Austrian Households' Financial Wealth: An Analysis Based on Microeconomic Data

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Microeconomic data on households are providing increasingly important information for many economic policy issues. This study presents the results of a survey conducted by the Oesterreichische Nationalbank on Austrian households' financial wealth. The descriptive presentation of household financial wealth also covers data on household debt and investment. Household income is shown to have a significant influence on the level of financial assets.

The results of logit estimates and a cluster analysis demonstrate the prominent role of net household income on investment decisions. By far the greatest volume of household financial assets is invested in savings deposits and in deposits made under building loan contracts, but 16% of all households also stated that they owned stocks.

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1 Introduction

Austrian financial accounts data show that the Austrian household sector's financial wealth increased by some 60% in nominal terms from the end of 1995 to mid-2005. During this period, the share of securities in financial assets expanded marginally; within this aggregate, investment shifted from bonds to stocks and mutual fund shares (Andreasch, 2006). With households'[1] financial assets on the rise and their investment in capital markets growing, interest rate and asset price developments are increasingly influencing households' investment behavior.

However, aggregate data reflect only the development of the household sector as a whole and do not provide any information about developments within this sector, which may well be quite heterogeneous. Consequently, micro asset, investment and debt structure data at the household level provide indispensable information about numerous issues relevant to economic policy.

A growing number of central banks recognize the importance of household microdata and thus conduct surveys to collect such data. Among others, the Federal Reserve Board (Bucks et al., 2006), the Banca d'Italia (Brandolini et al., 2004), the Banco de España (Bover, 2004) and De Nederlandsche Bank conduct such surveys. These surveys provide information important for research about e.g. the following issues: the consumption and savings behavior of households in relation to the level and composition of household income, wealth effects on consumption and on the transmission mechanism, any credit rationing measures, wealth and income distribution, the influence of income risk on households' consumption decisions, the impact of tax incentives on households' savings behavior, general financial knowledge, financial investment decisions, the consequences of different pension systems and financial stability-related aspects such as the exposure of household investments to capital market risk and finally household debt sustainability.

As it is important to link the variables at the center of analysis (e.g. consumption, investment or financial wealth) with the socioeconomic char-

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[1] *The term "households" in this study refers to private households.*

acteristics of households to analyze all of these issues, an analysis is possible only with the help of detailed microdata.

This study presents the results of a survey the Oesterreichische Nationalbank (OeNB) conducted on Austrian households' financial wealth in the summer and fall of 2004;[2] its purpose was to capture microdata on households' financial wealth, investment and debt. This paper is organized as follows: The main results of the survey are presented in section 2. The data on household investment and saving behavior provided by the survey are analyzed in the next sections. Additional details about the design of the survey and methodological aspects are explained in the notes. The study concludes with an annex of tables that provides data on selected issues.

In interpreting the data in this study, it should be noted that this is the only cross-section survey that has been conducted so far. Repeated cross-section surveys or, ideally, a panel would be desirable as a basis for research in most of the areas listed above.

2 Households' Financial Assets – Overview of the Main Results

2.1 Concept of Financial Assets in This Study

Based on information households provided on their financial assets, their gross financial assets were calculated as follows:

gross financial assets =
current account holdings[3]
+ savings deposits including deposits made under building loan contracts
+ value of bonds
+ value of stocks quoted on the stock exchange
+ value of mutual fund shares (equity funds, bond funds, mixed funds, real estate funds, hedge funds, money market funds)
+ value of holdings in enterprises
+ accumulated payment of life insurance premiums.

In this study, net financial assets are defined as gross financial assets excluding consumer loans. Net financial assets include neither home loans nor their counterpart, real estate holdings. Taking home loans into account might have distorted the estimate of household assets, whereas there is less danger of distortion in the case of consumer loans, as the value of the consumer goods purchased with such loans generally declines quickly.

2.2 Net Income Is the Prime Determinant of the Level of Financial Assets

The survey shows Austrian households' gross financial assets to average EUR 54,666[4] (median: EUR 23,579). Austrian households' gross financial assets are offset by consumer loans averaging EUR 2,876, so that average

[2] *The market research institute FESSEL-GfK collected the data.*

[3] *Only data sets that could be evaluated fully were used in this analysis. The survey did not cover cash holdings. After all, whether to include cash in assets is a matter of debate (transaction balances, loss of value etc.).*

[4] *A comparison of these data with financial accounts data shows gross financial assets as calculated on the basis of the survey represent about 50% of the financial assets recorded in the financial accounts. In an international comparison, the degree of consistency between micro- and macrodata is fairly high. The degree of consistency differs among investment categories (see also Andreasch, 2006, for financial accounts data). Hahn and Magerl (2006) provide information about Austrian households' total assets.*

net assets come to EUR 51,790 (median: EUR 21,855). The median values are far lower than the averages, indicating that both gross and net financial assets are highly unevenly distributed.

Considered by socioeconomic criteria, the level of financial assets is shown to depend markedly on household net income. Households with a monthly net income of less than EUR 750, for example, have net financial assets of EUR 6,621 (median: EUR 3,583); the net financial assets of households with incomes in excess of EUR 3,000 average EUR 117,779 (median: EUR 53,039).

