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Shareownership in Finland

ABSTRACT

This paper utilizes a unique database consisting of all electronically registered shareholdings of Finnish stocks by approximately half a million individuals and institutions. These shareholdings cover 97% of the total market capitalization of Finnish stocks. Using these data, the paper documents patterns in shareownership in Finland from January 1997 and prior changes from 1996 and 1995. The focus is on the following issues: (1) the breakdown of the number of investors and the proportion of aggregate investment wealth by institutional category; (2) the distribution of individuals' investment wealth by gender, age, mother tongue, municipality, region, and country of residence; (3) the concentration of individuals' investment wealth; (4) portfolio diversification; and (5) the relationship between a stock's ownership structure and exchange listing, market capitalization, dividend yield, and voting power. In addition, the paper examines changes in individuals' ownership concentration and the distribution of ownership by institutional category.

Key words: *Shareownership, individual investors, institutional investors*

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1. INTRODUCTION

Despite the stock markets' central role in Finnish academic finance research, relatively little is known about the patterns of stockownership in Finland or changes in these patterns. This is probably largely due to the fact that no sources of stockownership data are easily available. Most research in this area originates from the U.S. where researchers use three sources to fill the data gap: (1) survey data (see, e.g., Baker & Haslem 1973, Riley & Chow 1992, and Poterba & Samick 1995, 1996); (2) data of securities transactions from a single securities firm, combined with survey data (see, e.g., Lease et al. 1974, 1976, Cohn et al. 1975, and Lewellen et al. 1977 which all use the same database); and (3) data obtained from tax authorities (see, e.g., Crockett & Friend 1963, Friend & DeCani 1966, Blume et al. 1974, and Seyhun & Skinner 1994). In Finland, Statistics Finland (1996) uses survey data from 5,210 households from 1994 to investigate the distribution of wealth across socioeconomic groups. Helsinki Stock Exchange Foundation (1997) examines patterns in securities ownership by using survey data from 718 households.

This study adds to literature by introducing a comprehensive data source which has not been available to researchers before: the central register of shareholdings for Finnish stocks in the Finnish Central Securities Depository (FCSD). Practically all major companies have joined the register, and it covers 97% of the total market capitalization of Finnish stocks, 289 billion FIM (5 FIM ≈ 1 U.S. $). The register details the shareholdings of *all* Finnish investors – both retail and institutional – which have registered their holdings of stocks represented in FCSD. The database is, to our knowledge, the first comprehensive panel on institutional holdings in the world, and does not suffer from potential representativeness problems inherent in survey data or data from a single securities firm. Since the electronic records represent official certificates of ownership, our data are also very reliable.

The goal of this paper is to document the most important quantifiable patterns in shareownership in Finland in January 1997 and changes in these patterns in 1995 and 1996. Our research approach is mostly descriptive, not oriented towards hypothesis testing. We focus on the following issues: (1) the breakdown of the number of investors and the proportion of aggregate investment wealth by institutional category; (2) the distribution of individuals' investment wealth by gender, age, mother tongue, municipality, province, and country of residence; (3) the concentration of individuals' investment wealth; (4) portfolio diversification; and (5) the relationship between a stock's ownership structure and exchange listing, market capitalization, dividend yield, and voting power. Moreover, we report changes in individuals' ownership concentration and the distribution of ownership by institutional category.

While our database includes comprehensive data on direct shareholdings, it does not cover

indirect shareholdings. Therefore, for example, the holdings of investment companies owned by a single individual are considered to represent institutional ownership. Similarly, we do not consider individuals' indirect ownership through mutual funds. This, however, should not significantly affect our analysis because domestic mutual funds are still relatively small players in the Finnish stock market, at least by international standards. In the beginning of 1997, the total number of owners in equity-linked mutual funds investing mostly in Finland was approximately 45,000 (Finnish Options Market Mutual Fund Report, January 1997), 9.1% of the number of investors in our sample. Poterba & Samick (1995) report that in 1992 17.8% of U.S. households owned stocks directly and 22.0% indirectly through mutual funds. Direct holders of corporate stock accounted for less than half of all equity holders.

The remainder of the paper is organized as follows. The next section describes the data. Section three presents the empirical results. Section four summarizes the findings.

2. DATA

Since 1992, Finland has gradually changed over to a paperless system of share ownership and trading, called the Book Entry System. Under this system, physical certificates are abolished and holdings are recorded in computerized registers. By the end of 1994, 80 listed companies had joined the Book Entry System, representing 97% of the total market value of Finnish listed companies. This leaves out 9 Helsinki Stock Exchange (HSE, first market) listed companies, 19 OTC (second market) listed companies, and 8 Stockbrokers' list (third market) listed companies, most of which are small companies or under reorganization. In 1995 and 1996, 11 of these missing companies and seven newly listed companies joined the Book Entry System, and five companies were delisted.

The Book Entry System entails compulsory registration of holdings for Finnish individuals and institutions. Information on registered holdings is publicly available at FCSD, which maintains the combined holdings of six private and public book entry registers on a daily basis. Foreigners are partially exempted from registration as they can opt for registration in a nominee name. This means that their stockholdings are combined to a larger pool of nominee registered holdings and cannot be separated from each other by outsiders.

Our data include the initial balance in FCSD's shareownership records at January 1, 1995 and all changes in these records until January 15, 1997 for all publicly quoted companies represented in the Book Entry System. Since all changes in the records are stamped on the day of transaction, these data allow us determine the ownership for each stockholder at any point of time between the above two dates. In this paper we analyze registered stockholder ownership records at three separate dates: January 1, 1995; January 1, 1996; and January 1, 1997.

We obtain the following information for each shareholder and for each point of time:

- Investor identification number: from 1 to 552,374. Individual investors are initially identified by their social security number and companies and other institutions by their official registration number. With the help of this unique number the shareholdings for an investor are kept separate from the shareholdings of other investors. For security reasons, in our data, the unique identifying number is replaced by a unique running number.
- Share class
- Number of shares
- Ownership type. FCSD classifies ownership into eight types of which only two have practical significance: private ownership and nominee registered ownership. The remaining types include, among others, joint ownership and ownership that cannot be allocated to any single shareholder because the shares have not been transformed into electronic certificates. We calculate the combined ownership for these remaining types but, due to lack of data, make no attempt to analyze the owners behind these shareholdings.
- Dummy variables for males, females, institutions, and investors whose institutional status is unknown. The last group consists mostly of foreign investors.
- Investor category. This identifies the line of business or profession of the investor. It is based on the 29-category system used by Statistics Finland. Our aggregation of the categories results in 11 categories or less.
- Birth year (individual investors)
- Mother tongue (individual investors)
- Zip code. Our analysis of zip codes is restricted to individual investors whose address is not a post office box number.
- Country of residence.

Many companies have two share classes of which one is attached with a greater number of votes than the other. This makes the stocks imperfect substitutes for each other and potentially gives rise to different owner clienteles. Therefore, we consider share classes with voting power differences as separate stocks.

The market values for the shares are calculated using year-end closing prices. However, 31 companies have two share classes of which only the one with less voting power is listed. In these cases we assume that both share classes have the same price – a reasonable assumption given the fact that during the sample period the stock market did not pay much premium for the share attached with the greater amount of votes. For example, in the beginning of 1997

there were 22 pairs of listed share classes with unequal voting power. Their average price difference was 3.8%.

To put the data obtained from FCSD into perspective, we compare it to population and income statistics detailed in Statistics Finland's *Statistical Yearbook in Finland 1996* and *Finland CD 1996* database. The availability of zip code for each domestic investor makes it possible to relate the average investor characteristics in each zip code to Statistics Finland's population and income statistics in that zip code. Moreover, Statistics Finland's data allow us to aggregate zip code level information to municipality and province levels.

3. RESULTS

3.1. Distribution of investment wealth by investor category

Table 1 shows the number of investors and their investment wealth by investor category. Non-nominee registered institutions – predominantly domestic institutions – are clearly the largest investor category: in the beginning of 1997 they owned 52.4% of market capitalization. Nominee registered investors, i.e. foreign investors, are the next-largest category with a 33.6% ownership fraction, and individual investors own 13.6% of aggregate investment wealth.

Relating our results to population data suggests that 10.5% of Finnish males and 8.1% of females – 475,000 investors – own shares directly. Males own 63% and females 37% of individuals' combined investment wealth. The median investment wealth for individuals is 8,100 FIM, indicating that most individuals' portfolios are very small. The distribution of portfolio values is strongly skewed to the right, as shown by the fact that the average portfolio size for individuals, 82,900 FIM, is ten times as large as the median.

Table 1 further investigates the distribution of investment wealth according to the categorization of Statistics Finland. The largest shareholders in terms of their fraction of total market capitalization are general government (18.8%), non-financial corporations (14.1%), households (13.6%), financial and insurance institutions (10.1%), and non-profit institutions (5.4%).

Table 2 shows how the number of investors in each investor category and the distribution of investment wealth across categories changed in 1995 and 1996. Nominee registered investors increased their holdings whereas both domestic institutions and individuals decreased their ownership fractions. The total number of individual investors and institutions increased in 1995 but decreased in 1996. An increase in the number of investors is due to new issues of equity and the fact that new companies joined the Book Entry System during this period.

To account for these effects, we calculate the number of investors for 52 companies which were listed in FCSD during the full sample period and did not issue new equity or repurchase

TABLE 1. Investment wealth by investor category at January 1, 1997. Privately registered shares are registered in the owner's own name. Nominee registered shares are registered in a financial intermediary's name and the owners remain unknown. Only foreigners are allowed to register in a nominee name. 5 FIM [a] 1 U.S. $.

