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# Shareownership in Finland 2000\*

## ABSTRACT

*This paper utilizes a unique database consisting of all electronically registered shareholdings of Finnish stocks by more than one million individuals and institutions. These shareholdings cover more than 99.99% of the total market capitalization of Finnish stocks. Using these data, the paper documents patterns in shareownership in Finland at June 1, 2000 and prior changes since 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, province, and country of residence; (3) the distribution of IPO investors' gender and age; (4) the extent to which investors hold shares of companies headquartered in the investor's home municipality or province; (5) the concentration of individuals' investment wealth; (6) the number and socioeconomic attributes of individuals with at least one million FIM of investment wealth and how their number depends on the overall level of stock prices; (7) portfolio diversification; and (8) the relationship between a stock's ownership structure and exchange listing, industry, and market capitalization. Moreover, we report changes in ownership by investor category and changes in individuals' ownership concentration, diversification, and the distribution of ownership by province.*

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

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## 1. INTRODUCTION

This paper presents a descriptive analysis of shareownership patterns in Finnish listed companies in year 2000 using data from the Finnish Central Securities Depository (FCSD). Moreover, the paper analyzes investments in initial public offerings (IPOs) and trends in the shareownership patterns. In many respects, the paper is an update of Ilmanen and Keloharju (1999) which looked at shareownership patterns in Finland at the beginning of 1997. An important difference between the papers is that Ilmanen and Keloharju did not investigate IPO investments. The present paper also provides a more detailed description of the portfolios and socioeconomic attributes of wealthy investors and a more comprehensive analysis of trends in the shareownership patterns.

Our study reports 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 distribution of IPO investors' gender and age; (4) the extent to which investors hold shares of companies headquartered in the investor's home municipality or province; (5) the concentration of individuals' investment wealth; (6) the number and socioeconomic attributes of individuals with at least one million FIM of investment wealth and how their number depends on the overall level of stock prices; (7) portfolio diversification; and (8) the relationship between a stock's ownership structure and exchange listing, industry, and market capitalization. Moreover, we report changes in ownership by investor category and changes in individuals' ownership concentration, diversification, and the distribution of ownership by province.

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

Our data include the initial balance in FCSD's shareownership records at January 1, 1995 and all changes in these records until May 31, 2000 for all publicly quoted companies represented in the paperless system of share ownership and trading, called the Book Entry System. At the end of the sample period, all but 2 domestic listed companies (Kylpylākaskasino and SKOP) with more than 99.99% of stock market capitalization were represented in the Book Entry System; at the beginning of our sample period about 97% of the Finnish stock market capitalization was included in the register.<sup>1</sup> In all, there are about 25 million initial balance records and

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<sup>1</sup> In addition to the Finnish domiciled companies, our data include Nordic Baltic Holding and Danisco that are

changes of ownership in our data. 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 seven separate dates: on January 1 from 1995 through 2000 and on June 1, 2000.

The Book Entry System entails compulsory registration of holdings for Finnish individuals and institutions. Foreigners are partially exempt from registration as they can opt for registration in a street name. This means that their stockholdings are combined to a larger pool of nominee registered holdings and cannot be separated from each other by scientific investigation.

We use the data to generate the following information for each shareholder and for each point of time:<sup>2</sup>

- Investor identification number: from 1 to 1,050,230. 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 of 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.
- 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.
- Dummy variables for males and females (individual investors)
- Birth year (individual investors)
- Mother tongue (individual investors)
- Zip code. We designate investors with a post office box number to the respective zip code.
- Country of residence

In addition, the data allow us to compute IPO allocations by investor and stock based on the ownership change type. There are 50 IPOs with 179,630 different privately registered inves-

domiciled outside of Finland but have significant Finnish ownership. The two other foreign domiciled companies listed on the Helsinki Stock Exchange, Eesti Uhispank and Hansapank, are not included in the Book Entry System.

<sup>2</sup> For more details of the data, see Ilmanen and Keloharju (1999) and Grinblatt and Keloharju (2000a, 2000b, 2000c).

tors in the FCSD sample. We compare the participation patterns in these IPOs to those from an older sample. The older sample is the same as that used in Keloharju (2000). It includes age, gender and zip code data from 85,384 investors who participated in 29 IPOs taken public by Kansallis-Osake-Pankki and its investment bank arm Prospectus between 1987 and 1994. Moreover, the older sample includes data on all subscriptions made by proxy in one large branch in the Greater Helsinki Area.

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. For the same reason, we do not consider individuals' indirect ownership through mutual funds.

Many companies have listed two share classes one of which 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. Unlisted share classes are not analyzed in the paper.

To put the data obtained from FCSD into perspective, we compare it to population statistics detailed in Statistics Finland's *Statistical Yearbook in Finland 1995–99* and on its web page and in *Finland CD 1998* database. Statistics Finland's data also 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. Foreign investors are by far the largest investor category: at June 1, 2000, they owned 69.9% of the market capitalization. Foreigners' predominant role is largely due to their almost 90% ownership stake in Nokia which accounts for about two-thirds of the market capitalization on the Helsinki Stock Exchange; without Nokia, foreigners would have a 32% ownership stake in Finnish stocks. Domestic institutions own 20.2% and domestic household investors 7.0% of aggregate investment wealth. The remaining 2.9% is attributable to miscellaneous ownership categories and to investors whose institutional status is unknown.

The median investment wealth for household investors is 31,200 FIM, displaying a significant increase from 1997 when it was only 8,100 FIM. The investment wealth for the median household IPO investor is 72,200 FIM, suggesting that IPO investors are wealthier than investors at large. The most common investment, corresponding to median portfolio size, is an ownership of 150 stocks of HPY Holding (currently Elisa Communications). These ownership stakes