The education level of the household head also accounts for substantial differences in wealth positions. Households headed by persons who have only completed compulsory education dispose of average net financial assets of EUR 19,148 (median: EUR 7,835). The amount of financial assets rises in parallel to the education level of household heads: the households of university and Fachhochschule (technical/vocational college) graduates own financial assets averaging EUR 93,586 (median: EUR 41,381).

Broken down by the occupational status of household heads, households headed by entrepreneurs have the by far highest net financial assets (average: EUR 189,778; median: EUR 38,372). The large gap between the average and the median in this category is noteworthy. Ranked by the size of average net financial assets, owners of business are followed by civil servants, employees, free professionals and farmers. Households headed by workers have the lowest average level of financial assets at EUR 24,539. At EUR 11,521, the median financial wealth of free professionals is lower than that of workers (EUR 15,528).

Broken down by the household head's age, the youngest group in the survey (18 to 29 years) has the lowest average net financial assets, namely EUR 15,816 (median: EUR 5,903). Net household financial wealth rises from category to category, peaking at an average of EUR 79,010 in the group of household heads aged 60 though 69.[5] The share of households with negative net financial assets is higher than average among 30- to 39-year-old household heads, as especially many households in this category have taken out consumer loans. A presentation of financial assets across age groups produces a hump-shaped curve, which corresponds to the theoretical expectations about individuals' asset developments according to the life cycle model.[6]

2.3 Debt Focuses on Housing Loans

Principally, only consumer loans are included in the calculation of net financial assets in this study (section 2.1). However, data on home loans and outstanding housing debt were also collected in the survey to complete the picture of household debt. These data and data on total household debt are examined below.

Overall, more than 40% of all Austrian households have taken out loans, 30% of which are for consumption purposes, nearly 60% for housing purposes and over 10% for both purposes. As in the case of financial

[5] *Median household financial assets rise up to the group of 50- to 59-year-olds.*

[6] *In principle cross-sectional data from a (static) age distribution at a specific survey date must not be interpreted as dynamic across the life cycle.*

assets, there is a positive correlation between borrowing and household net income. The relative share of consumer loans, however, is higher among low-income households. If one looks at the different age groups, households headed by 30- to 39-year-olds are most likely to borrow, with home and consumer loans equally important in this group. The reason for this age group's high debt is its high demand for long-term consumer goods and investment in housing.

Broken down by marital status, the share of household debt is highest among (married) couples. Households whose main residence is owner-occupied housing (homeowners) have an above-average number of loans and an especially high share of housing loans.

The average Austrian household has borrowed some EUR 20,000, with home loans accounting for approximately 85% of the loan volume. Households which take out home loans incur an average debt of roughly EUR 40,811 (median: EUR 18,000) through these loans. Factoring in home loans, Austrian households' average financial assets come to just above EUR 35,000 (median: roughly EUR 14,000). In the age group of 30- to 39-year-olds, high borrowing is reflected by low net financial assets (adjusted for consumer and home loans).

Homeowners have higher average net financial assets than households with rental housing, and even after inclusion of home loans, their average net financial assets are only marginally lower than those of households with rental housing – their median financial assets are in fact considerably higher.

2.4 Savings Deposits Are the Main Investment

Savings deposits[7] remain the main investment choice of Austrian households and account for more than 42% of aggregate gross financial assets. Building loan contracts account for an additional 9%. The majority of Austrian households have opted for these two types of investment. 93% of all households own savings deposits, 71% own a building loan contract. Life insurance policies represent another popular investment product. 54% of all Austrian households own a life insurance policy, and 17% of gross financial assets are invested in such policies.[8] 16% of households own stocks, with 8% of gross financial assets placed therein. Bonds account for 6% of gross financial assets, and 11% of households own such debt securities. Also, 11% of all households own mutual fund shares, which represent 5% of gross financial assets. 3% of all households own holdings in

[7] *Savings deposits include passbook savings accounts, savings accounts, savings bonds and premium-aided savings.*

[8] *For technical reasons, the value of the stock of life insurance assets was calculated on the basis of premium payments in this survey, so that the actual value of life insurance assets tends to be underestimated.*

enterprises, which represent 10% of the volume of gross financial assets.

Using a different calculation method,[9] the average share of savings deposits in gross financial assets is approximately 44%, building loan contracts account for 16%, life insurance policies for 20%, stocks for 3%, mutual fund shares for 2% and bonds for 2% of gross financial assets. Holdings on current accounts represent 11% of financial assets, with the share declining sharply as income rises. Households with incomes of below EUR 750 hold nearly a third of their financial wealth on average on their personal accounts; the share drops to 5% for households with incomes of over EUR 3,000. Whereas capital market instruments[10] and holdings in enterprises[11] rise with income. The average share of stocks in gross financial assets rises from 0.3% among households with incomes below EUR 750 and rises to 5.8% among households with incomes above EUR 3,000.

Income is obviously the key factor in investment. As income rises, the share of assets held on current accounts and in savings deposits, including building loan contracts, declines, whereas the weight of capital market instruments rises. The share of capital market instruments in individual household categories also rises in parallel to income. Only 1% of all households with net incomes of less than EUR 750 own stocks, but 33% households with incomes of more than EUR 3,000 own stocks; the pattern is similar for bonds and mutual fund shares.

3% of households have holdings in enterprises; the average net financial assets of this group come to over EUR 330,000 (median: roughly EUR 115,000), which is far higher than the average net financial assets of the total population.