Investor or ownership type	Number of investors	Investors' mean investment wealth, 1000 FIM	Median investor's investment wealth, 1000 FIM	Sum of investment wealth, mill. FIM	Proportion of total investment wealth
Categorization by ownership type:					
Institutions	17,682	8,582.5	59.0	151,756	52.4 %
Males	261,195	95.0	9.3	24,809	8.6 %
Females	213,831	68.1	7.1	14,564	5.0 %
Individuals total	475,026	82.9	8.1	39,373	13.6 %
Institutional status unknown	2,472	158.0	14.3	391	0.1 %
Privately registered ownership total	495,180	386,8	8.7	191,520	66.2 %
Nominee registered ownership				97,327	33.6 %
Other ownership types				596	0.2 %
Registered ownership total				289,442	100.0 %
Categorization by line of business or profession for privately registered ownership:					
Non-financial corporations	10,538	3,874.3	64.9	40,828	14.1 %
Deposit money and other credit corporations	331	19,236.8	1,902.4	6,367	2.2 %
Insurance corporations	77	259,293.7	326.7	19,966	6.9 %
Fin. auxiliaries and other fin. intermediaries	58	48,275.5	9,898.7	2,800	1.0 %
Financial and insurance institutions total	466	62,517.1	2,001.9	29,133	10.1 %
General government	320	95,037.4	37.5	30,412	10.5 %
Employment pension schemes	78	273,544.7	31,784.7	21,336	7.4 %
Other social security funds	28	96,197.0	304.5	2,694	0.9 %
General government total	426	127,798.0	77.8	54,442	18.8 %
Non-profit institutions	4,710	3,305.4	50.3	15,568	5.4 %
Employers and own-account workers	33,863	75.0	9.3	2,541	0.9 %
Employees	339,223	88.9	9.2	30,167	10.4 %
Other households	102,583	64.3	5.2	6,597	2.3 %
Households total	475,669	82.6	8.1	39,304	13.6 %
Rest of the world	1,907	6,058.7	26.5	11,554	4.0 %
Unknown	1,464	472.0	13.5	691	0.2 %
Privately registered ownership total	495,180	386.8	8.7	191,520	66.2 %

their stocks in excess of 2% of their outstanding shares in the beginning of 1995. The total number of individual investors in these companies was 150,566 in 1995, 150,583 in 1996 and 144,123 in 1997. In other words, the total number of individual investors remained essentially the same in 1995 but decreased clearly in 1996. The development in the number of institutions follows the same pattern.

TABLE 2. Changes in investment wealth by investor category. Note that the ownership fractions for privately registered ownership differ from those of Table 1 because here they are calculated relative to total privately registered ownership, not total registered ownership. All ownership figures are from January 1.

	1995	1996	1997
Categorization by ownership type:			
Institutions	55.9 %	55.5 %	52.4 %
Individuals	15.4 %	14.2 %	13.6 %
Nominee registered ownership	27.8 %	29.7 %	33.6 %
Institutional status unknown or other ownership types	0.9 %	0.6 %	0.3 %
Registered ownership total	100.0 %	100.0 %	100.0 %
Categorization by line of business for privately registered ownership:			
Non-financial corporations	22.9 %	23.1 %	21.3 %
Financial and insurance institutions	15.7 %	13.8 %	15.2 %
General government	26.4 %	29.2 %	28.4 %
Non-profit institutions	8.3 %	8.0 %	8.1 %
Households	21.5 %	20.3 %	20.5 %
Unknown	5.2 %	5.6 %	6.4 %
Privately registered ownership total	100.0 %	100.0 %	100.0 %

3.2. Joint distribution of age and sex and the relationship between investment wealth, age, and sex

Table 3 shows the joint distribution of age and sex for investors and the entire Finnish population. The mean age of male investors is 45.8 years and that of female investors 47.3 years whereas the corresponding numbers for the population are 36.5 and 40.0 years. In other words, male investors are on average nine years and female investors seven years older than the population average.

Table 3 further shows each age and sex category's proportion of individuals' total investment wealth. Not surprisingly, investment wealth tends to be concentrated to the more senior citizens. For example, investors who are at least 65 years old own 31% and those between 45 and 64 years own 46% of individuals' total investment wealth. Similarly, investors who are 44 years or less own no more than 23% of individuals' total investment wealth. In the U.S. the above figures are 41%, 37% and 21% (Poterba & Samick 1995). In other words, elderly people in the U.S. own a relatively larger proportion of investment wealth as compared to those in Finland.

TABLE 3. Investors, population, and investment wealth by age and sex. Investor age and investment wealth figures are from January 1, 1997 and population age figures from January 1, 1996. Half of the investors are assumed to have born during the first half of each year.

Age	Investors		Population		Individuals' investment wealth	
	Males	Females	Males	Females	Males	Females
90–	0.4 %	0.4 %	0.1 %	0.3 %	0.7 %	1.2 %
85–89	0.7 %	0.8 %	0.2 %	0.7 %	1.3 %	1.1 %
80–84	1.2 %	1.3 %	0.6 %	1.3 %	2.2 %	1.6 %
75–79	1.9 %	2.1 %	0.9 %	1.8 %	2.9 %	2.6 %
70–74	2.8 %	2.7 %	1.5 %	2.4 %	4.6 %	3.9 %
65–69	3.5 %	3.1 %	2.0 %	2.6 %	5.2 %	3.2 %
60–64	4.0 %	3.3 %	2.2 %	2.5 %	6.3 %	3.0 %
55–59	4.9 %	3.9 %	2.6 %	2.7 %	7.0 %	3.9 %
50–54	6.0 %	4.6 %	3.1 %	3.1 %	8.9 %	4.4 %
45–49	5.5 %	4.1 %	4.3 %	4.2 %	7.9 %	3.6 %
40–44	4.0 %	3.0 %	4.0 %	3.9 %	4.9 %	1.9 %
35–39	3.4 %	2.5 %	3.8 %	3.7 %	3.6 %	1.7 %
30–34	3.5 %	2.6 %	3.8 %	3.6 %	2.4 %	1.3 %
25–29	3.4 %	2.6 %	3.5 %	3.3 %	1.7 %	1.0 %
20–24	3.4 %	2.6 %	3.0 %	2.9 %	1.5 %	1.0 %
15–19	3.0 %	2.4 %	3.3 %	3.1 %	1.0 %	0.8 %
10–14	2.2 %	1.8 %	3.3 %	3.2 %	0.5 %	0.5 %
5–9	1.1 %	0.9 %	3.2 %	3.0 %	0.2 %	0.2 %
0–4	0.4 %	0.3 %	3.2 %	3.1 %	0.1 %	0.1 %
Totals	55.0 %	45.0 %	48.7 %	51.3 %	63.0 %	37.0 %
Mean age	45.8	47.3	36.5	40.0		

Figure 1 illustrates the proportion of inhabitants and investors in each age and sex category. Figure 2 compares the proportion of inhabitants in each age and sex category to the proportion of investment wealth owned by the investors in this category.

Figure 3 displays individual investors' mean wealth as a function of their birth year. Older investors are on average wealthier than younger investors: for example, the mean wealth for investors who were born in 1960 is 64,100 FIM whereas that for investors born in 1935 is 104,000 FIM. It is interesting to note that the mean wealth is approximately a linear function of investor age whereas the median wealth, as shown by Figure 4, is not: the median investment wealth for investors who were born before 1945 is approximately the same irrespective of their birth year whereas for investors born after 1945 age is clearly positively related to investment wealth.

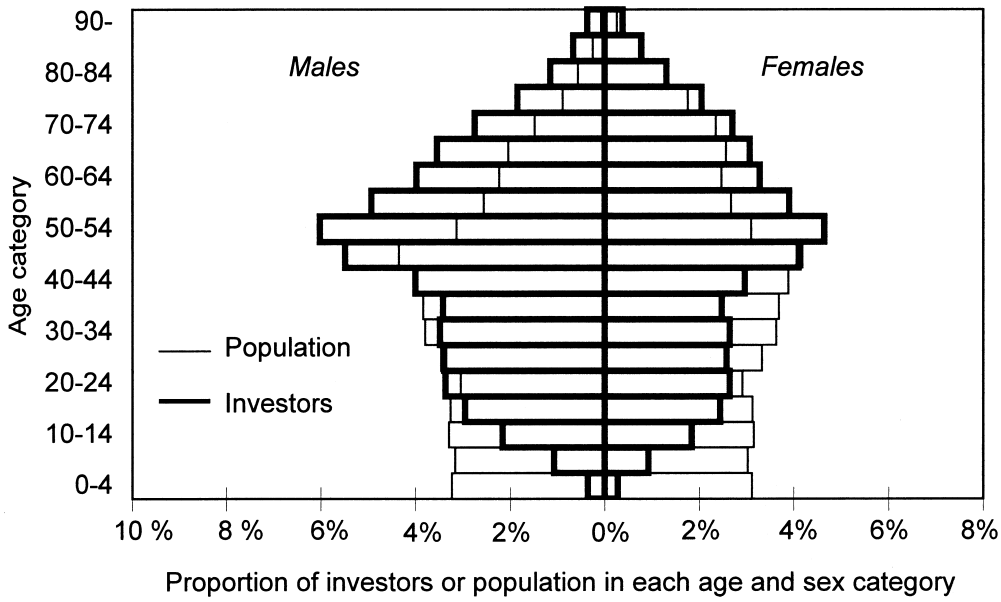

FIGURE 1. Investors and population by age and sex. Investor data are from January 1, 1997 and population data from January 1, 1996.