**TABLE 1. Investment wealth by investor category at June 1, 2000.**

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. 7 FIM = 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
<i>Categorization by ownership type:</i>					
Institutions	33 668	13 817.2	62.4	465 198	20.2 %
Males	396 544	267.6	31.2	106 099	4.6 %
Females	336 299	166.9	31.2	56 134	2.4 %
Individuals total	732 843	221.4	31.2	162 233	7.0 %
Institutional status unknown	13 092	226.0	31.2	2 958	0.1 %
Privately registered foreign ownership	3 348	4 838.4	40.8	16 199	0.7 %
Privately registered ownership total	782 951	825.8	31.2	646 589	28.0 %
Nominee registered ownership				1 594 252	69.2 %
Other ownership types				64 643	2.8 %
Registered ownership total				2 305 484	100.0 %
<i>Categorization by line of business or profession for privately registered ownership:</i>					
Non-financial corporations	25 891	4 246.8	62.4	109 953	4.8 %
Deposit money and other credit corporations	310	10 983.7	1 086.7	3 405	0.1 %
Insurance corporations	107	541 874.2	583.8	57 981	2.5 %
Fin. auxiliaries and other fin. intermediaries	103	40 322.7	125.4	4 153	0.2 %
Financial and insurance institutions total	520	126 036.0	846.3	65 539	2.8 %
General government	428	385 398.0	126.4	164 950	7.2 %
Employment pension schemes	79	798 099.1	72 771.9	63 050	2.7 %
Other social security funds	34	157 501.9	553.5	5 355	0.2 %
General government total	541	431 340.5	210.0	233 355	10.1 %
Non-profit institutions	5 576	9 123.2	31.2	50 871	2.2 %
Employers and own-account workers	42 130	121.1	17.5	5 101	0.2 %
Employees	582 459	239.0	31.2	139 221	6.0 %
Other households	117 807	185.6	26.3	21 861	0.9 %
Households total	742 396	223.8	31.2	166 183	7.2 %
Rest of the world	4 064	4 098.7	40.8	16 657	0.7 %
Unknown	3 963	1 017.2	49.6	4 031	0.2 %
Privately registered ownership total	782 951	825.8	31.2	646 589	28.0 %

originate from ownership of one telephone share in the former HPY.<sup>3</sup> Without HPY Holding, the median household portfolio would be worth 19,100 FIM. As expected, households' mean portfolio, 223,800 FIM, is worth much more than the median portfolio. The difference between the mean and the median is driven by the fact that there are many investors with large ownership stakes.

<sup>3</sup> The former HPY was a telephone co-operative operating in the Greater Helsinki Area. Many people opening a telephone connection with the HPY bought a share of the co-operative which allowed them to buy telephone services at a discount. These shares were converted into common stock when the co-operative was transformed into a public company.

**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 except that "June 2000" refers to June 1, 2000.

	Proportion of total investment wealth											
	Including all stocks					Excluding Sonera, Helsingin Puhelin, and HPY Holding						
	1995	1996	1997	1998	1999	2000	June 2000	1998	1999	2000	June 2000	
<i>Categorization by ownership type:</i>												
Domestic												
Institutions	47.9 %	49.4 %	44.5 %	38.4 %	34.6 %	25.1 %	20.2 %	38.3 %	30.0 %	18.0 %	14.6 %	
Individuals	17.1 %	15.5 %	15.0 %	14.8 %	9.9 %	8.4 %	7.0 %	14.8 %	10.5 %	8.6 %	8.3 %	
Foreign ownership	30.3 %	31.7 %	36.9 %	42.4 %	51.1 %	62.7 %	69.9 %	42.6 %	54.6 %	68.9 %	73.9 %	
Institutional status unknown or other ownership types	4.7 %	3.4 %	3.6 %	4.3 %	4.4 %	3.8 %	2.9 %	4.3 %	4.9 %	4.5 %	3.3 %	
Registered ownership total	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	
<i>Categorization by line of business for privately registered ownership:</i>												
Domestic												
Non-financial corporations	21.6 %	20.9 %	19.6 %	18.7 %	20.1 %	15.2 %	16.6 %	18.4 %	23.1 %	18.2 %	18.8 %	
Financial and insurance institutions total	13.4 %	12.1 %	13.9 %	13.6 %	12.6 %	11.1 %	9.7 %	13.7 %	14.7 %	15.0 %	12.2 %	
General government total	27.4 %	31.7 %	29.2 %	27.1 %	35.7 %	39.9 %	34.8 %	27.3 %	25.5 %	22.7 %	20.1 %	
Non-profit institutions	7.5 %	7.1 %	7.4 %	7.2 %	6.9 %	6.9 %	7.8 %	7.3 %	8.1 %	9.8 %	10.4 %	
Households total	21.2 %	19.8 %	20.6 %	22.6 %	18.7 %	21.5 %	24.6 %	22.5 %	21.8 %	27.1 %	30.2 %	
Privately registered foreign ownership	5.1 %	5.4 %	6.2 %	7.3 %	2.8 %	1.9 %	2.5 %	7.4 %	3.4 %	2.7 %	3.3 %	
Unknown	3.9 %	3.0 %	3.1 %	3.4 %	3.2 %	3.4 %	4.0 %	3.4 %	3.5 %	4.4 %	5.1 %	
Privately registered ownership total	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	

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 (10.1%), households (7.2%), non-financial corporations (4.8%), financial and insurance institutions (2.8%), and non-profit institutions (2.2%).

Table 2 shows how the distribution of investment wealth has changed across investment categories during the time period. Moreover, to take into account the stock exchange listings that probably have had the largest impact on investment wealth and its distribution across investment categories, we recompute the statistics at the four most recent points of time by excluding Sonera, Helsingin Puhelin and HPY Holding.

As expected, the results clearly show that the role of foreign ownership has steadily increased over time. Households and, to a lesser extent, non-profit institutions have experienced a surge in ownership fraction after January 1999, whereas the ownership fractions of non-financial corporations, finance and insurance institutions, and the general government have decreased. Households' increasing role can probably be at least partly explained by the listings of technology companies in which individuals as initial owners tend to account for a large fraction of ownership.

### **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 at large, for IPO investors in 1987–94 and 1995–2000, and for the entire Finnish population. Moreover, the table tabulates the gender and age distribution of investment wealth. The mean age of male investors is 47.9 years and that of female investors is 50.2 years whereas the corresponding numbers for the population are 37.5 and 40.8 years. In other words, male investors are on average ten years and female investors nine years older than the population average.

A comparison of the overall investor population and the IPO investor population suggests that IPO investors are younger than investors at large: male IPO investors are on average five years younger and female IPO investors seven years younger than investors on average at the time when they make their first IPO subscription. The average age of IPO investors in years 1987–94, 35.0 years for males and 35.9 years for females, is even lower than that for the 1995–2000 period.