A similar survey was conducted in Vienna in 1990 (Mooslechner, 1997). While the differences between some definitions and delimitations limits comparisons between the two surveys, some changes in Viennese households' investment behavior can nevertheless be discerned: The average share of holdings on current accounts and savings deposits in Viennese households' gross financial assets has declined markedly, whereas the weight of capital market instruments in their portfolios has risen noticeably. Above all, their holdings of stocks have expanded, but higher investment in mutual fund shares is also likely to have been at the heart of the

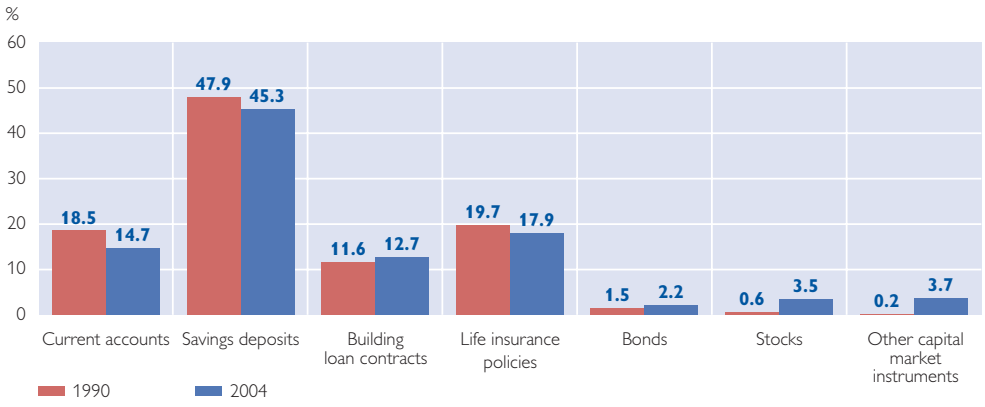
[9] *The average share of investment product j in gross financial assets is calculated as* $Share_j = \frac{\sum_{i=1}^{N} \frac{X_{ij}}{BV_i}}{N}$, *with* $i = 1, \ldots, N$, *representing a household in the respective investment category,* X_{ij} *representing the amount invested by household i in investment product j and* BV_i *representing the gross financial assets of household i. This calculation method weights all households equally and thus reflects average investment behavior better than other methods. By contrast, the calculation method* ($Share_j = \frac{\sum_{i=1}^{N} X_{ij}}{\sum_{i=1}^{N} BV_i}$) *used in the previous paragraph is better suited to analyzing the allocation of total financial assets among the different investment products.*

[10] *Stocks, bonds and mutual fund shares.*

[11] *The survey questions called for a breakdown by individual or family ownership and stakes in limited liability companies.*

Chart 1

Change in Composition of Gross Financial Assets over Time (Vienna)



Source: Mooslechner (1997), authors' calculations based on a survey conducted by FESSEL-GfK.

Note: As definitions of life insurance products differ, their comparability is limited.

increase in the category other capital market instruments.[12]

3 Cluster Analysis: 13% of All Households Feature a Strong Tendency to Invest in Capital Markets

A cluster analysis[13] was performed directly on the basis of households' investment strategies rather than on the basis of their socioeconomic characteristics. Households are grouped into clusters that can be considered the statistically most homogeneous groups in terms of investment strategies. The aim is to draw conclusions about demographic characteristics on the basis of the financial products[14] these households have chosen to invest in and in this manner to identify possible determinants of the investment decision.

The cluster analysis identifies four clusters; the first cluster may additionally be subdivided into two subclusters (clusters 1a and 1b). Cluster 1 covers "traditional" investors. The financial wealth of households in cluster 1a is limited to deposits, building loan contracts and life insurance policies. The prevalence of building loan contracts and the average share of building loan contracts in gross financial assets are highest in this cluster. Households in cluster 1b invest above all in savings products with a higher return (e.g. a capital savings account, premium-aided savings). Their holdings of capital market instruments are higher than those of cluster 1a households, but the amount invested is fairly low. This cluster also contains some households with high holdings in enterprises.

The households subsumed in cluster 2 are capital market oriented. The average share of capital market instruments in these households' financial assets is around 30%. The households in cluster 3 may be defined as those with a minimum of investment products, as all investment products

[12] *1990: dividend right certificates, mutual fund shares, participation certificates, real estate bonds; 2004: mutual fund shares, holdings in enterprises.*

[13] *The methods used for the cluster analysis are described in the notes.*

[14] *See the notes for the variables/financial products used.*

Table 1

Results of the Cluster Analysis

	Cluster 1	Subcluster 1a	Subcluster 1b	Cluster 2	Cluster 3	Cluster 4
		Traditional investors	Traditional investors who tend to invest in more sophisticated products	Capital market-oriented households	Households with a minimum of investment products (passbook savings account)	Capital market orientation with a lower volume of investment
	%					
Distribution of households	52.7	39.8	12.8	12.6	22.7	12.0
	EUR					
Net financial assets, mean	41,186	32,492	68,141	166,661	18,618	39,940
Net financial assets, median	23,011	19,788	35,701	92,214	6,590	23,070
Consumer and housing loans, mean	19,924	19,050	22,633	28,782	10,983	25,058
	% of households					
Distribution of capital market instruments						
Mutual fund shares	5.2	4.6	6.9	49.9	2.9	14.3
Bonds	5.4	4.4	8.4	51.2	2.9	5.5
Stocks	3.7	2.2	8.6	84.6	4.4	16.6
Holdings in enterprises	2.2	2.6	1.0	6.7	1.1	2.8
Individual saving for retirement						
Personal pension plans	61.1	58.5	69.2	84.4	37.3	62.1

Source: Authors' calculations based on a FESSEL-GfK survey.

are only represented to a small degree. The households in cluster 4 have a low level of assets, but endeavor to diversify their investment. Therefore, in relative terms, their investment in capital market instruments is high.