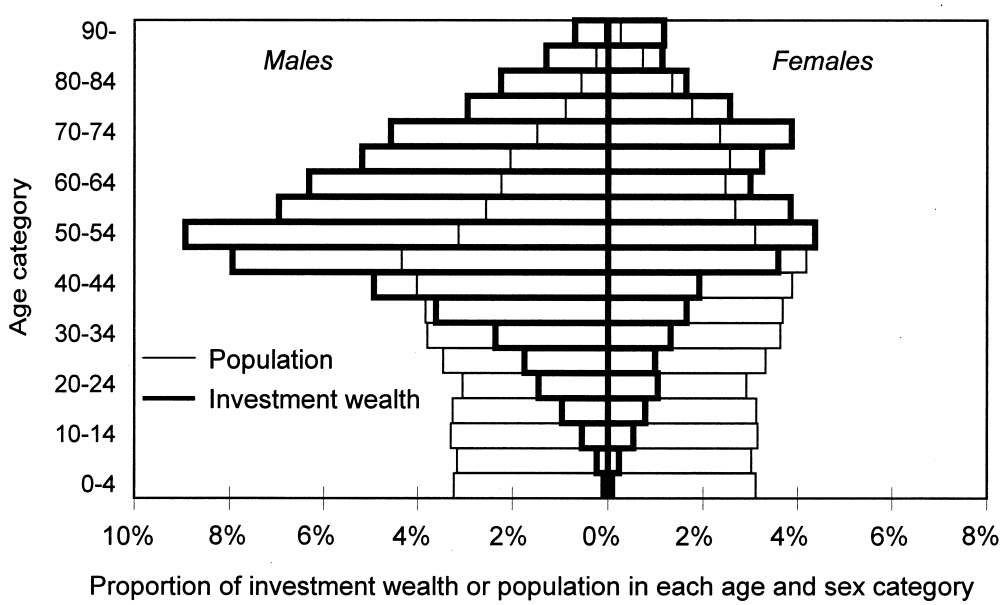

FIGURE 2. Investment wealth and population by age and sex. Investment wealth data are from January 1, 1997 and population data from January 1, 1996.

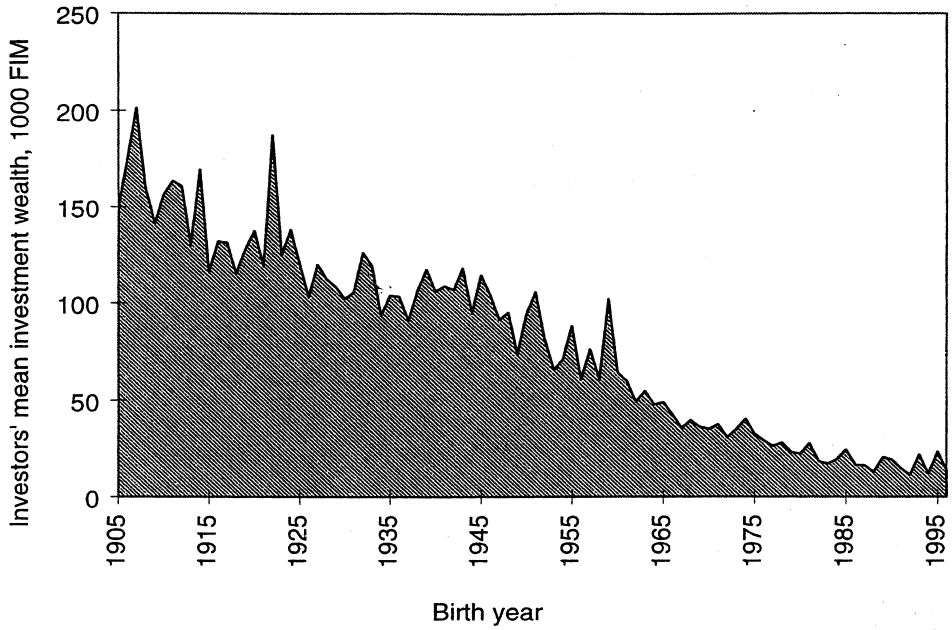

FIGURE 3. Investors' mean investment wealth as a function of birth year at January 1, 1997.

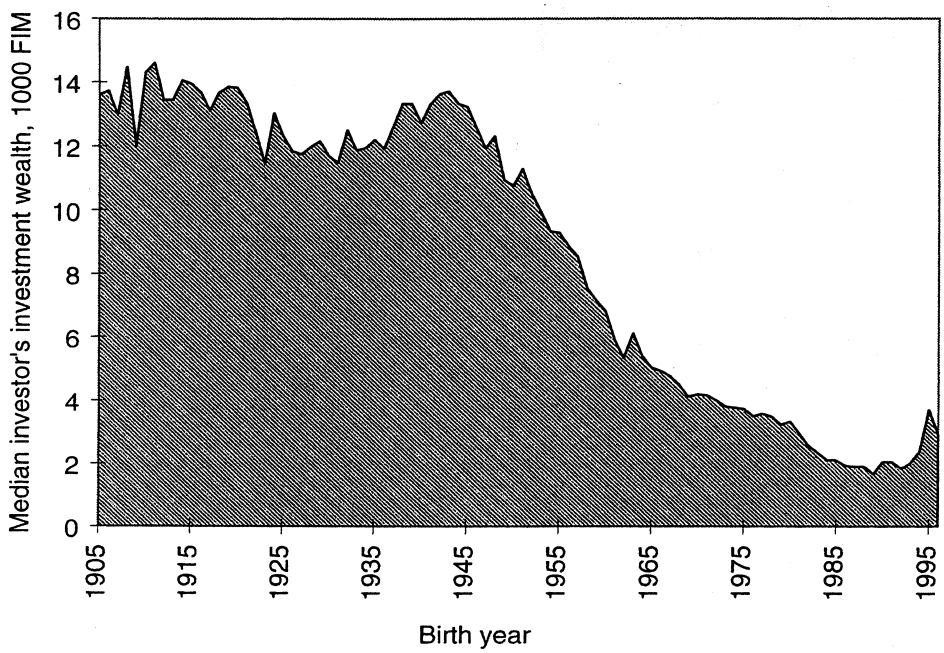

FIGURE 4. Median investor's investment wealth as a function of birth year at January 1, 1997

3.3. Investment wealth by municipality, province, and country of residence

Table 4 shows how investment wealth in Finland is distributed across provinces. There are substantial differences in investment wealth per inhabitant as well as in the relative frequency of investor-inhabitants. In particular, the province of Ahvenanmaa stands out in this respect: the ratio of investor-inhabitants to all inhabitants is more than 31% whereas for the province with the next-largest figure, Uusimaa, the ratio is less than 13% (for Greater Helsinki Area, 14%). The national average is 9.3%. The average investment wealth per inhabitant is in Ahvenanmaa 33,900 FIM and in Uusimaa 16,000 FIM (in Greater Helsinki Area 20,000 FIM) whereas the national average is 7,700 FIM.

Table 4 further reports investment activity by form of municipality. Not surprisingly, investment activity is concentrated in urban areas: the proportion of investor-inhabitants to all

TABLE 4. Investment wealth by province and form of municipality at January 1, 1997. The number of inhabitants refers to their number at January 1, 1996.

Province or form of municipality	Number of investors	Number of investors / Number of inhabitants	Investors' mean investment wealth, 1000 FIM	Investment wealth per inhabitant, 1000 FIM	Sum of investment wealth, mill. FIM	Proportion of individuals' total investment wealth
Province:						
Ahvenanmaa	7,642	31.2 %	108.6	33.9	830	2.1 %
Uusimaa	162,927	12.8 %	125.2	16.0	20 399	51.8 %
of which in Greater Helsinki Area*	125,918	14.4 %	138.7	20.0	17 463	44.4 %
Turku	65,574	9.3 %	74.5	6.9	4 886	12.4 %
Häme	66,130	8.8 %	60.9	5.3	4 027	10.2 %
Vaasa	42,492	9.6 %	53.0	5.1	2 254	5.7 %
Kymi	27,453	8.3 %	48.1	4.0	1 321	3.4 %
Kuopio	18,788	7.3 %	49.9	3.6	938	2.4 %
Pohjois-Karjala	9,409	5.4 %	58.9	3.2	554	1.4 %
Keski-Suomi	17,474	7.1 %	43.6	3.1	761	1.9 %
Mikkeli	12,143	7.2 %	39.1	2.8	474	1.2 %
Lappi	13,411	6.7 %	41.4	2.8	555	1.4 %
Oulu	24,264	5.5 %	46.5	2.6	1 127	2.9 %
Unknown	7,319		170.4	1 247		3.2 %
Whole country	475,026	9.3 %	82.9	7.7	39 373	100.0 %
Form of municipality:						
Urban munipality	339,721	10.4 %	89.8	9.3	30 505	77.5 %
Rural municipality	127,986	7.0 %	59.5	4.2	7 621	19.4 %
Unknown	7,319		170.4	1 247		3.2 %

* Includes Helsinki, Espoo, Vantaa, and Kauniainen.