One plausible reason for the change in the age structure of IPO subscribers is the much-discussed proxy subscriptions in the 1980s, which may have artificially lowered the average age of the subscribers. One important motivation for collecting proxies from others is to split a large order into several smaller orders. This allows large subscribers to take advantage of allocation rules, which generally have favored small orders (Keloharju (1993)). In many cases the

**TABLE 3. Population, investors, and investment wealth by age and sex.**

Investor age and investment wealth figures are from June 1, 2000 and population age figures from January 1, 2000. Half of the investors are assumed to have been born during the first half of each year. The age of IPO investors is taken at the time of the first subscription. Millionaires refer to individual investors with at least FIM 1 million worth of shares.

Age	Population		Individual investors at large				# of millionaires				Individual IPO Investors			
	# of investors		Investment wealth		# of millionaires		1987-1994		1995-2000		1987-1994		1995-2000	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
90-	0.1 %	0.3 %	0.3 %	0.5 %	0.7 %	0.8 %	1.6 %	1.5 %	0.0 %	0.0 %	0.0 %	0.0 %	1.1 %	1.0 %
85-89	0.3 %	0.8 %	0.6 %	0.9 %	1.3 %	1.1 %	1.8 %	1.7 %	0.0 %	0.0 %	0.0 %	0.0 %	1.0 %	0.9 %
80-84	0.5 %	1.3 %	1.1 %	1.5 %	1.9 %	1.8 %	2.8 %	2.8 %	0.1 %	0.2 %	0.1 %	0.2 %	1.3 %	1.1 %
75-79	1.1 %	2.0 %	2.0 %	2.3 %	3.1 %	4.0 %	4.1 %	3.8 %	0.3 %	0.3 %	0.3 %	0.3 %	1.8 %	1.0 %
70-74	1.7 %	2.4 %	2.9 %	2.8 %	3.9 %	2.7 %	5.3 %	3.7 %	0.6 %	0.5 %	0.6 %	0.5 %	4.6 %	1.7 %
65-69	2.0 %	2.4 %	3.5 %	3.1 %	6.5 %	2.6 %	5.9 %	3.2 %	1.1 %	0.7 %	1.1 %	0.7 %	6.1 %	2.3 %
60-64	2.4 %	2.6 %	4.4 %	3.7 %	5.0 %	2.9 %	6.3 %	3.4 %	1.9 %	1.1 %	1.9 %	1.1 %	7.0 %	3.0 %
55-59	2.7 %	2.8 %	5.6 %	4.7 %	7.7 %	4.3 %	8.9 %	4.3 %	3.1 %	1.9 %	3.1 %	1.9 %	6.0 %	2.7 %
50-54	4.1 %	4.1 %	6.7 %	5.4 %	9.3 %	4.1 %	8.9 %	3.8 %	4.5 %	2.5 %	4.5 %	2.5 %	6.1 %	2.9 %
45-49	4.0 %	3.9 %	5.0 %	4.1 %	6.1 %	2.8 %	5.3 %	2.3 %	6.1 %	3.3 %	6.1 %	3.3 %	6.7 %	3.4 %
40-44	3.8 %	3.7 %	4.4 %	3.4 %	5.5 %	1.7 %	3.8 %	1.7 %	8.7 %	4.5 %	8.7 %	4.5 %	7.9 %	4.5 %
35-39	3.8 %	3.6 %	4.3 %	3.3 %	4.4 %	1.5 %	2.9 %	1.2 %	7.5 %	4.0 %	7.5 %	4.0 %	5.5 %	3.2 %
30-34	3.5 %	3.4 %	3.9 %	2.9 %	5.9 %	1.3 %	1.8 %	1.1 %	6.8 %	3.4 %	6.8 %	3.4 %	4.4 %	2.5 %
25-29	3.0 %	2.9 %	3.2 %	2.3 %	1.8 %	1.0 %	1.3 %	0.8 %	7.3 %	3.6 %	7.3 %	3.6 %	2.9 %	1.7 %
20-24	3.2 %	3.1 %	2.4 %	1.7 %	1.1 %	0.8 %	0.9 %	0.7 %	6.7 %	3.6 %	6.7 %	3.6 %	1.9 %	1.2 %
15-19	3.3 %	3.1 %	1.8 %	1.4 %	0.8 %	0.5 %	0.7 %	0.6 %	3.0 %	1.9 %	3.0 %	1.9 %	0.9 %	0.6 %
10-14	3.1 %	3.0 %	1.1 %	0.9 %	0.4 %	0.3 %	0.4 %	0.3 %	2.1 %	1.9 %	2.1 %	1.9 %	0.4 %	0.3 %
5-9	3.2 %	3.1 %	0.7 %	0.6 %	0.2 %	0.2 %	0.1 %	0.1 %	1.8 %	1.7 %	1.8 %	1.7 %	0.1 %	0.1 %
0-4	2.9 %	2.8 %	0.4 %	0.3 %	0.1 %	0.1 %	0.0 %	0.0 %	1.6 %	1.3 %	1.6 %	1.3 %	0.1 %	0.1 %
Totals	48.8 %	51.2 %	54.1 %	45.9 %	65.4 %	34.6 %	62.9 %	37.1 %	63.4 %	36.6 %	63.4 %	36.6 %	66.0 %	34.0 %
Mean age	37.5	40.8	47.9	50.2			57.8	60.9	35.0	35.9	42.3	43.1		



receiver of the proxy, not the proxy issuer, has been the actual end investor. Large-scale use of proxies was probably much less common in the 1990s.