If the households grouped in these clusters are broken down by socioeconomic characteristics, income and financial assets are above average in cluster 2, where portfolio holdings are strongly diversified. The share of (married) couples is above average in this cluster, and the share of household heads with a university or Fachhochschule degree is far higher than in the other clusters.

Households in cluster 4, the cluster with diversification and a low level of financial wealth, may be considered a younger variant of the households in cluster 2. The heads of these households also have high income and education levels. This cluster comprises an above-average number of young, unmarried household heads, as well as owners of businesses.

The net financial assets of the households in cluster 1a average EUR 32,492. Households with mid-level incomes (EUR 1,350 to EUR 2,250) predominate in this cluster. The shares of graduates of a medium-level technical and vocational school or an apprenticeship and of workers are very high in this cluster. The net financial assets of the households in cluster 1b are twice as high at EUR 68,141. The share of households with fairly high incomes is above average. This cluster features a very broad distribution of financial assets. Civil servants are represented at an above-average rate, whereas the share of owners of businesses and free professionals is low.

At an average of EUR 18,618, net financial assets are lowest in cluster 3. The level of net financial wealth is below the median in nearly 80% of

Table 2

Influence of Socioeconomic Factors on Investment Decisions

	Building loan contract	Stocks	Mutual fund shares	Bonds	Life insurance policies	Capital savings account
Employment of household head						
Occupational status (worker, employee, entrepreneur)						
Gender of household head						
Marital status of household head						
Housing status (owner-occupied versus rental)	***	**	**	*	*	
Education of household head						
Type of employment (private sector/public sector/self-employed)				***		
Household size	***	**				
Age of household head				***	***	**
Household net income	***	***	***			

Source: OeNB.

*Note: Level of significance: * = <0.1; ** = <0.05; *** = <0.001. Shading indicates the interaction between age and household net income.*

the households. 10% of the households have negative net financial wealth. The high share of retired people in this cluster is striking – many of the households in the cluster are headed by older people and widows/widowers. Moreover, the share of self-employed persons is very high in this cluster.

4 Logit Estimates: Income Determines Investment Decisions

The socioeconomic characteristics of households play a key role in their choice of investment products. The question of which of these characterisitics have the biggest impact on households' investment strategy can be analyzed using logit models that estimate the probability of holding a certain investment product as a function of specific household characteristics.

Income is shown to be a decisive and highly significant determinant of households' investment decisions in the case of all investment products.[15] Moreover, for capital savings accounts and bonds, but also for life insurance policies, there is a link to age (which is in turn linked with income); the probability of a household owning these products rises with age, as does income. The housing status is one important determinant for the ownership of a building loan contract. The regression coefficients show that homeowners tend to own such contracts more often than renters do. Moreover, household size has an effect on investment decisions. As expected, the more people there are in a household, the greater the probability is that the household owns a building loan contract.

The housing status also plays a major role in stock and mutual fund share investment. For bonds, the employment status is important: The probability of owning bonds declines for the self-employed, for instance.

[15] *Various criteria were used to assess the goodness of the logit estimates. To calculate classification accuracy, logit coefficients were used to determine the probability with which a household owns a particular investment product. While goodness criteria such as Nagelkerke's R-squared, Cox and Snell's R-squared and the total classification accuracy produce fairly satisfactory results, the classification accuracy of both subgroups (ownership/nonownership) is only moderately satisfactory.*

5 Saving for Retirement: Life Insurance Policies and Savings Deposits Top Other Investment

The pension reforms of recent years were aimed at boosting the importance of making private pension provisions in households' financial planning (individual saving for retirement). Respondents were asked to assess the importance of making private provisions for retirement, to state what measures they had taken and to specify the provisions they had made. Unlike the other questions in the survey, these questions on saving for retirement were addressed directly to the respondent and hence do not apply to the entire household. The answers indicated that more than 80% of the persons questioned consider individual saving for retirement (in addition to the statutory scheme) very important or rather important. The importance of individual saving for retirement declines as the age of the household head increases. By profession, owners of businesses and free professionals see individual saving for retirement as most important.

Nearly 60% of the respondents report having saved for their own retirement. The survey covered all forms of investment the respondents considered saving for retirement, i.e. not just investment specially designed for this purpose (e.g. subsidized personal pension schemes), but also assets such as passbook savings accounts.