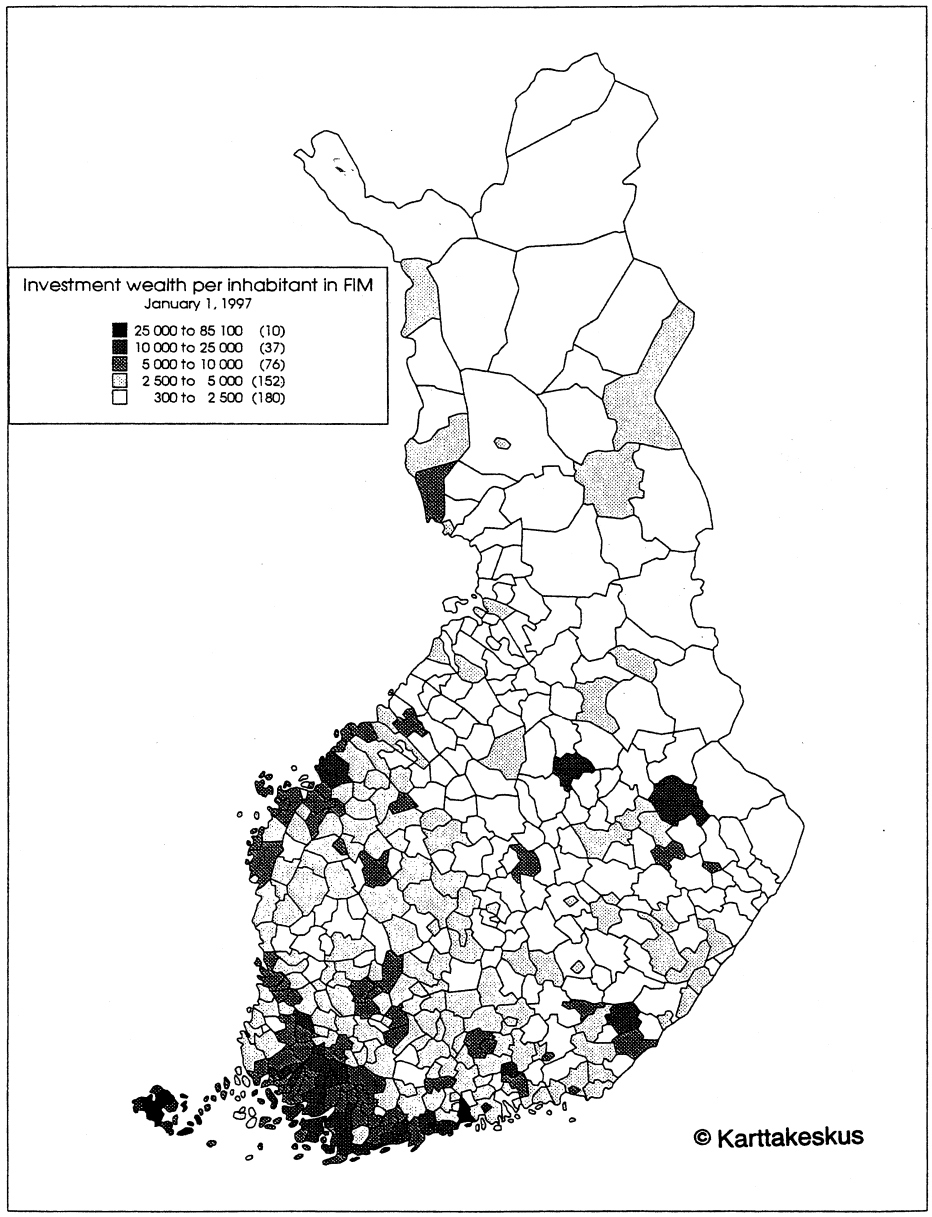

FIGURE 5. Investment wealth per inhabitant by municipality.

inhabitants is 10.4% in urban and 7.0% in rural municipalities. The distribution of investment wealth follows the same pattern. Figure 5 illustrates the investment wealth per inhabitant figures on the municipal level.

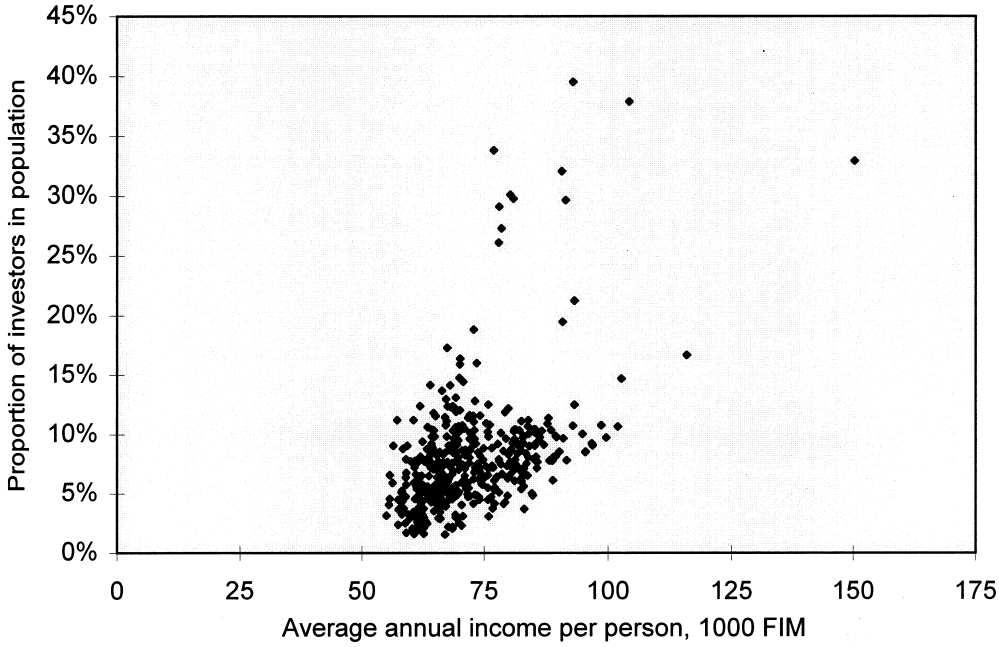

FIGURE 6. The relationship between annual income and the proportion of investors by municipality. Investor data are from January 1, 1997; population data from January 1, 1995; and income data from January 1, 1994.

Figure 6 shows the relationship between mean annual income per person and the ratio of investor-inhabitants to all inhabitants in different municipalities. The relationship is very clear and approximately linear. There is also a very strong relationship between investment and real estate wealth. This can be seen from Figure 7, which demonstrates the relationship between dwelling space per person and and the ratio of investor-inhabitants.

We further investigate the determinants of shareownership by running two OLS regressions where the dependent variable is either the proportion of investors or the investment wealth per person. As independent variables we include the mean annual income per person and mean dwelling space per person in the municipality. To take into account the fact that urban residents are more likely to invest in stocks than residents living in rural areas, we add in the regression a dummy for urban municipalities and the variable, number of people per square kilometer. Moreover, we add variables indicating the proportion of high school educated (or equivalent) residents in the municipality, as well as the proportion of managerial, middle class, worker, and agricultural households. Finally, to control for province-level variation in investment activity, we add dummies for 11 provinces.

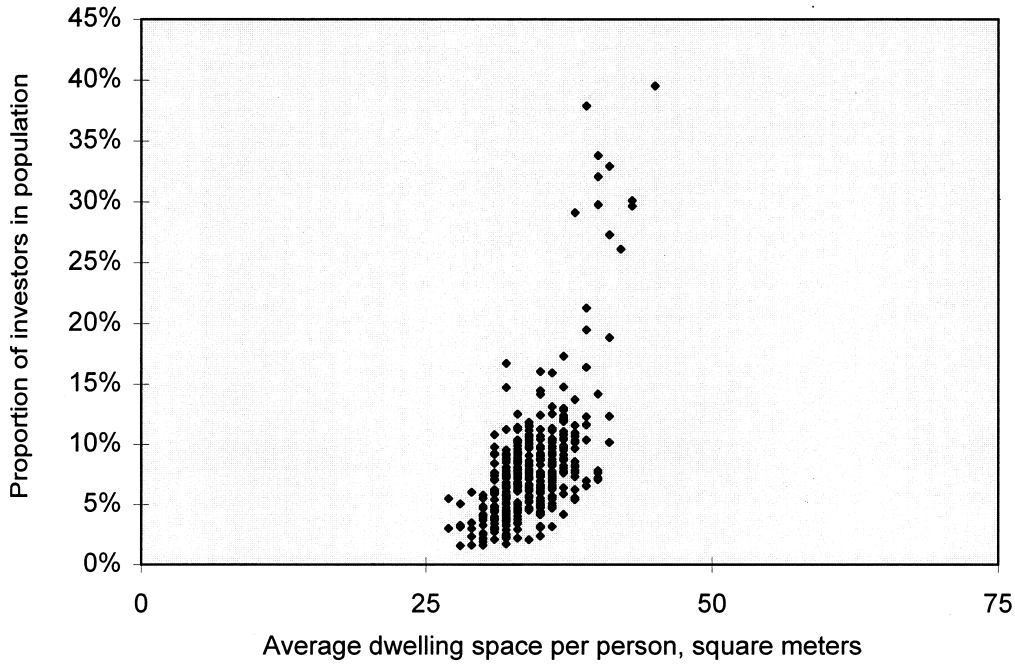

FIGURE 7. The relationship between dwelling space per person and investor proportion by municipality. Investor data are from January 1, 1997; population and dwelling space data are from January 1, 1995.

Table 5 shows the results of the regressions. As expected, the mean annual income per person and the mean dwelling space per person are highly significantly positively related to both shareownership variables. Moreover, residents of the province Ahvenanmaa tend to be much more active investors than residents of other provinces. The coefficient estimates indicate that an increase of 10,000 FIM in annual income is associated with an increase of 8100 FIM in the investment wealth per inhabitant and an increase of 1.8% percentage points in the ratio of investor-inhabitants to all inhabitants.

The results also suggest that the larger the proportion of worker households in the municipality, the smaller the investment activity. However, somewhat surprisingly, the coefficient for the proportion of middle class households is significantly negative. This puzzling result is probably due to the fact that this variable is strongly correlated with the variable, mean income per person, which we control for in the regressions. To address this collinearity problem, we repeat our tests by running stepwise regressions. We show in unreported tests that the results are very similar to those reported in the paper.

TABLE 5. OLS regressions of the determinants of investment activity in 455 municipalities. Investor data are from January 1, 1997; population data from January 1, 1995; and other data from January 1, 1994

Independent variables	Dependent variable:			
	Proportion of investors in population		Average investment wealth per person, 1000 FIM	
	Coefficient	t-value	Coefficient	t-value
Constant	–0.227	–8.36	–55.45	–9.87
Mean annual income per person. 1000 FIM	0.0018	5.61	0.81	11.98
Mean dwelling space per person, m2	0.0052	7.66	0.57	4.07
Urban municipality dummy	0.009	2.79	–0.90	–1.29
Number of people / km^2	1.92E–05	2.50	0.001	0.69
Proportion of high school educated, %	0.108	2.66	0.03	0.00
Proportion of managerial households*, %	0.171	1.61	43.44	1.98
Proportion of agricultural households*, %	–0.075	–1.50	9.96	0.96
Proportion of worker households*, %	–0.191	–5.01	–53.29	–6.75
Proportion of middle class households*, %	–0.212	–4.43	–65.96	–6.68
*Province dummies***				
Ahvenanmaa	0.156	19.96	15.58	9.66
Vaasa	0.036	5.78	4.40	3.46
Turku	0.016	3.07	3.23	2.95
Kuopio	0.009	1.15	3.66	2.32
Häme	0.007	1.15	1.32	1.10
Mikkeli	0.006	0.80	3.07	2.04
Keski-Suomi	0.006	0.79	3.54	2.38
Kymi	0.005	0.70	0.44	0.32
Lappi	0.002	0.31	2.36	1.46
Oulu	–0.001	–0.19	4.54	3.03
Pohjois-Karjala	–0.002	–0.28	4.61	2.66
Adjusted R2	0.787		0.658	
N	455		455	

* The implicit benchmark for these dummy variables is "other households". They consist mostly of households whose head is a retired person.