Keloharju (2000) examines the use of proxies in the 1980s by collecting data of their actual usage from one large branch from the Greater Helsinki Area. 42% of the number of subscriptions placed in that branch, and 48% of the total subscription volume, were proxy subscriptions. The proxy issuers had an average age of 30 years, i.e. they were five years younger than the average subscriber in the sample. The relatively young age of the proxy issuers is probably due to the fact that many of them were apparently underaged children of the receivers of the proxy. Moreover, the financial press has reported of investors who collected large numbers of proxies from high school students in some hot offers.<sup>4</sup>

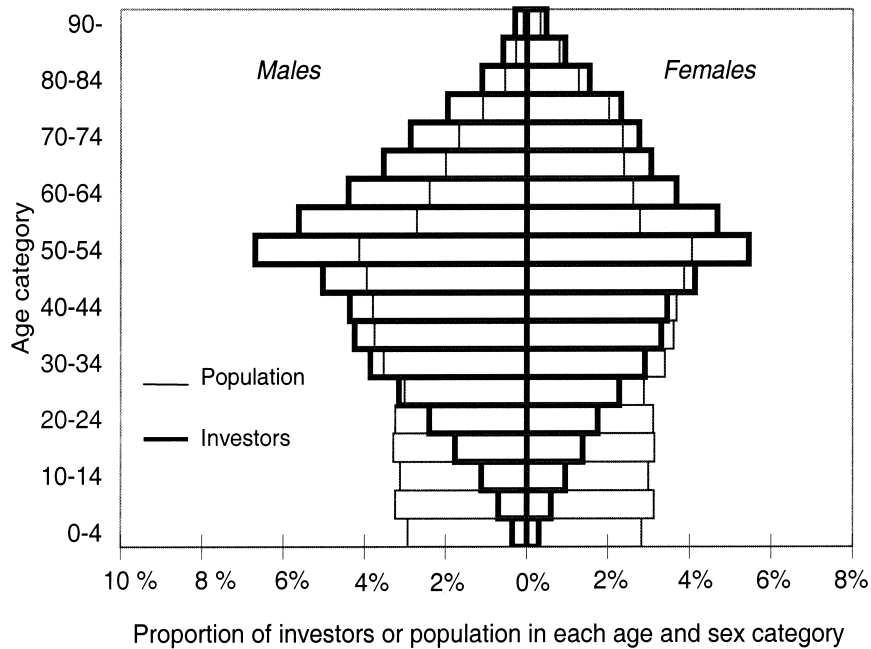
The shareownership patterns of males and females differ from each other. 54.1% of the individual investors are males and 45.9% of them are females. Shareownership wealth is more skewed towards males than the fraction of the number of investors: males own 65.4% and females 34.6% of individuals' combined investment wealth. Males' ownership fraction has increased somewhat from the beginning of 1997 when it was 63.0%. Relating our results to population data suggests that 15.7% of Finnish males and 12.7% of females – 14.2% of the population – own shares directly.

The gender distribution for IPO investors differs markedly from that for the general investor population. The fraction of males among IPO investors is 66.0%, i.e. 12 percentage points more than among investors at large. In the older IPO sample, the fraction of males is lower, 63.3%. At least part of the difference between the fractions of male investors may be explained by the different impact of proxy subscriptions. Keloharju's (2000) data suggests that the majority of the proxy issuers, 54%, were females whereas the overwhelming majority of the receivers of the proxies, 76%, were males. In other words, the fraction of female investors in the 1980s may have been artificially inflated by the fact that many of them were simply issuing proxies to male investors who were the actual end investors.

Table 3 also reports the fraction of investors with at least one million FIM worth of shares (henceforth, millionaires) by age and sex. As expected from the investment wealth figures, males are more dominant among millionaires than among investors at large. Men account for 62.9% for the millionaires, which is almost nine percentage points more than their fraction of all investors. Moreover, millionaires also tend to be more senior people than investors in general. Millionaire males are on average 57.8 years, i.e. ten years older than investors at large. Millionaire females are on average 60.9 years old.

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4 Kauppalehti May 5, 1988, p. 17.

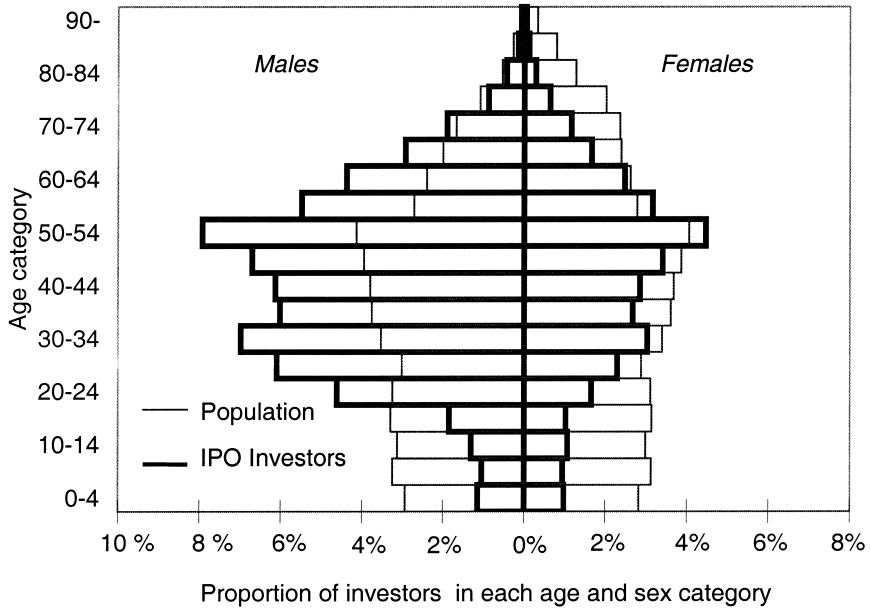


**FIGURE 1. Investors and population by age and sex. Investor data are from June 1, 2000 and population data from January 1, 2000.**

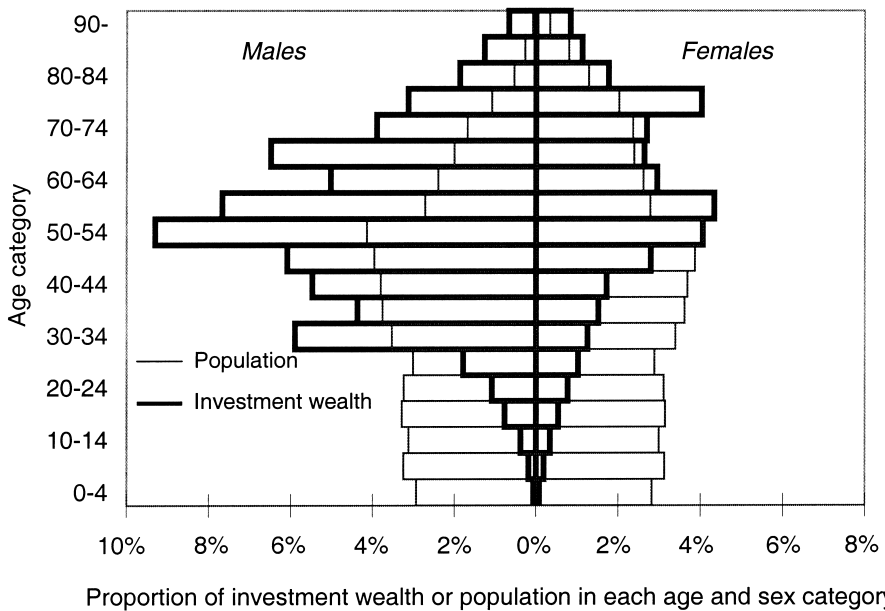
Figure 1 illustrates the proportion of inhabitants and investors in each age and sex category. Figure 2 illustrates the proportion of inhabitants and IPO investors in each age and sex category. Figure 3 compares the proportion of inhabitants in each age and sex category to the proportion of investment wealth owned by the investors in this category.