Considered by age, the frequency of individual saving for retirement was highest in the group of 30- to 50-year-olds. This is the age cohort that is most heavily affected by the pension reforms and in which most people work. Broken down by occupational status, saving for retirement is most prevalent among owners of businesses. 71% of all civil servants, whose pensions are better secured than those of other professional groups, save for their own retirement. The higher a group's income is, the more likely it is that its members will provide for old age. Higher income enlarges the scope for saving for old age, but also provides more economic incentive to do so. High incomes prior to retirement are often preceded by a steep life-cycle income curve. Thus, a longer contribution period used to calculate pensions has a negative impact on the size of the expected pension. Moreover, households can expect the income replacement ratio for incomes above the earnings cap for pensions to be low. The incidence of individual saving for retirement also rises strongly in parallel with the size of household financial wealth.

Households cite uncertainties about the state pension system as reasons for individual saving for retirement. As their financial assets increase, households set greater store by profitability, probably because they become less dependent on the state pension system.

Logit estimates show that income and age are highly significant for the investment in individual retirement savings, as are the occupational status, the housing status and education. The higher their education level is, the more likely household heads are to save for retirement themselves.

The most frequently cited retirement savings options are life insurance policies, savings and building loan contracts. The type of individual retirement savings is strongly influenced by age. Savings deposits play an increasing role among older household heads, whereas life insurance

policies and building loan contracts become less important. Virtually no household head over 60 years of age opts for investment in state-subsidized pension schemes. Higher-income households invest less in savings deposits; the importance of all other individual retirement savings measures rises in line with income. The rise in investment for retirement is especially pronounced for securities, state-subsidized options and the acquisition of real estate.

A breakdown of individual saving for retirement by clusters shows the share of investing households to be highest in cluster 2 (85%), the group of affluent households with diversified investment. The lowest percentage (37%) of households which have invested in individual retirement savings is observed in cluster 3, which comprises households with a minimum of investment products. This small share may be attributed to the fact that these households have little financial wealth and that this cluster comprises a large share of retired persons.

6 Households' Saving Behavior: Roughly Half of All Households Save Regularly

Households report that the main source of savings is disposable income not required for consumption (relinquishment of consumption). As income and financial assets rise, the role of inheritances increases. 20% of households with very high net financial assets name inheritances as a major source of their savings. By comparison, about 9% of the total population lists inheritances as a source of savings.

More than half of the respondents report that they save regularly or make deposits under a savings plan; 44% save at irregular intervals or put aside whatever income is left at the end of the month. 5% of households are unable to save. The higher households' income and financial wealth are, the more they save on a regular basis. 24% of households with net incomes of below EUR 750 state that they are unable to save; 12% have no savings.

Households' saving capacity varies strongly among clusters. As is to be expected, the affluent households in cluster 2 have the greatest saving capacity; more than 16% of these households state that they are able to save more than EUR 10,000 a year. Only 3% to 6% of the households in the other clusters fall into this category. Households in cluster 3 have the lowest saving capacity. More than 60% of the households in this cluster can save no more than up to EUR 1,000 a year; between 10% and 33% of the households in the other clusters fall into this category. The low saving capacity of cluster 3 households is also reflected in their savings behavior. Some 70% of these households save at irregular intervals or cannot put aside any funds. In the other clusters, the share of regular savers comes to over 50%.

7 Summary and Conclusions

This study presents a first overview of the results of a survey conducted by the OeNB on Austrian households' financial wealth. The survey provides the first microdata on Austrian households' financial position in a number of years. Differences in the size and composition of wealth and debt among households are today considered an important source of information for a number of important economic policy issues. Such issues

include the transmission of monetary policy impulses or the consumption and saving behavior of households as well as changes in investment structures in financial markets triggered by pension system reforms. In this respect, the survey results presented here represent first and foremost a comprehensive data set which may be tapped to help analyze a large range of issues and to compile in-depth analyses on particular aspects.

The OeNB survey results reveals some interesting links: For example, household income is shown to have a dominant influence both on the size of financial wealth and on investment structures. Moreover, factors like education and the occupational status of the household head play a determining role. These factors, in turn, exhibit a connection to household income. Somewhat more than 40% of Austrian households have taken out loans. Examined by the purpose of the loan, housing loans predominate. According to the survey, housing loans account for some 85% of the total volume of loans, and about 70% of the households with debt have taken out a housing loan. The highest level of household debt was found among households headed by persons aged 30 to 39, the reason for indebtedness being the purchase of consumer durables and investment in owner-occupied housing. Consequently, most of the households with negative net financial wealth belong to this category.

Savings deposits and deposits on building loan contracts remain by far the most important investment vehicles of households. 93% of all households have savings deposits; 71% have building loan contracts. These two forms of investment account for an average share of 60% of financial assets. The importance of capital market instruments in household portfolios has risen by comparison to the 1990 survey. Today, 16% of households already state that they own stocks, with stocks representing 7.5% of financial assets. 11% of households own bonds, 11% own mutual fund shares.

Cluster analyses provide evidence of household investment patterns, which range from minimum investment to marked investments in capital markets. The results of logit estimates and cluster analysis demonstrate the prominent influence of net household income on investment decisions.

Pension reforms which promote individual saving for retirement are one of the key influences on households' financial behavior. 80% of the respondents consider individual saving for retirement important, and nearly 60% have taken steps to invest for retirement. The predominant financial instruments of choice are traditional ones such as life insurance policies, savings deposits and building loan contracts. Only a fairly limited number of households have opted for capital market instruments and financial instruments designed especially for saving for retirement. Finally, somewhat more than half of all households indicated that they save on a regular basis; 5% of all households are unable to save.