** The implicit benchmark for the province dummies is Uusimaa.

Table 6 shows the distribution of the number of investors and investment wealth by country of residence. As explained, nominee registered investors are not included in the analysis because they cannot be separated from each other. By far the largest number of foreign investors are Swedish individuals and institutions, followed by the residents of the U.S., Germany, and the U.K.

The median investments into Finnish stocks by individuals residing abroad are generally in the order of 10,000 FIM – 20,000 FIM, i.e. larger than those of the entire investor pool

TABLE 6. Investment wealth by country of residence at January 1, 1997. Privately registered ownership only.

Country of residence	Number of investors				Median individual investor's investment wealth, 1000 FIM	Sum of investment wealth, mill. FIM	Proportion of total privately registered foreign investment wealth
	Individuals	Institutions	Institutional status unknown	Total			
Sweden	1,718	63	1,259	3,040	14.0	3,360	29.7 %
United States	399	4	80	483	19.6	156	1.4 %
Germany	385	6	88	479	16.7	412	3.6 %
United Kingdom	259	22	83	364	11.9	301	2.7 %
France	154	5	64	223	29.3	75	0.7 %
Switzerland	188	1	25	214	20.1	59	0.5 %
Belgium	134	2	47	183	12.4	825	7.3 %
Denmark	123	1	55	179	28.8	180	1.6 %
Norway	117	2	31	150	8.0	930	8.2 %
Spain	129	2	17	148	23.9	53	0.5 %
Netherlands	64	2	39	105	30.6	4,353	38.5 %
Canada	79	2	17	98	19.1	16	0.1 %
Italy	34		23	57	17.2	18	0.2 %
Austria	43		7	50	14.9	7	0.1 %
Singapore	38	1	6	45	49.4	13	0.1 %
Luxemburg	33	7	3	43	11.5	209	1.9 %
Australia	23	1	9	33	9.3	14	0.1 %
Portugal	15		1	16	22.7	4	0.03 %
Japan	11	2	1	14	11.7	173	1.5 %
Malaysia	12		1	13	5.4	1	0.01 %
Hong Kong	10			10	138.9	1	0.01 %
Russian Federation	7		2	9	11.6	0.5	0.004 %
China	9			9	105.0	1	0.01 %
South Africa	6		3	9	18.1	3	0.03 %
Poland	9			9	4.3	0.3	0.003 %
Other or unknown	958	19	168	1,145		137	1.2 %
Totals	4,957	142	2,029	7,128		11,305	100.0 %

(8,100 FIM). The countries with the largest proportions of aggregate foreign investment wealth are, somewhat unexpectedly, the Netherlands, Sweden, Norway, and Belgium. However, a detailed look at the data suggests that these clusters are almost exclusively due to holdings by a single stockholder in a single company. In other words, they appear to be strategic holdings, not portfolio investments.

3.4. Investment wealth and mother tongue

Table 7 investigates how mother tongue is related to investment wealth. The Swedish-speaking minority (5.8% of the Finnish population) is much wealthier than the Finnish-speaking ma-

TABLE 7. Investment wealth by mother tongue at January 1, 1997. The number of inhabitants refers to their number at January 1, 1996.

Mother tongue	Number of investors	Number of investors / Number of inhabitants	Investors' mean investment wealth, 1000 FIM	Investment wealth per inhabitant, 1000 FIM	Sum of investment wealth, mill. FIM	Proportion of individuals' total investment wealth
Finnish	433,746	9.1 %	69.7	6.4	30,252	76.8 %
Swedish	41,175	14.0 %	221.1	30.9	9,105	23.1 %
Other	105		157.2		17	0.04 %

jority (92.9% of population): the average investment wealth of Finnish-speaking Finns owning stocks, 69,700 FIM, is less than one-third of the investment wealth of Swedish-speaking Finns owning stocks, 221,100 FIM. The ratio of investor-inhabitants to all inhabitants is also greater for Swedish-speaking Finns (14.1%) than for Finnish-speaking Finns (9.1%). Therefore, the value of the stock portfolio of an average Swedish-speaking Finn is more than four times as large as that of an average Finnish-speaking Finn.

3.5. Concentration of individuals' investment wealth

Table 8 shows the degree of concentration in individuals' shareownership. In the beginning of 1997, the richest 0.1% of individual investors owned 22.4% and the richest 1% 46.0% of the investment wealth of individuals. Figure 8 illustrates the concentration of ownership by a Lorenz curve.

Statistics Finland (1996) reports that the aggregate wealth of individuals was more concentrated in 1994 than what it was in 1988. The trend towards greater concentration continued in shareownership in 1995 and 1996. For example, as shown by Table 7, the proportion of investment wealth owned by the richest 1% of individuals increased from 44.1% in 1995 to 45.0% in 1996 and 46.0% in 1997.

3.6. Portfolio diversification

Table 9 describes the diversification of stock portfolios. Most individual investors hold poorly diversified portfolios: 62.4% of individual investors have only one stock in their portfolio and 17.9% two stocks. The same applies to institutions of which 52.4% hold only one stock and 16.9% two stocks. These figures are much smaller than those of Lease et al. (1974) who report that only 7% of investors hold one or two stocks in their portfolio. In our study only 7.8% of individuals and 17.1% of institutions hold at least five stocks in their portfolios. This is proba-

TABLE 8. Proportion of individuals' total investment wealth owned by the richest n% of individuals. All ownership figures are from January 1.

Percentile	Cumulative proportion owned			Ownership at percentile, 1000 FIM		
	1995	1996	1997	1995	1996	1997
0.1	21.0 %	21.3 %	22.4 %	4,729.1	4,234.7	6,377.3
1	44.1 %	45.0 %	46.0 %	798.6	742.4	1,090.8
2	53.6 %	54.7 %	55.7 %	454.1	415.3	610.3
3	59.7 %	60.9 %	61.8 %	324.7	296.0	432.0
4	64.3 %	65.5 %	66.4 %	252.3	228.9	333.2
5	68.0 %	69.1 %	70.0 %	206.2	185.2	269.7
6	71.0 %	72.1 %	73.0 %	171.8	154.4	224.1
7	73.5 %	74.7 %	75.5 %	146.5	131.6	190.6
8	75.7 %	76.8 %	77.6 %	127.6	113.6	163.9
9	77.7 %	78.7 %	79.5 %	111.1	99.8	143.3
10	79.3 %	80.4 %	81.1 %	98.8	87.7	126.4
20	89.4 %	90.1 %	90.6 %	39.6	34.4	49.1
30	94.0 %	94.5 %	94.8 %	20.8	17.7	24.8
40	96.5 %	96.9 %	97.1 %	12.0	10.1	14.1
50	98.1 %	98.3 %	98.4 %	7.3	5.9	8.1
60	99.0 %	99.1 %	99.2 %	4.4	3.6	4.8
70	99.5 %	99.6 %	99.6 %	2.5	1.9	2.6
80	99.8 %	99.8 %	99.8 %	1.4	1.1	1.4
90	99.95 %	99.96 %	99.97 %	0.6	0.5	0.6

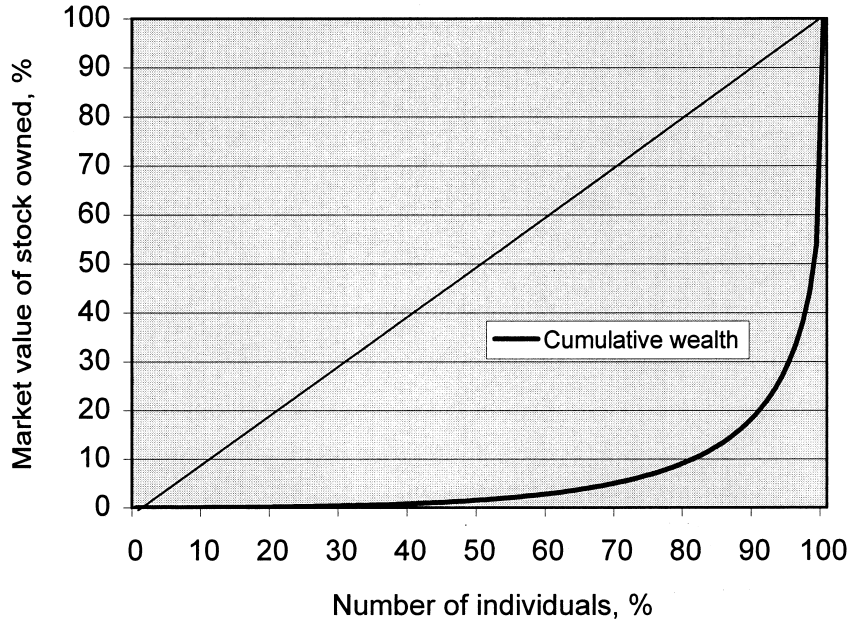

FIGURE 8. Distribution of individual investors' investment wealth: Lorenz curve at January 1, 1997.

TABLE 9. Patterns in portfolio diversification at January 1, 1997.

Panel A. Distribution of the number of stocks in portfolio.

Number of stocks in portfolio	Portfolio value, 1000 FIM				Proportion of investors	
	Individuals		Institutions			
	Mean	Median	Mean	Median	Individuals	Institutions
1	16.8	3.3	1,308	17.9	62.4 %	52.4 %
2	64.4	17.4	4,509	65.4	17.9 %	16.9 %
3	116.1	39.2	2,048	122.6	7.7 %	8.1 %
4	185.1	68.1	2,614	220.6	4.3 %	5.5 %
5	273.4	102.5	6,539	356.8	2.5 %	3.9 %
6	355.3	144.8	5,866	511.2	1.6 %	2.8 %
7	473.1	194.2	9,049	773.8	1.0 %	2.0 %
8	564.3	258.7	8,999	926.6	0.7 %	1.6 %
9	765.5	306.1	13,226	1,349.9	0.5 %	1.1 %
10	892.2	354.9	10,108	1,845.4	0.4 %	0.8 %
>10	1,505.0	561.2	121,418	4,871.1	1.0 %	4.8 %

Panel B. Portfolio diversification by institutional status, line of business, or profession. An investor's Herfindahl index is calculated as 1 – the sum of portfolio weights squared. The mean Herfindahl index is the equally weighted average of investors' index figures.