Figure 4 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 1970 is 116,400 FIM whereas that for investors born in 1940 is 248,400 FIM. It is interesting to note that the mean wealth is approximately a linear function of investor age whereas the median wealth (without HPY Holding), as shown by Figure 5, is not<sup>5</sup>: the median investment wealth for investors who were born before 1942 actually tends to be lower the older the investor is whereas for investors born after 1942 age is generally positively related to investment wealth.

<sup>5</sup> If HPY Holding is considered, the median investment is the same for most birth year cohorts. As discussed before, this is due to the fact that many investors own exactly 150 shares of HPY Holding, an outcome of their former holding of one share of HPY.



**FIGURE 2.** IPO investors and population by age and sex. Investor data are from 1995–2000 and population data from January 1, 2000. The age of IPO investors is taken at the time of the first subscription.



**FIGURE 3.** Investment wealth and population by age and sex. Investment wealth data are from June 1, 2000 and population data from January 1, 2000.

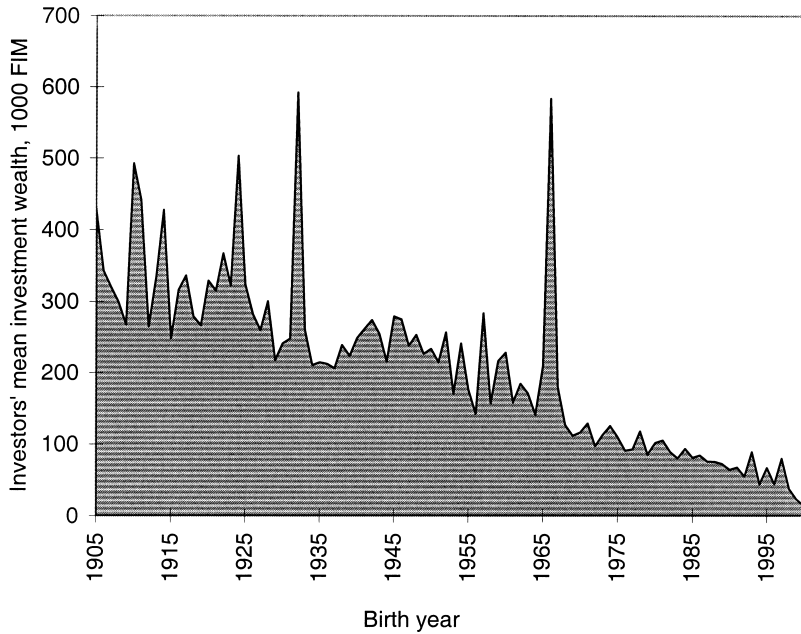


FIGURE 4. Investors' mean investment wealth as a function of birth year at June 1, 2000.

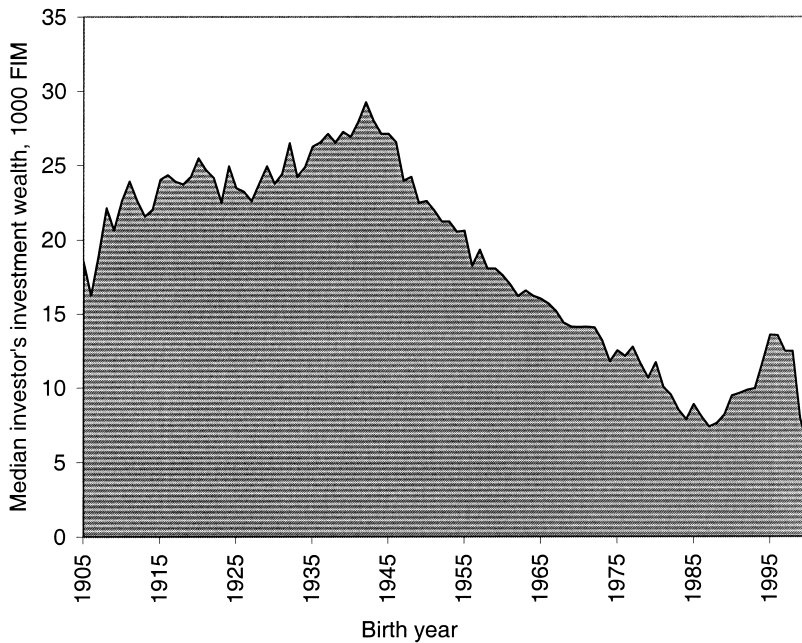


FIGURE 5. Median investor's investment wealth as a function of birth year at June 1, 2000 (HPY Holding excluded).

### 3.3. Investment activity and wealth by zip code, 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 provinces of Ahvenanmaa and Uusimaa stand out: the ratio of investor-inhabitants to all inhabitants is in Ahvenanmaa 33.5% and in Uusimaa 26.6% whereas the national average is 14.3%. The ratio of investor-inhabitants in Uusimaa is largely driven by the Greater Helsinki Area in which 29.8% of the inhabitants own stocks. The next-largest investment activity is in Pirkanmaa where 17.5% of the inhabitants own stocks. The average investment wealth per inhabitant is in Ahvenanmaa 112,900 FIM and in Uusimaa 75,100 FIM (in Greater Helsinki Area 93,600 FIM) whereas the national average is 31,400 FIM.