Overall, the results confirm the usefulness of microdata on household financial assets and debt for analytical purposes. The microdata on investment permit the establishment of an analytical link between the risk undertaken by households and their capacity to absorb adverse price developments, which is determined among other things by the size of income and

financial wealth. Similarly, the microdata on debt allow for a comparison of debt with the assets purchased with the loans that constitute debt. The data also make it possible to assess the influence of interest rate and income shocks on households' capacity to repay loans. Households' different levels of financial wealth and differences in portfolio composition raise expectations that the impact of monetary policy on wealth and hence on consumption and savings also differs markedly among households. Finally, the current promotion of individual saving for retirement by economic policymakers is inducing changes in household behavior, suggesting that such investment will have a major impact on macroeconomic variables and financial markets in the future.

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Notes

Survey Design

FESSEL-GfK Institute for Market Research uses multistage stratified clustered address random sampling to conduct representative surveys. The survey was conducted in the summer and fall of 2004 by means of face-to-face and written interviews. A total of 2,556 analyzable data sets were compiled (in Vienna, 1,026 of an original 1,869 addresses and in the provinces 1,530 of 2,408 addresses provided results). Within Austria, households were stratified at the province level, and in Vienna, households were stratified by the 23 political districts. Within the districts, the prospective respondents were selected at random. To make the sample more representative, the households were weighted within the sample. The age, occupation and education of the household head and the size of the household, the presence of children up to 14 years of age and the district were factored into the weighting. The interview partner was the household head or the household member with the most accurate knowledge about the respective household's finances. 87 questions were asked, covering e.g. the sociodemographic characteristics of the households, assets, asset sources, information sources about financial market topics and approaches to financial market issues.

Calculation of Credit Aggregates

Housing credits are loans taken out to buy, restore, construct, adapt or renovate houses or apartments. Loans taken out for other purposes were classified as consumer credits. The households were asked to state the purpose and size of various types of loans (e.g. bank loans, private loans). No distinction by the purpose of a loan was possible in cases in which households took out more than one loan of a particular type for different purposes. In this case, the loans were subsumed under housing loans. Thus, it is likely that the volume of consumer loans is (relatively) understated and the volume of housing loans is (relatively) overstated.

Calculation of the Value of Life Insurance Policies

Households were asked to provide the following information about life insurance policies: the year in which they took out a life insurance policy, the premium amount and the frequency of premium payments. The value of life insurance policies is not known and is difficult to assess, as life insurance policies are not traded in a standardized form like quoted stocks, bonds and mutual fund shares. This approach is considered the best possible approximation; however, the amount invested is highly likely to be understated.

Cluster Analysis

Ward's hierarchical clustering method and the partitioned K-means procedure were used as complements. First, the number of clusters was determined with Ward's hierarchical method; this number was confirmed by means of the K-means algorithm.

With the K-means procedure, the centroid of a cluster represents the respective cluster. The procedure defines this centroid and assigns the remaining households to the cluster to whose center they are closest. A three-stage

iterative algorithm is used. Starting from an initial assignment of the data points to the cluster centroids (in this case from the group mean values of the clusters determined by means of Ward's method), the households are assigned to the cluster centroids in a way that minimizes the sum of squares of distances between the data and the corresponding cluster centroids. In a next step, the cluster centroids are recomputed. This iteration process is terminated once the modification of cluster centers no longer produces changes in the assignment of the classification objects.

The variables used to draw conclusions about demographic characteristics were the holding of passbook savings accounts, savings accounts, capital savings accounts, premium-aided savings, building loan contracts, life insurance policies, bonds, stocks, mutual fund shares and holdings in enterprises.

Logit estimates

The following characteristics were taken into account in the computations as independent category variables:

– Head of household: education level, employment, occupational status, type of employment, gender, marital status, age; and
– Household: housing status, size of household, household net income.

