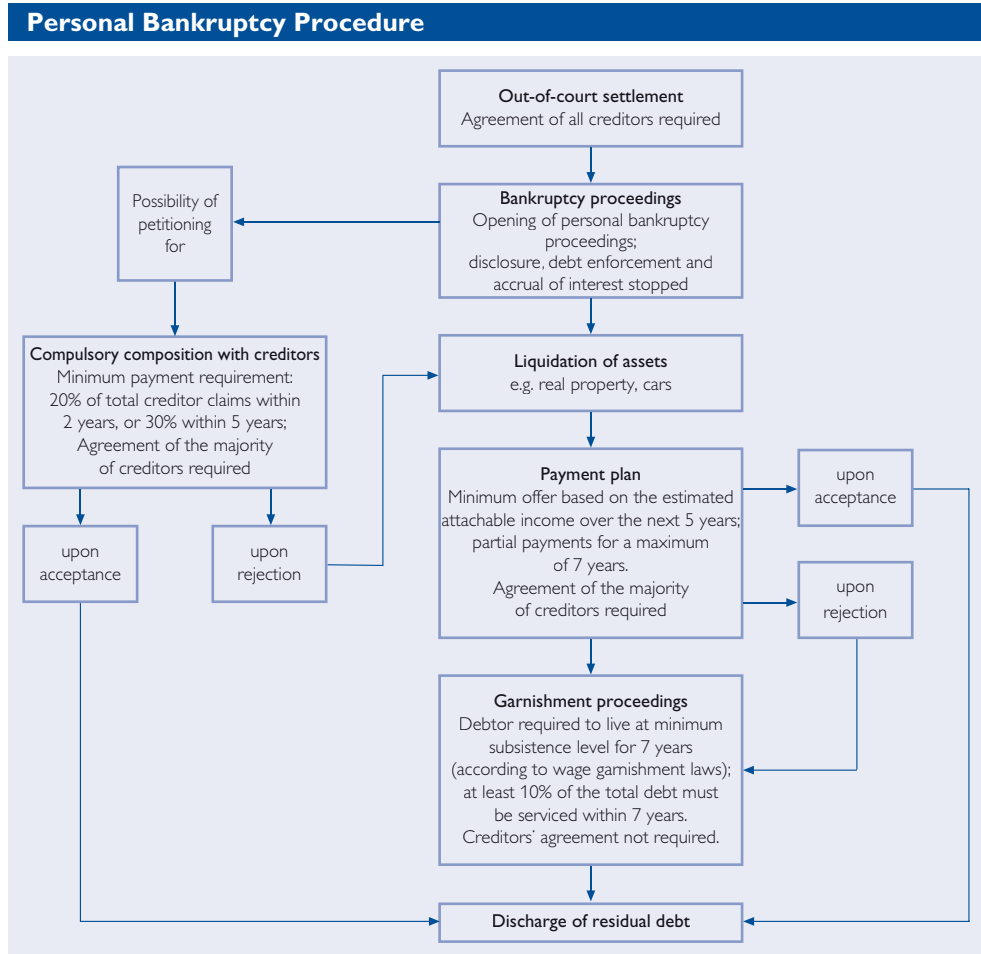
Box 1

Personal bankruptcy proceedings in Austria

The five pillars of personal bankruptcy law in Austria are:

- (1) **Costs borne by the government for debtors who are entirely without means.**
- (2) **Time limit for liens on income:** According to Austrian bankruptcy law, contractual liens expire after two years, and judgment liens immediately upon commencement of bankruptcy proceedings.
- (3) **Cost effectiveness of proceedings:** Proceedings are conducted at the district court level. The debtor retains control unless the court appoints a bankruptcy administrator; this type of cost-effective proceeding was put into practice in an initial 25% of all cases.
- (4) **No minimum repayment requirement:** In Austria, welfare recipients or former entrepreneurs with extremely high levels of indebtedness can discharge their debts at very low repayment quotas, provided that the required majority of creditors agree to the payment proposal. If no agreement is reached between debtor and creditors, which is the case in around 25% of personal bankruptcies, the bankruptcy court will initiate garnishment proceedings unless there are reasons for denial. Within a seven-year period, at least 10% of the total outstanding debt must be repaid through garnishment of the portion of the debtor's income exceeding the minimum level of subsistence. During this period, the debtor is not required to make payments, but he or she is obliged to seek employment and income and must not acquire any further debts. If the minimum repayment level is not attained, the court may still discharge the debt for reasons of equity.
- (5) **Creditor autonomy:** As with reorganizations and compulsory reorganizations in the context of corporate insolvencies, agreement by a qualified majority of creditors is required for payment plans in the context of personal bankruptcy proceedings.