The distribution of aggregate investment wealth by region gives a good idea of where most of the stockownership wealth resides. Since the Greater Helsinki Area has much more inhabitants than Ahvenanmaa, the Greater Helsinki Area accounts for the majority, 54.6%, of shareownership wealth while Ahvenanmaa accounts only for 1.8% of shareownership wealth. Pirkanmaa and Varsinais-Suomi represent the second- and third-most important concentrations of shareownership wealth with 7.0% and 6.1% of aggregate shareownership wealth, respectively. Although not reported here formally, the geographic distribution of millionaires largely resembles the geographic distribution of aggregate investment wealth.

Table 4 also shows the distribution of the number of IPO investors and the number of investors at large by province. As expected, Uusimaa and the Greater Helsinki Area dominate the number of investor statistics, although less clearly than the aggregate wealth statistics. Somewhat surprisingly, however, IPO investment is less concentrated to the Greater Helsinki Area than investment at large. The Greater Helsinki Area accounts for 38.2% of all investors, whereas it accounted for 33.4% of IPO investors in 1995–2000 and 29.9% of IPO investors in 1987–1994. This below-normal IPO investment activity in the Greater Helsinki Area may simply be a consequence of an above-normal IPO investment activity in the rest of Finland, which again may be driven by the provinces where the IPO companies are headquartered. For example, the large IPO investment activity in Pohjois-Savo in the period 1987–94 is probably largely due to the success of the IPO of Olvi, a company based in Iisalmi in Pohjois-Savo. This may be because of the so-called distance effect or home bias, i.e. that investors are more likely to invest in companies located nearby (section 3.5. of the paper will demonstrate that the distance effect figures importantly for investors residing outside of the Greater Helsinki Region). This effect is further strengthened by the fact that employees – who tend to live close to the headquarters of the company – are often issued shares at a discount and they tend to be awarded relatively larger allocations of shares in the event the IPO is oversubscribed.

**TABLE 4. Investment activity and wealth by province and form of municipality at June 1, 2000.**

The number of inhabitants refers to their number at January 1, 2000.

Province or form of municipality	Number of individual investors	Number of investors / Number of inhabitants	Investors' mean investment 1000 FIM	Median		Sum of individuals' investment wealth, mill. FIM	Proportion of individuals' total investment wealth	Proportion of total number of individual investors	Proportion of total number of individual IPO investors	
				individual investor's investment 1000 FIM	investor's investment wealth, 1000 FIM				1987-1994	1995-2000
				Number of individual investors	Investment wealth, 1000 FIM				1987-1994	1995-2000
<i>Province:</i>										
Uusimaa	343 605	26.6 %	282.2	31.2	75.1	96 989	59.8 %	46.6 %	34.7 %	39.9 %
of which in Greater Helsinki Area*	281 746	29.8 %	314.1	31.2	93.6	88 504	54.6 %	38.2 %	29.9 %	33.4 %
Itä-Uusimaa	11 162	12.5 %	298.5	31.2	37.4	3 332	2.1 %	1.5 %	0.8 %	1.7 %
Varsinais-Suomi	47 991	10.8 %	206.8	24.5	22.3	9 924	6.1 %	6.5 %	9.2 %	8.7 %
Satakunta	22 654	9.5 %	196.6	19.6	12.9	3 095	1.9 %	3.1 %	3.0 %	4.0 %
Kanta-Häme	14 014	8.5 %	161.6	20.4	13.7	2 264	1.4 %	1.9 %	2.0 %	2.1 %
Pirkanmaa	78 029	17.5 %	145.2	10.5	25.3	11 329	7.0 %	10.6 %	6.9 %	7.9 %
Päijät-Häme	16 723	8.5 %	171.5	20.1	14.5	2 868	1.8 %	2.3 %	2.3 %	2.6 %
Kymenlaakso	15 099	8.0 %	141.4	21.5	11.3	2 135	1.3 %	2.0 %	2.2 %	2.2 %
Etelä-Karjala	11 722	8.5 %	149.2	20.4	12.7	1 749	1.1 %	1.6 %	1.5 %	1.8 %
Etelä-Savo	12 708	7.5 %	138.1	20.1	10.4	1 755	1.1 %	1.7 %	1.5 %	2.1 %
Pohjois-Savo	18 113	7.1 %	148.6	17.4	10.6	2 692	1.7 %	2.5 %	5.8 %	3.1 %
Pohjois-Karjala	10 652	6.2 %	165.4	20.0	10.2	1 761	1.1 %	1.4 %	1.9 %	1.8 %
Keski-Suomi	27 180	10.4 %	109.6	17.0	11.4	2 980	1.8 %	3.7 %	3.1 %	3.4 %
Etelä-Pohjanmaa	21 055	10.7 %	115.3	14.7	12.3	2 428	1.5 %	2.9 %	6.2 %	3.4 %
Pohjanmaa	20 672	11.9 %	193.5	20.0	23.0	4 000	2.5 %	2.8 %	2.9 %	4.1 %
Keski-Pohjanmaa	6 038	8.4 %	111.4	20.5	9.4	672	0.4 %	0.8 %	1.2 %	1.1 %
Pohjois-Pohjanmaa	24 331	6.7 %	176.0	19.8	11.8	4 283	2.6 %	3.3 %	6.9 %	4.8 %
Kainuu	5 502	6.0 %	157.5	21.2	9.5	867	0.5 %	0.7 %	1.2 %	0.9 %
Lappi	13 947	7.2 %	123.0	20.7	8.8	1 716	1.1 %	1.9 %	2.2 %	2.4 %
Anvenanmaa	8 624	33.5 %	336.6	24.8	112.9	2 903	1.8 %	1.2 %	1.3 %	1.0 %
Unknown	7 225					2 513	1.5 %	1.0 %	3.3 %	1.2 %
Whole country	737 046	14.3 %	220.1	31.2	31.4	162 233	100.0 %	100.0 %	100.0 %	100.0 %
<i>Form of municipality:</i>										
Urban municipality	556 836	16.3 %	246.3	31.2	40.1	137 143	84.5 %	75.5 %	76.5 %	76.5 %
Rural municipality	170 897	9.9 %	140.4	22.7	13.9	23 990	14.8 %	23.2 %	20.2 %	22.2 %
Unknown	9 313		118.2			1 101	0.7 %	1.3 %	3.3 %	1.2 %

\* Includes Helsinki, Espoo, Vantaa, and Kauniainen.