Annex

Table 3

Households' Financial Assets

			Gross financial assets		Consumer loans	Net financial assets (3–4)		Housing loans	Total loans (4+6)	Net financial assets 2 (3–7)	
	1	2	3		4	5		6	7	8	
	Frequency		Mean	Median	Mean	Mean	Median	Mean	Mean	Mean	Median
		%	EUR								
Austria total	**1,430**	**100.0**	**54,666**	**23,579**	**2,876**	**51,790**	**21,855**	**16,758**	**19,634**	**35,032**	**14,135**
Age of household head											
18 to 29	112	7.8	17,217	6,648	1,402	15,816	5,903	12,300	13,701	3,516	1,386
30 to 39	271	19.0	33,971	17,047	4,920	29,050	13,654	25,280	30,201	3,770	3,097
40 tp 49	358	25.0	59,799	35,014	3,749	56,049	34,436	25,725	29,475	30,324	19,787
50 to 59	237	16.6	66,558	36,712	3,101	63,457	35,475	19,156	22,257	44,301	26,155
60 to 69	247	17.3	80,610	29,397	1,600	79,010	28,210	5,448	7,048	73,562	24,848
70 to 79	164	11.5	50,144	17,377	432	49,712	16,756	2,861	3,293	46,851	16,182
80 and over	41	2.8	41,801	16,107	1,906	39,895	14,100	3,976	5,882	35,918	12,740
Occupation of household head											
Self-employed	43	5.0	48,975	14,889	10,762	38,213	11,521	17,360	28,122	20,852	6,928
Entrepreneur	50	5.8	195,101	43,151	5,323	189,778	38,372	26,183	31,506	163,595	18,278
Employee	420	48.4	52,610	27,059	4,011	48,599	24,172	28,015	32,026	20,584	10,935
Public servant	150	17.3	67,468	41,453	3,684	63,784	37,473	22,468	26,152	41,316	24,600
Farmer	19	2.2	35,148	26,722	311	34,838	26,722	9,955	10,266	24,883	10,507
Worker	185	21.3	27,513	17,633	2,974	24,539	15,528	17,862	20,836	6,677	8,475
Jobholders total	868	60.7	57,495	26,319	4,065	53,429	23,585	23,861	27,926	29,568	11,805
Not employed total	562	39.3	50,296	20,453	1,038	49,257	19,392	5,787	6,825	43,471	16,538
Net household income											
Up to EUR 749	76	5.3	6,912	3,775	291	6,621	3,583	2,144	2,435	4,477	2,942
EUR 750 to EUR 1,349	297	20.8	16,082	8,753	1,278	14,804	7,750	6,323	7,602	8,480	6,550
EUR 1,350 to EUR 2,249	506	35.4	43,385	23,341	2,209	41,176	21,415	12,514	14,723	28,662	16,049
EUR 2,250 to EUR 2,999	264	18.5	57,151	37,380	2,172	54,979	36,117	23,212	25,384	31,767	21,493
EUR 3,000 and over	287	20.1	124,814	59,768	7,035	117,779	53,039	32,966	40,001	84,813	38,786
Net financial assets											
Net financial assets ≤ median	715	50.0	10,757	9,175	4,125	6,632	7,198	12,229	16,354	−5,597	4,300
Net financial assets > median	288	20.2	34,096	32,344	1,920	32,176	31,748	21,912	23,832	10,264	27,522
Net financial assets > double the median	289	20.2	68,648	64,400	1,022	67,626	63,942	21,865	22,887	45,761	56,987
Net financial assets > five times the median	138	9.7	295,417	179,628	2,279	293,139	179,446	20,147	22,426	272,992	167,800
Marital status of household head											
Single	249	17.4	34,059	10,798	2,359	31,701	10,203	7,609	9,967	24,092	6,617
Married/partnership	851	59.5	70,395	36,031	3,409	66,986	34,514	22,253	25,662	44,733	22,146
Divorced/separated	173	12.1	29,062	14,325	2,977	26,085	11,268	13,749	16,727	12,335	8,970
Widowed	157	11.0	30,312	13,000	696	29,617	12,761	4,806	5,502	24,811	10,975
Housing status											
Owner-occupied housing	798	55.8	64,119	33,158	2,722	61,398	31,935	26,613	29,335	34,785	18,632
Rental housing	633	44.2	42,744	14,187	3,070	39,674	11,911	4,331	7,401	35,343	10,670
Education level of household head											
Mandatory schooling at most	195	13.6	20,197	8,802	1,050	19,148	7,835	6,460	7,510	12,687	7,139
Apprenticeship, vocational/ technical school	729	51.0	42,360	21,774	2,462	39,899	19,859	15,109	17,570	24,790	13,991
Academic secondaary school, higher-level technical and vocational school	329	23.0	78,503	31,235	3,512	74,990	30,445	23,036	26,548	51,954	19,463
Fachhochschule, university	177	12.4	98,998	45,179	5,411	93,586	41,381	23,209	28,621	70,377	29,387

Source: Authors' calculations based on a FESSEL-GfK survey.