Investor type	Median investors' investment wealth, 1000 FIM	Mean number of stocks in portfolio	Mean Herfindahl index
Categorization by institutional status:			
Institutions	59.0	3.03	0.252
Males	9.3	2.08	0.193
Females	7.1	1.83	0.161
Individuals total	8.1	1.97	0.178
Institutional status unknown	14.3	1.73	0.145
Registered ownership total	8.7	2.00	0.181
Categorization by line of business or profession:			
Non-financial corporations	64.9	2.75	0.240
Deposit money and other credit corporations	1,902.4	5.53	0.376
Insurance corporations	326.7	14.39	0.470
Fin. auxiliaries and other fin. intermediaries	9,898.7	16.26	0.637
Financial and insurance institutions total	2,001.9	8.33	0.424
General government	37.5	2.54	0.188
Employment pension schemes	31,784.7	16.31	0.545
Other social security funds	304.5	2.79	0.269
General government total	77.8	5.08	0.259
Non-profit institutions	50.3	3.22	0.278
Employers and own-account workers	9.3	2.04	0.198
Employees	9.2	2.00	0.183
Other households	5.2	1.82	0.155
Households total	8.1	1.97	0.178
Rest of the world	26.5	2.23	0.220
Unknown	13.5	2.16	0.196

bly due to the fact that Finnish portfolios are very small, making diversification relatively more expensive because of transaction costs. The minimum transaction cost per share class for each purchase or sale of shares is approximately 150 FIM – 1.9% of the value of the median individual investor's entire portfolio.

The average number of stocks held is 2.0 for individuals and 3.0 for institutions. Large portfolios tend to be most diversified. Insurance companies, financial auxiliaries and other financial intermediaries, and employment pension schemes all hold large and well-diversified portfolios consisting on average of approximately 15 stocks.

3.7. Ownership structure and firm characteristics

Table 10 takes a first look into how the ownership structure of publicly quoted share classes is related to their exchange listing, market capitalization, and dividend yield. Appendix 1 shows a detailed list of ownership structure variables by share class. All reported differences in investor preferences in Tables 10 and 11 are significant at least at the 5% level.

Nominee registered investors prefer stocks which have large market capitalization, i.e. the most liquid stocks. This is consistent with Häyry (1997) who documents that the fraction of nominee registered ownership is positively related to the turnover of the stock. Finnish institutions prefer stocks listed on the HSE main list whereas individual investors prefer small stocks and those listed in the OTC or Stockbroker's list.

There are also clear differences in individual investors' preferences. Females invest relatively more in stocks listed on the HSE main list and those with large market capitalization whereas males prefer the more risky small stocks and those listed in the OTC and Stockbrokers' list. This is consistent with Keloharju (1997) who finds that among investors participating in initial public offerings, males outnumber females by 73%, and with Table 1 suggesting that among all investors males outnumber females by only 22%. In other words, males are relatively more interested in investing in initial offers, i.e., in a very risky class of stocks, than in stocks in general. Consistent with our findings, Jianakoplos & Bernasek (1996) find that single women are relatively more risk averse in their asset holdings than single men or married couples.

Age also affects investors' preferences. The more senior citizens prefer stocks with large market values and younger investors the opposite. This result holds even if we account for the facts that males are on average younger than females and males are particularly interested in stocks with smaller market values.

Table 10 also documents how dividend yield and investor characteristics are related to each other. Individual investors, in particular, prefer stocks with the largest dividend yields. This result does not change if we account for the facts that dividend yield is negatively associated with firm size and individual investors prefer investing in small stocks. Unlike Pettit (1977)

TABLE 10. The relationship between a stock's ownership structure and its exchange listing, market capitalization, and dividend yield at January 1, 1997. The analysis is based on all publicly quoted share classes.

	Equally weighted average proportion of shares owned by			Equally weighted average proportion of individual investors who are males	Equally weighted average of mean age	Number of share classes
	Institutions	Individuals	Nominee registered investors			
Stock exchange listing						
HSE main list	**62.2 %**	**20.5 %**	**16.5 %**	**62.7 %**	**49.4**	**85**
OTC and Stockbrokers' list	**50.4 %**	**37.3 %**	**10.4 %**	**73.9 %**	**47.5**	**31**
Market capitalization quintile						
1 (Largest)	**56.6 %**	**14.5 %**	**28.6 %**	**62.7 %**	**50.0**	**23**
2	**65.9 %**	**15.8 %**	**18.0 %**	**61.8 %**	**50.1**	**23**
3	**62.7 %**	**26.9 %**	**8.9 %**	**61.5 %**	**49.2**	**24**
4	**55.1 %**	**30.8 %**	**13.0 %**	**70.7 %**	**48.2**	**23**
5 (Smallest)	**55.0 %**	**36.9 %**	**5.9 %**	**72.0 %**	**47.0**	**23**
Dividend yield quintile						
1 (Largest)	**49.8 %**	**42.6 %**	**6.4 %**	**63.4 %**	**47.8**	**23**
2	**62.4 %**	**25.0 %**	**11.8 %**	**70.2 %**	**49.2**	**23**
3	**65.2 %**	**20.7 %**	**13.2 %**	**65.0 %**	**49.4**	**24**
4	**54.9 %**	**17.6 %**	**26.4 %**	**61.1 %**	**49.8**	**23**
5 (Smallest)	**62.8 %**	**19.2 %**	**16.5 %**	**68.9 %**	**48.3**	**23**

and Lewellen et al. (1978), we do not find any evidence of dividend clienteles with respect to age or sex.

Table 11 compares the investor characteristics of 22 share class pairs. The stocks in each pair, issued by the same company, are attached with an unequal number of votes. The stock bearing less voting rights typically has a senior claim to dividends. 20 of the 22 stocks with less voting power are more liquid (i.e. their FIM turnover was greater in 1996) than the corresponding share class with more voting power.

Nominee registered shareholders invest relatively more in stocks with less voting power – another manifestation of their preference for liquidity. Individuals are approximately indifferent with respect to voting rights but domestic institutions have a strong preference for voting power. Domestic institutions' preference for voting power reflects the fact that, similarly to Japanese keiretsus, large Finnish banks and insurance companies exercise control in many industrial companies (Ihamuotila 1994).

TABLE 11. The relationship between a stock's voting power and its investor characteristics at January 1, 1997. The sample consists of 22 companies with both share classes listed and no ownership restrictions.

	Limited voting power stocks	Superior voting power stocks
Equally weighted average proportion of shares owned by		
Institutions	**50.5 %**	**73.1 %**
Individuals	**20.9 %**	**21.6 %**
Nominee registered investors	**27.3 %**	**4.4 %**
Median proportion of shares owned by		
Institutions	**48.6 %**	**77.4 %**
Individuals	**18.4 %**	**18.3 %**
Nominee registered investors	**19.3 %**	**1.4 %**

4. CONCLUSIONS

This study documents patters in the ownership of Finnish shares in the beginning of 1997 and changes in these patterns in 1995 and 1996. It utilizes a unique database which consists of the shareholdings of approximately half a million individuals and institutions. The data originate from the Finnish Central Securities Depository (FCSD) which keeps track of the registered shareholdings of all Finnish investors having invested in the stocks represented in FCSD. Practically all major companies have joined the register, and it covers 97% of the total market capitalization of Finnish stocks.

Our main findings are as follows:

- Individual investors own 13.6% and nominee registered investors (foreign investors) 33.6% of aggregate investment wealth. Non-nominee registered institutions, mostly domestic institutions, are clearly the largest investor category with a 52.4% ownership fraction. The ownership fractions of the most important institutional subcategories are as follows: general government (18.8%), non-financial corporations (14.1%), financial and insurance institutions (10.1%), and non-profit institutions (5.4%).
- In 1995 and 1996 nominee registered investors increased and domestic institutions and individuals decreased their ownership fractions. The total number of individual investors and institutions clearly decreased in 1996.
- 10.5% of Finnish males and 8.1% of females own shares directly. Males own 63% and females 37% of individuals' combined investment wealth. The median investment wealth for individuals who own shares is 8,100 FIM whereas the mean is ten times as large as that, 82,900 FIM.

- Investment wealth tends to be concentrated to the more senior citizens. Investors who are at least 65 years old own 31% and those between 45 and 64 years 46% of individuals' total investment wealth. Male investors are on average nine years and female investors seven years older than the population average.
- There are substantial differences in investment wealth per inhabitant figures as well as in the relative frequency of investor-inhabitants across provinces. In terms of investment wealth per inhabitant, Ahvenanmaa is the richest and Uusimaa is the second-richest province in Finland. The average investment wealth per inhabitant in Ahvenanmaa is 33,900 FIM and in Uusimaa 16,000 FIM (in Greater Helsinki Area 20,000 FIM) whereas the national average is 7,700 FIM. Similarly, in Ahvenanmaa 31.2% and in Uusimaa 12.8% of inhabitants own shares directly. The national average is 9.3%.
- Investment activity is concentrated in municipalities which have a high mean annual income and mean dwelling space per person.
- In terms of investor numbers, Swedish individuals and institutions are the largest group of non-nominee registered foreign investors in Finland. Residents of the U.S., Germany, and the U.K. are the next-largest groups.
- The Swedish-speaking minority is much wealthier than the Finnish-speaking majority: the average investment wealth of Finnish-speaking Finns owning stocks, 69,700 FIM, is less than one-third of the investment wealth of Swedish-speaking Finns owning stocks, 221,100 FIM. The ratio of investor-inhabitants to all inhabitants is also greater for Swedish-speaking Finns (14.1%) than for Finnish-speaking Finns (9.1%).
- The richest 0.1% of individual investors owns 22.4% and the richest 1% 46.0% of the total investment wealth of individuals. Individuals' ownership became more concentrated in 1995 and 1996.
- Most investors hold poorly diversified portfolios: only 7.8% of individuals and 17.1% of institutions hold at least five stocks in their portfolio. The average number of stocks held is 2.0 for individuals and 3.0 for institutions.
- Nominee registered investors prefer stocks which have large market capitalization and little voting power. Finnish institutions prefer stocks listed on the HSE main list and those with greater voting power. Individual investors prefer stocks with large dividend yields, low market capitalization, and those listed in the OTC or Stockbroker's list.
- There are also clear differences in individual investors' preferences. Females invest relatively more in stocks listed on the HSE main list and those with large market capitalization whereas males prefer the more risky small stocks and those listed in the

OTC and Stockbrokers' list. The more senior citizens prefer stocks with large market values and younger investors the opposite. ■

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APPENDIX 1. Descriptive statistics of the ownership of Finnish shares at January 1. 1997 Unlisted share classes are denoted by asterisk.