Figure 6 gives a more accurate description of the geographical distribution of shareownership by illustrating the number of investors per inhabitant figure at the zip code level. The graph shows clear concentration in investment activity in the Greater Helsinki Area, Ahvenanmaa, Pirkanmaa, Pohjanmaa, and Varsinais-Suomi. Figure 7 shows the distribution of investment wealth per inhabitant at the zip code level. Overall, there appears to be much less structure in the distribution of investment wealth per inhabitant than in the number of investors per inhabitant.<sup>6</sup>

Table 5 examines trends in ownership patterns by province. The Greater Helsinki Area has tended to increase its share of shareownership wealth over time (from a 45.9% in January 1995 to 54.6% in June 2000), although roughly one-quarter of this effect is due to the listing of HPY Holding in 1999 in which year Greater Helsinki's ownership fraction increased by 6.1% percentage points. Pirkanmaa experienced an analogous jump in shareownership wealth in 1998 when Tampereen Puhelin, a Pirkanmaa-based company, was listed. The rise and fall of Raisio's share price probably largely explains the changes in Varsinais-Suomi's fraction of investment wealth. Somewhat surprisingly, Pohjois-Pohjanmaa – which includes the Oulu region that performed economically very well in the late 1990s – does not seem to show any clear trend in shareownership wealth fraction.

Table 6 shows the distribution of the number of investors and investment wealth by country of residence. As explained, nominee registered investors – which account for about 99% of all foreign shareholdings – 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 27,000 FIM – 65,000 FIM, i.e. of the same order or larger than those of the entire investor pool (31,200 FIM). The countries with the largest proportions of aggregate foreign investment wealth are, somewhat unexpectedly, Sweden, Denmark, Spain, and France.

### 3.4. Investment wealth and mother tongue

Table 7 investigates how mother tongue is related to investment wealth. The Swedish-speaking minority (5.7% of the Finnish population) is much wealthier than the Finnish-speaking majority (92.5% of population): the average investment wealth of Finnish-speaking Finns owning stocks, 191,500 FIM, is less than one-third of the investment wealth of Swedish-speaking Finns owning stocks, 602,100 FIM. The ratio of investor-inhabitants to all inhabitants is also greater

<sup>6</sup> We experimented with a number different scalings in our investigation of the spatial structure of investment wealth per inhabitant. The results were largely similar to those displayed above.

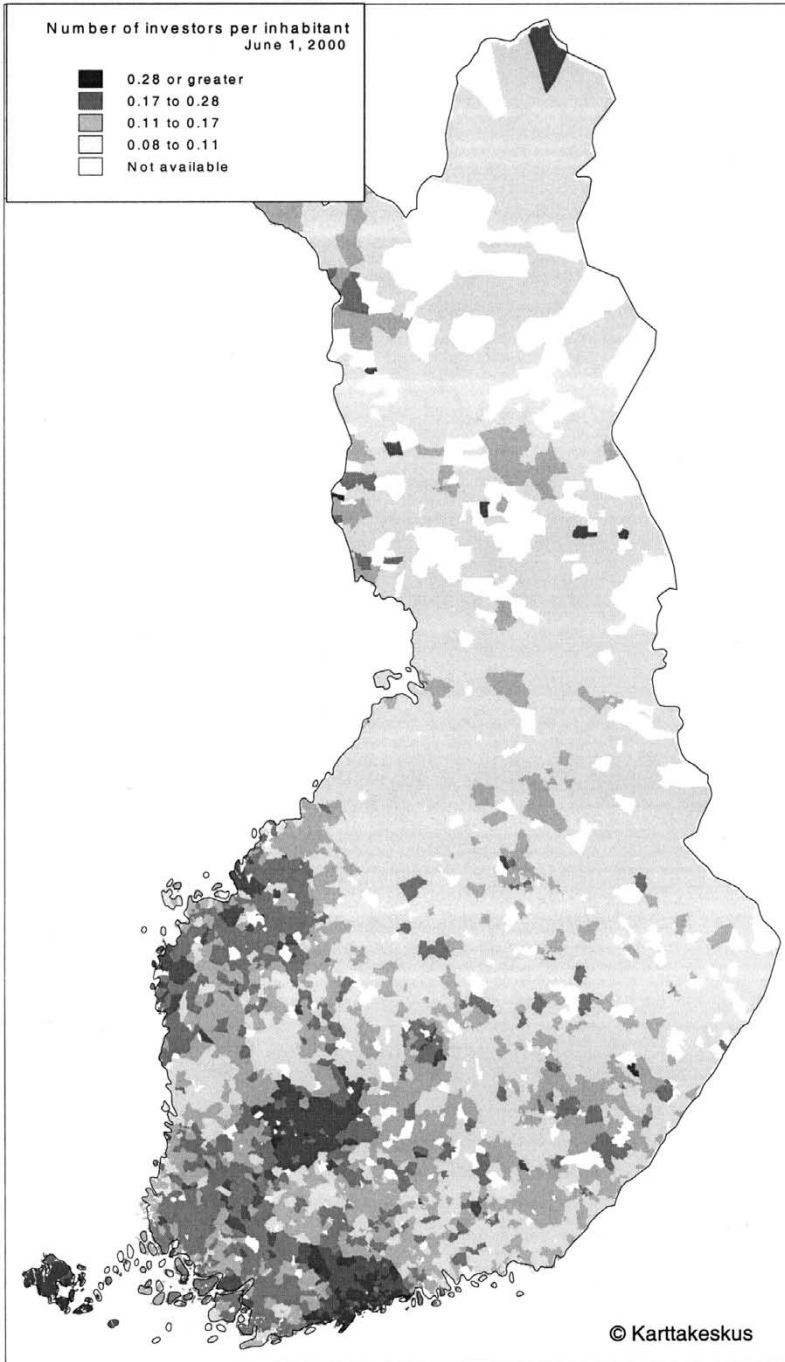
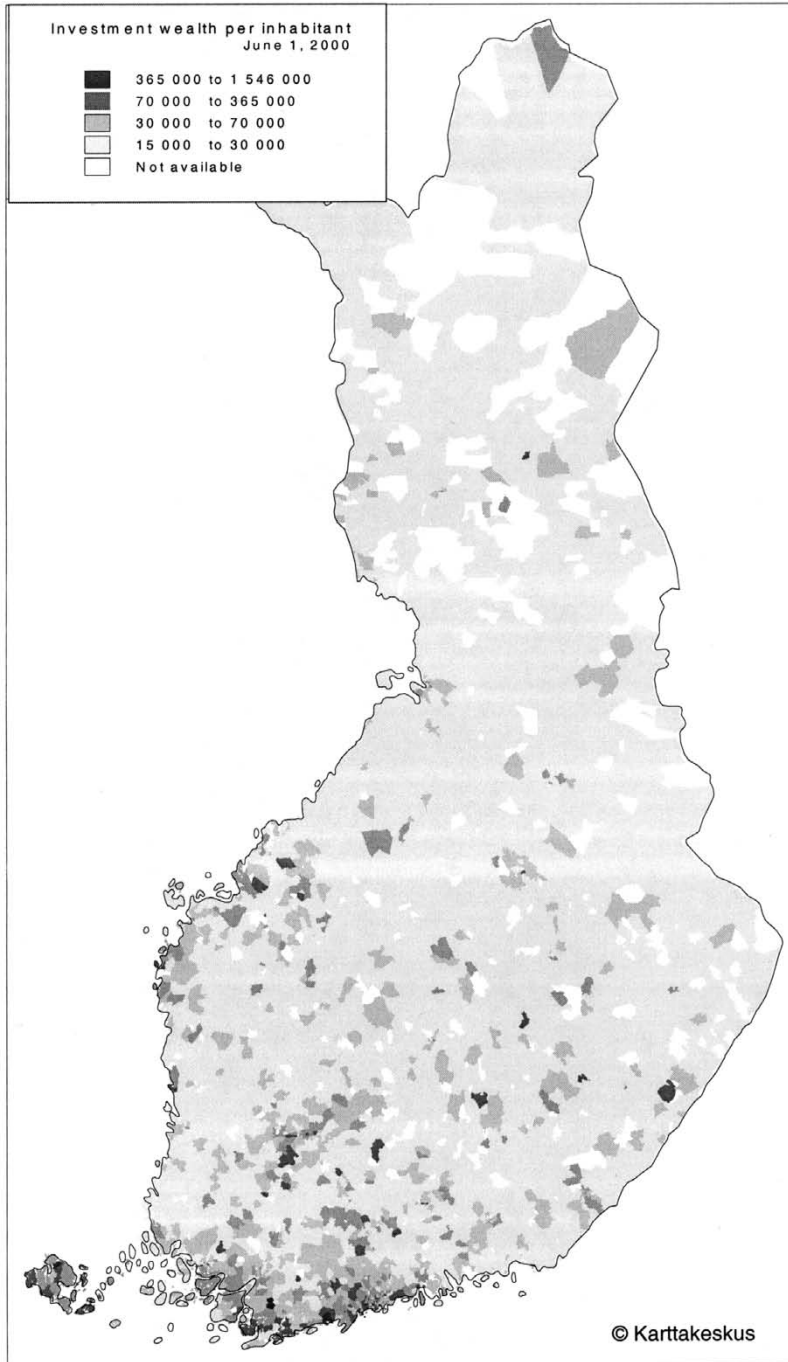