Source: KSV (2005).



Source: ASB (2006).

Table 5

Loan Distribution in 2004 According to the OeNB Survey on Households' Financial Wealth

%	Total loans		Housing loans		Consumer loans		Housing and consumer loans		Foreign currency loans	
Population	39	(0.01)	29	(0.01)	14	(0.01)	4	(0.01)	4	(0.01)
By gross financial asset quartiles										
1 st quartile	40	(0.02)	23	(0.02)	22	(0.02)	5	(0.01)	1	(0.01)
2 nd quartile	35	(0.02)	28	(0.02)	11	(0.02)	4	(0.01)	4	(0.01)
3 rd quartile	44	(0.02)	37	(0.02)	12	(0.02)	5	(0.00)	6	(0.01)
4 th quartile	36	(0.02)	29	(0.02)	10	(0.02)	3	(0.01)	6	(0.01)
By income quartiles										
1 st quartile	25	(0.02)	15	(0.02)	12	(0.02)	2	(0.01)	1	(0.00)
2 nd quartile	35	(0.02)	27	(0.02)	11	(0.01)	3	(0.01)	4	(0.01)
3 rd quartile	47	(0.02)	37	(0.02)	15	(0.02)	5	(0.01)	4	(0.01)
4 th quartile	53	(0.03)	40	(0.03)	19	(0.02)	6	(0.01)	11	(0.02)
By occupation of household head										
Private sector	54	(0.02)	42	(0.02)	19	(0.02)	6	(0.01)	8	(0.01)
Public service	51	(0.03)	37	(0.03)	19	(0.03)	5	(0.01)	5	(0.01)
Self-employed	43	(0.04)	30	(0.04)	16	(0.03)	3	(0.01)	7	(0.02)
By marital status of household head										
Single	34	(0.03)	22	(0.02)	14	(0.02)	3	(0.01)	1	(0.01)
Married/partnership	45	(0.02)	35	(0.02)	15	(0.01)	5	(0.01)	6	(0.01)
Divorced/separated	37	(0.03)	25	(0.03)	15	(0.02)	2	(0.01)	3	(0.01)
Widowed	17	(0.03)	14	(0.03)	6	(0.01)	3	(0.01)	0	(0.00)
By age of household head										
<25	25	(0.07)	12	(0.05)	20	(0.06)	8	(0.05)	x	x
25 to 35	50	(0.04)	38	(0.04)	16	(0.02)	4	(0.01)	7	(0.02)
35 to 45	56	(0.02)	42	(0.02)	20	(0.02)	5	(0.01)	8	(0.01)
45 to 55	53	(0.04)	38	(0.04)	21	(0.03)	6	(0.02)	7	(0.02)
55 to 65	42	(0.03)	34	(0.03)	13	(0.02)	5	(0.01)	3	(0.01)
65 to 75	20	(0.02)	15	(0.02)	7	(0.01)	2	(0.01)	1	(0.00)
>75	13	(0.03)	9	(0.03)	5	(0.02)	1	(0.01)	x	x
By educational level of household head										
Compulsory education	27	(0.03)	18	(0.03)	12	(0.02)	3	(0.01)	1	(0.01)
Apprenticeship	40	(0.02)	30	(0.02)	14	(0.01)	4	(0.01)	4	(0.01)
Higher secondary education	41	(0.02)	31	(0.02)	15	(0.02)	4	(0.01)	7	(0.01)
University, technical/vocational college	44	(0.03)	33	(0.03)	14	(0.02)	3	(0.01)	6	(0.02)
By place of residence										
Federal provinces	41	(0.02)	33	(0.01)	12	(0.01)	4	(0.01)	5	(0.01)
Vienna	34	(0.02)	20	(0.02)	17	(0.01)	4	(0.01)	2	(0.01)
By inheritance										
Not inherited	40	(0.02)	28	(0.01)	16	(0.01)	4	(0.01)	4	(0.01)
Inherited	38	(0.02)	31	(0.02)	11	(0.01)	4	(0.01)	5	(0.01)

Source: OeNB, based on the Survey on Households' Financial Wealth (2004).

Note: Standard errors are given in parentheses.