Table 4

Holdings of Savings and Capital Market Instruments

Share of Households with Investments

%

	Passbook Savings Account	Building loan contract	Mutual fund shares	Bonds	Stocks	Holdings in enterprises
Austria total	**85.0**	**70.6**	**11.4**	**10.6**	**15.7**	**2.6**
Age of household head						
18 to 29	69.1	60.3	8.4	5.7	14.8	2.9
30 to 39	82.4	68.2	14.1	6.8	15.2	2.6
40 to 49	87.5	83.6	15.0	11.4	17.5	3.6
50 to 59	87.1	75.3	9.7	12.2	17.2	1.9
60 to 69	86.1	73.6	9.9	14.3	17.2	3.4
70 to 79	87.7	48.4	8.4	12.6	10.5	0.7
80 and over	94.3	44.2	2.8	3.9	6.7	0.0
Occupation of household head						
Self-employed	73.0	59.0	14.0	9.4	20.1	7.4
Entrepreneur	69.1	59.8	20.4	11.3	19.0	28.5
Employee	84.9	77.3	16.0	11.0	19.6	2.2
Public servant	88.4	84.7	15.2	14.0	22.8	3.0
Farmer	95.4	82.2	7.4	10.9	4.1	0.0
Worker	80.4	73.8	6.0	6.1	7.0	0.2
Jobholders total	83.3	76.0	13.7	10.4	17.1	3.6
Not employed total	87.7	62.2	7.9	10.9	13.4	1.0
Net household income						
Up to EUR 749	63.4	39.2	0.3	1.9	1.1	0.0
EUR 750 to EUR 1,349	83.9	54.0	3.5	3.0	5.3	0.2
EUR 1,350 to EUR 2,249	83.9	70.6	8.4	8.9	11.0	2.4
EUR 2,250 to EUR 2,999	90.7	82.4	15.0	13.4	21.9	2.9
EUR 3,000 and over	88.6	85.2	24.5	21.4	32.7	5.8
Net financial assets						
Net financial assets ≤ median	79.0	57.1	3.6	2.3	4.4	0.4
Net financial assets > median	90.7	81.2	9.2	7.3	12.0	3.0
Net financial assets > double the median	91.6	86.6	16.6	15.7	25.9	2.4
Net financial assets > five times the median	90.6	84.8	45.7	50.0	59.8	13.5
Marital status of household head						
single	74.8	58.5	11.3	7.9	12.1	2.8
married/partnership	89.1	79.0	13.6	13.1	19.4	3.2
divorced/separated	79.2	61.8	5.1	6.2	10.7	0.9
widowed	85.3	53.7	6.7	6.7	6.6	0.9
Housing status						
Owner-occupied housing	89.0	78.6	13.1	13.3	19.4	3.0
Rental housing	79.9	60.5	9.3	7.3	10.9	2.1
Education level of household head						
Compulsory education at most	81.3	53.0	3.1	3.4	5.5	0.0
Apprenticeship, vocational/technical school	86.1	71.2	8.4	8.4	12.1	2.1
Academic secondary school, higher-level technical and vocational school	82.7	75.6	16.2	14.1	22.9	3.9
Fachhochschule, university	88.7	78.0	24.3	21.3	28.0	4.8

Source: Authors' calculations based on a FESSEL-GfK survey.

Table 5

Individual Saving for Retirement

% of respondents

	Have you taken steps to save for retirement?				Why are you saving for retirement?[1]		
	yes	no	don't know	total	uncertainty about the state pension system	profitability considerations	other
Austria total	**58.8**	**38.6**	**2.6**	**100**	**69.0**	**29.9**	**11.8**
Age of household head							
18 to 29	45.0	52.0	3.0	100	81.4	15.9	13.9
30 to 39	67.1	29.5	3.4	100	84.7	19.8	5.5
40 to 49	69.3	28.6	2.1	100	78.5	29.4	7.7
50 to 59	61.7	36.5	1.8	100	62.1	30.0	14.3
60 to 69	49.2	48.8	2.0	100	47.0	44.5	18.9
70 to 79	45.1	50.7	4.3	100	49.9	40.5	16.2
80 and over	44.1	52.6	3.4	100	28.0	33.6	39.2
Occupation of household head							
Self-employed	65.8	32.4	1.8	100	73.7	31.6	7.0
Entrepreneur	78.7	20.3	1.0	100	73.6	30.4	10.1
Employee	65.9	31.7	2.4	100	79.0	25.3	10.1
Public servant	70.6	25.9	3.5	100	74.3	33.9	5.6
Farmer	47.4	51.2	1.4	100	78.7	45.0	0.0
Worker	63.3	34.4	2.3	100	80.2	18.8	10.2
Jobholders total	66.5	31.1	2.4	100	77.8	26.5	9.0
Not employed total	46.8	50.3	2.9	100	49.8	37.6	17.5
Net household income							
Up to EUR 749	37.1	58.6	4.3	100	67.8	17.8	21.4
EUR 750 to EUR 1,349	42.1	54.1	3.9	100	65.6	29.6	13.6
EUR 1,350 to EUR 2,249	58.4	39.1	2.5	100	68.6	26.7	12.5
EUR 2,250 to EUR 2,999	66.1	31.3	2.6	100	68.2	32.7	12.6
EUR 3,000 and over	75.7	23.2	1.1	100	71.8	33.6	7.8
Net financial assets							
Net financial assets ≤ median	45.7	50.3	4.0	100	72.8	20.8	14.7
Net financial assets > median	66.2	32.5	1.2	100	73.3	29.3	7.9
Net financial assets > double the median	71.8	26.8	1.4	100	67.0	33.8	10.1
Net financial assets > five times the median	83.5	16.0	0.5	100	54.6	50.2	13.0
Marital status of household head							
single	57.6	40.2	2.3	100	78.9	19.5	11.2
married/partnership	63.8	33.9	2.3	100	68.5	32.2	10.7
divorced/separated	52.7	44.9	2.4	100	74.5	28.5	9.9
widowed	40.0	54.8	5.2	100	42.9	36.6	25.4
Housing status							
Owner-occupied housing	63.6	34.4	2.0	100	68.4	33.7	10.6
Rental housing	52.7	44.0	3.3	100	69.9	24.0	13.5
Education level of household head							
Compulsory education at most	40.2	54.6	5.3	100	71.6	20.5	12.8
Apprenticeship, vocational/technical school	57.9	39.5	2.7	100	69.2	27.7	11.6
Academic secondary school, higher-level technical and vocational school	65.6	32.7	1.7	100	68.1	37.5	10.6
Fachhochschule, university	70.3	28.7	1.0	100	68.4	30.6	12.9

Source: Authors' calculations based on a FESSEL-GfK survey.

Note: These two questions were directly addressed to the respondent (not necessarily the household head).
[1] Multiple answers were possible. The sample consists of the households which have saved for retirement.