Share class	Market value, mill, FIM	Number of iden-tifiable investors	Proportion of shares owned by			Proportion of individual investors who are		Proportion of investors who own less than one lot	Mean age
			Institutions	Individuals	Nominee registered investors	Males	Finnish speaking		
HSE main list									
Banks and financing									
*Interbank A	10	26	87.9 %	11.9 %	0.0 %	88.9 %	100.0 %	7.7 %	46.8
Interbank B	95	1096	71.9 %	11.5 %	15.9 %	75.6 %	90.7 %	62.1 %	44.8
Merita A	10915	326664	42.7 %	35.3 %	21.7 %	51.3 %	92.9 %	78.1 %	45.2
Merita B	1062	44923	40.5 %	57.1 %	2.0 %	52.3 %	91.7 %	76.8 %	44.6
OKO A	512	29126	63.5 %	22.0 %	12.9 %	57.1 %	94.6 %	94.4 %	45.4
*OKO K	883	304	100.0 %	0.0 %	0.0 %	96.4 %	0.0 %		
Ålandsbanken E	342	7968	41.6 %	53.2 %	3.3 %	54.9 %	21.6 %	59.3 %	45.8
Ålandsbanken K	428	6387	63.2 %	34.2 %	0.3 %	52.7 %	10.2 %	63.6 %	46.0
Insurance and investment									
Arctos Capital	76	1368	76.7 %	20.1 %	2.2 %	70.3 %	94.2 %	57.9 %	45.0
Citycon	268	469	99.1 %	0.8 %	0.0 %	72.4 %	94.0 %	81.9 %	47.9
Interavanti	90	1168	55.1 %	37.7 %	4.6 %	65.7 %	94.0 %	34.3 %	46.7
*Norvestia A	24	1	100.0 %	0.0 %	0.0 %	100.0 %	0.0 %		
Norvestia B	391	6062	62.5 %	34.8 %	2.2 %	54.0 %	86.5 %	44.2 %	49.9
Pohjola A	2250	5145	90.7 %	4.6 %	4.5 %	58.5 %	93.5 %	75.2 %	52.4
Pohjola B	2077	6517	46.1 %	5.7 %	48.2 %	59.9 %	91.4 %	74.2 %	50.9
Other services									
Birka Line E	168	2028	66.5 %	30.6 %	0.1 %	56.0 %	6.6 %	39.7 %	51.6
Birka Line K	175	2110	52.0 %	41.2 %	0.0 %	52.7 %	3.9 %	30.1 %	54.4
Espoon Sähkö	1605	446	91.2 %	0.7 %	8.0 %	73.3 %	87.4 %	53.4 %	50.0
Finnair	2708	7702	83.9 %	2.9 %	13.1 %	65.5 %	91.9 %	69.6 %	45.5
Finnlines	2166	2420	80.3 %	5.0 %	14.7 %	69.6 %	75.1 %	25.5 %	50.6
Ford	454	1171	94.9 %	4.6 %	0.2 %	65.9 %	83.4 %	52.9 %	49.6
*Kesko K	2071	5344	69.4 %	30.3 %	0.0 %	59.4 %	92.4 %	17.4 %	57.7
Kesko V	3784	22857	50.2 %	25.6 %	23.9 %	53.8 %	90.2 %	37.5 %	47.4
Länsivoima	1403	3414	78.0 %	21.3 %	0.2 %	57.4 %	90.5 %	29.3 %	54.1
Rautakirja A	1755	553	94.9 %	5.1 %	0.0 %	53.3 %	92.8 %	38.2 %	50.4

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			Institutions	Individuals	Nominee registered investors	Males	Finnish speaking		
HSE main list (continued)									
Other services									
Rautakirja B	335	510	91.0 %	8.0 %	1.0 %	57.9 %	88.6 %	57.6 %	50.7
Silja A	499	2318	81.8 %	5.6 %	12.3 %	67.8 %	55.0 %	62.8 %	51.3
Silja K	308	1133	94.5 %	2.2 %	3.2 %	64.6 %	67.0 %	74.6 %	53.1
Starckjohann	935	1071	89.4 %	10.5 %	0.1 %	74.1 %	93.0 %	53.8 %	47.1
Stockmann A	2321	9470	79.4 %	17.7 %	2.6 %	46.4 %	78.2 %	37.0 %	53.0
Stockmann B	1688	9701	68.2 %	19.3 %	12.1 %	47.0 %	77.8 %	57.1 %	52.9
TT Tieto	3396	2585	43.3 %	8.9 %	47.7 %	62.2 %	86.0 %	22.8 %	47.4
Tamro	2707	8841	62.5 %	8.4 %	28.2 %	52.1 %	87.3 %	60.4 %	50.1
Forest industry									
Enso A	6633	9069	95.2 %	3.4 %	1.3 %	63.9 %	90.4 %	62.6 %	49.4
Enso R	4859	11262	58.1 %	7.5 %	34.4 %	63.7 %	89.3 %	54.7 %	50.4
Metsä-Serla A	1254	2565	94.4 %	4.0 %	1.3 %	63.5 %	82.7 %	63.2 %	52.2
Metsä-Serla B	3542	34247	34.3 %	9.4 %	55.4 %	78.1 %	88.4 %	85.8 %	57.3
UPM-Kymmene	25947	62969	48.2 %	15.6 %	35.6 %	57.0 %	86.7 %	47.8 %	49.6
Metal industry									
Fiskars A	1596	2549	57.6 %	26.0 %	15.3 %	63.4 %	70.1 %	34.0 %	50.3
Fiskars K	967	1338	61.2 %	30.4 %	7.0 %	64.6 %	67.4 %	35.4 %	50.4
KCI Konecranes Int.	2175	402	10.4 %	7.7 %	81.0 %	77.2 %	69.4 %	7.5 %	46.2
*Kone A	590	5	91.8 %	8.2 %	0.0 %	100.0 %	80.0 %	0.0 %	64.0
Kone B	2823	5005	69.7 %	10.1 %	20.2 %	61.4 %	86.3 %	27.1 %	47.7
Metra A	3607	11938	75.4 %	20.0 %	4.0 %	55.2 %	70.9 %	57.4 %	53.7
Metra B	3356	14660	47.2 %	23.8 %	28.5 %	55.4 %	72.6 %	54.7 %	52.2
Outokumpu	9776	8159	63.2 %	6.0 %	30.8 %	72.7 %	94.5 %	37.3 %	48.0
Rauma	5238	749	84.2 %	0.5 %	15.3 %	73.8 %	91.2 %	18.2 %	50.6
Rautaruukki	5110	8598	87.7 %	3.9 %	8.3 %	68.5 %	92.8 %	60.1 %	46.0
Raute A	110	553	40.5 %	55.6 %	3.8 %	79.6 %	92.2 %	22.6 %	44.8
*Raute K	42	50	0.0 %	100.0 %	0.0 %	60.0 %	100.0 %	0.0 %	33.7
Santasalo-JOT	318	665	33.9 %	55.9 %	10.1 %	71.5 %	86.5 %	38.5 %	44.6
Tampella	1666	6254	87.0 %	6.9 %	6.0 %	74.7 %	88.0 %	48.4 %	47.6
Valmet	6326	12265	44.1 %	5.0 %	50.8 %	73.1 %	88.6 %	21.7 %	49.4

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			Institutions	Individuals	Nominee registered investors	Males	Finnish speaking		
HSE main list (continued)									
Conglomerates									
Amer A	2067	14822	18.5 %	16.5 %	64.8 %	57.5 %	92.4 %	67.0 %	45.8
*Amer K	189	4	100.0 %	0.0 %	0.0 %	100.0 %	0.0 %		
Asko	2277	1419	86.6 %	4.1 %	9.2 %	63.6 %	84.4 %	40.2 %	49.8
Hackman A	444	2742	16.7 %	63.9 %	16.9 %	61.4 %	83.4 %	62.7 %	46.0
*Hackman K	101	114	4.5 %	93.3 %	0.0 %	55.6 %	15.8 %	12.3 %	45.1
Instru A	2580	8387	64.3 %	30.2 %	5.4 %	53.7 %	90.0 %	26.5 %	49.3
Instru B	812	5449	44.5 %	18.6 %	36.6 %	53.9 %	89.5 %	58.4 %	49.7
Lassila & Tikanoja	1290	691	73.3 %	21.6 %	4.5 %	58.8 %	90.4 %	25.8 %	49.3
Partek	2753	10993	76.0 %	18.2 %	5.4 %	56.2 %	67.9 %	36.5 %	52.0
Suunto	294	330	74.1 %	3.3 %	22.6 %	75.9 %	86.7 %	21.5 %	44.9
Other industries									
Aamulehti I	603	1679	79.4 %	20.0 %	0.2 %	55.3 %	97.7 %	44.7 %	52.7
Aamulehti II	767	2006	44.7 %	4.3 %	35.8 %	58.0 %	98.0 %	71.2 %	55.5
Aspo	895	921	55.1 %	39.4 %	2.7 %	64.3 %	85.0 %	8.9 %	47.4
Atria KI	129	6769	52.1 %	24.3 %	20.6 %	72.1 %	97.0 %	88.6 %	46.2
*Atria KII	507	3	100.0 %	0.0 %	0.0 %	100.0 %	0.0 %		
Cultor I	3795	9582	67.3 %	13.0 %	19.5 %	59.2 %	81.5 %	57.8 %	54.5
Cultor II	1865	6845	24.4 %	7.0 %	68.5 %	59.6 %	82.6 %	78.9 %	53.0
Finvest A	106	1494	80.0 %	18.9 %	0.8 %	67.0 %	93.3 %	86.0 %	51.9
Finvest B	307	3176	52.9 %	27.2 %	19.8 %	71.0 %	87.9 %	63.9 %	47.6
Hartwall A	2137	2792	42.6 %	41.0 %	16.3 %	65.0 %	84.2 %	48.2 %	45.1
*Hartwall K	299	2	100.0 %	0.0 %	0.0 %	0.0 %	0.0 %		
Huhtamäki I	3689	12849	40.4 %	11.7 %	47.7 %	53.0 %	89.7 %	56.9 %	51.5
Huhtamäki K	2631	11528	80.7 %	17.7 %	1.4 %	51.9 %	92.6 %	49.0 %	51.4
Kemira	7470	15417	70.0 %	5.3 %	24.6 %	73.8 %	90.6 %	61.4 %	50.1
Lemminkäinen	642	1756	25.0 %	73.4 %	1.4 %	72.7 %	90.8 %	49.9 %	46.5
Leo Longlife A	79	784	32.6 %	58.9 %	8.1 %	69.7 %	89.0 %	32.9 %	46.8
*Leo Longlife K	22	3	0.0 %	100.0 %	0.0 %	66.7 %	100.0 %	0.0 %	58.0
Lännen Tehtaat	400	6912	68.5 %	29.4 %	0.1 %	81.6 %	95.9 %	66.1 %	54.9
Neste	11035	22344	94.2 %	4.5 %	1.3 %	73.8 %	90.9 %	45.7 %	49.3
Nokia A	53317	17546	6.1 %	4.4 %	89.4 %	59.3 %	85.1 %	27.3 %	48.7

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HSE main list (continued)									
Nokia K	26524	13623	73.2 %	10.6 %	16.0 %	53.8 %	80.2 %	24.0 %	51.0
Nokian Renkaat	1014	836	72.5 %	3.1 %	24.4 %	63.9 %	88.9 %	40.8 %	54.1
Orion A	4818	9461	50.8 %	48.2 %	0.7 %	51.4 %	93.6 %	19.7 %	50.4
Orion B	4161	14493	49.9 %	41.1 %	8.8 %	50.1 %	92.3 %	20.7 %	49.0
Polar	767	4266	83.3 %	4.5 %	12.0 %	66.2 %	95.0 %	73.6 %	45.4
Raision Tehtaat V	3303	12334	6.8 %	19.7 %	72.9 %	77.1 %	89.7 %	60.2 %	51.6
Tamfelt E	489	1532	61.9 %	33.5 %	4.0 %	59.5 %	77.5 %	27.3 %	49.7
Tamfelt K	325	951	55.0 %	44.1 %	0.0 %	57.2 %	73.6 %	27.3 %	49.7
Tulikivi A	64	2018	38.1 %	53.4 %	7.5 %	67.8 %	95.3 %	73.7 %	44.4
Other services									
*Tulikivi K	23	13	7.5 %	91.6 %	0.6 %	71.4 %	100.0 %	0.0 %	40.6
Vaisala A	1029	2215	39.1 %	47.1 %	12.7 %	65.9 %	91.0 %	7.1 %	46.4
*Vaisala K	257	62	41.9 %	56.8 %	0.0 %	57.1 %	100.0 %	0.0 %	48.3
WSOY A	287	809	85.6 %	14.0 %	0.3 %	46.0 %	95.4 %	29.2 %	54.9
WSOY B	1152	3613	62.8 %	18.2 %	18.8 %	47.8 %	94.6 %	11.7 %	52.5
YIT	1316	1712	93.6 %	2.9 %	3.5 %	75.1 %	93.8 %	51.5 %	48.2
OTC list									
Alcom	5	520	64.5 %	21.2 %	0.3 %	78.4 %	94.4 %	43.5 %	42.3
Chips E	466	1770	67.2 %	26.0 %	6.1 %	61.7 %	30.7 %	34.3 %	46.9
*Chips K	540	993	73.8 %	25.9 %	0.0 %	65.0 %	1.5 %	42.0 %	50.2
Efore A	188	503	54.8 %	21.3 %	23.8 %	75.8 %	87.9 %	12.7 %	45.6
*Efore K	18	4	56.3 %	43.7 %	0.0 %	66.7 %	100.0 %	0.0 %	60.0
Elecster A	22	650	47.9 %	38.6 %	4.7 %	73.3 %	94.2 %	50.6 %	46.8
*Elecster K	94	4	81.1 %	0.7 %	0.0 %	50.0 %	100.0 %	0.0 %	65.5
*Honkarakenne A	8	9	43.2 %	56.8 %	0.0 %	71.4 %	100.0 %	0.0 %	52.1
Honkarakenne B	101	1146	48.8 %	40.4 %	10.4 %	75.4 %	90.4 %	28.2 %	44.7
Isko A	31	436	28.1 %	64.0 %	4.0 %	74.9 %	90.8 %	45.4 %	46.9
*Isko K	31	5	0.0 %	100.0 %	0.0 %	80.0 %	100.0 %	0.0 %	46.0
Kasola A	23	469	56.0 %	39.3 %	4.5 %	78.9 %	92.1 %	55.4 %	46.6
*Kasola K	3	4	0.0 %	100.0 %	0.0 %	50.0 %	100.0 %	0.0 %	42.0
Kauppakaari	172	242	83.1 %	2.3 %	14.5 %	71.1 %	92.1 %	18.6 %	45.5
*Larox A	28	15	0.0 %	100.0 %	0.0 %	57.1 %	100.0 %	13.3 %	24.6
Larox B	75	690	35.1 %	63.5 %	0.8 %	75.0 %	93.9 %	23.2 %	44.8

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OTC list (continued)									
Markk. Viherjuuri	48	269	19.3 %	73.4 %	6.7 %	74.4 %	88.8 %	17.5 %	46.1
Martela A	201	790	20.1 %	30.8 %	48.8 %	66.0 %	89.6 %	41.0 %	46.7
*Martela K	34	29	48.1 %	51.8 %	0.0 %	48.1 %	100.0 %	6.9 %	30.6
Olvi A	225	3476	55.2 %	28.1 %	15.1 %	70.3 %	93.5 %	28.7 %	44.8
*Olvi K	54	13	63.3 %	36.7 %	0.0 %	58.3 %	100.0 %	7.7 %	64.1
PI-Consulting	15	282	46.4 %	50.1 %	0.9 %	73.3 %	97.5 %	64.2 %	40.6
Penope A	11	105	82.4 %	16.5 %	0.0 %	83.6 %	92.4 %	34.3 %	45.3
*Penope K	10	3	49.4 %	50.6 %	0.0 %	100.0 %	100.0 %	0.0 %	37.5
Ponsse	312	791	11.1 %	77.6 %	10.6 %	79.4 %	96.5 %	17.6 %	45.6
*Rak. Konevuokr. A	22	19	99.9 %	0.0 %	0.0 %	100.0 %	31.6 %		
Rak. Konevuokr. B	105	330	94.6 %	4.2 %	0.0 %	69.0 %	93.6 %	34.8 %	49.4
Saunatec	139	390	80.6 %	6.3 %	12.8 %	71.7 %	87.2 %	19.0 %	42.1
Sentra A	86	428	37.7 %	12.7 %	49.0 %	63.8 %	63.1 %	46.3 %	50.4
Sentra K	91	227	82.5 %	11.2 %	5.7 %	55.4 %	33.9 %	28.2 %	59.2
Suomen Helasto	68	446	52.6 %	47.0 %	0.0 %	68.6 %	95.5 %	62.8 %	44.6
*Talentum A	45	49	99.0 %	1.0 %	0.0 %	52.6 %	95.9 %	18.4 %	58.5
Talentum B	290	1247	55.3 %	13.7 %	29.8 %	81.8 %	93.3 %	62.2 %	47.4
Vaahto-Group	201	303	17.6 %	76.5 %	5.7 %	76.5 %	83.8 %	22.4 %	46.0
Valtameri E	80	588	68.4 %	19.6 %	9.1 %	66.5 %	88.4 %	43.4 %	48.8
*Valtameri K	23	45	55.2 %	36.4 %	0.0 %	75.9 %	93.3 %	40.0 %	48.2
Yleiselekt. E	36	501	34.5 %	64.5 %	0.3 %	75.6 %	86.4 %	35.3 %	45.9
*Yleiselekt. K	6	1	0.0 %	100.0 %	0.0 %	100.0 %	100.0 %	0.0 %	52.0
Stockbrokers' list									
*Benefon K	39	4	91.0 %	9.0 %	0.0 %	100.0 %	100.0 %	0.0 %	51.5
Benefon S	320	1494	31.9 %	20.4 %	47.4 %	81.4 %	88.0 %	12.8 %	42.8
Ilkka 1	74	4209	45.5 %	48.9 %	0.8 %	76.0 %	99.6 %	82.8 %	57.0
Ilkka 2	172	4478	52.3 %	36.0 %	10.1 %	75.5 %	99.6 %	78.2 %	56.4
*Ingman Foods A	37	4	0.0 %	100.0 %	0.0 %	100.0 %	0.0 %	0.0 %	52.0
Ingman Foods B	283	876	19.8 %	79.0 %	0.3 %	68.0 %	39.2 %	40.5 %	54.8
Kekkilä	40	193	66.6 %	33.1 %	0.0 %	77.3 %	91.2 %	35.8 %	42.4
Raision Tehtaat K	1384	10311	25.1 %	71.9 %	0.8 %	82.6 %	88.7 %	54.7 %	54.2
*Turkistuott. A	83	11	99.2 %	0.6 %	0.0 %	66.7 %	72.7 %	0.0 %	47.3
Turkistuott. C	248	1980	78.3 %	16.9 %	0.2 %	88.5 %	47.8 %	40.5 %	50.9