FIGURE 6. Number of investors per inhabitant by zip code.





**FIGURE 7.** Investment wealth per inhabitant by zip code.

TABLE 5. Changes in investment wealth by province.

All ownership figures are from January 1 except that "June 2000" refers to June 1, 2000.

	Proportion of individuals' total investment wealth										
	Including all stocks					Excluding Helsingin Puhelin, HPY Holding, and Tampereen Puhelin					
	1995	1996	1997	1998	1999	2000	June 2000	1998	1999	2000	June 2000
Uusimaa	50.9 %	51.5 %	50.6 %	50.4 %	51.9 %	59.2 %	59.8 %	50.0 %	51.7 %	56.6 %	57.7 %
of which in Greater Helsinki Area*	45.9 %	46.7 %	45.7 %	45.3 %	46.7 %	52.8 %	54.6 %	44.9 %	46.6 %	50.9 %	53.1 %
Itä-Uusimaa	2.2 %	2.2 %	2.5 %	2.9 %	3.2 %	2.1 %	2.1 %	3.0 %	3.2 %	2.1 %	2.1 %
Varsinais-Suomi	8.6 %	8.5 %	9.8 %	10.3 %	8.8 %	6.3 %	6.1 %	10.4 %	9.0 %	6.8 %	6.5 %
Satakunta	2.8 %	2.7 %	2.8 %	2.7 %	2.4 %	1.9 %	1.9 %	2.8 %	2.5 %	2.1 %	2.0 %
Kanta-Häme	1.7 %	1.6 %	1.6 %	1.6 %	1.5 %	1.4 %	1.4 %	1.6 %	1.6 %	1.5 %	1.5 %
Pirkanmaa	7.0 %	6.8 %	6.6 %	6.2 %	7.9 %	7.0 %	7.0 %	6.2 %	6.9 %	7.1 %	7.1 %
Päijät-Häme	2.4 %	2.4 %	2.5 %	2.6 %	2.2 %	1.8 %	1.8 %	2.6 %	2.2 %	1.9 %	1.9 %
Kymenlaakso	1.9 %	1.8 %	1.7 %	1.7 %	1.6 %	1.3 %	1.3 %	1.7 %	1.6 %	1.4 %	1.4 %
Etelä-Karjala	1.6 %	1.5 %	1.5 %	1.4 %	1.3 %	1.1 %	1.1 %	1.4 %	1.4 %	1.2 %	1.1 %
Etelä-Savo	1.4 %	1.3 %	1.2 %	1.2 %	1.2 %	1.1 %	1.1 %	1.2 %	1.3 %	1.2 %	1.1 %
Pohjois-Savo	2.0 %	2.4 %	2.4 %	2.4 %	2.2 %	1.7 %	1.7 %	2.4 %	2.3 %	1.8 %	1.8 %
Pohjois-Karjala	1.5 %	1.4 %	1.4 %	1.5 %	1.6 %	1.1 %	1.1 %	1.5 %	1.6 %	1.2 %	1.2 %
Keski-Suomi	2.2 %	2.1 %	2.0 %	1.9 %	1.9 %	2.0 %	1.8 %	1.9 %	1.9 %	2.2 %	1.9 %
Etelä-Pohjanmaa	2.0 %	2.1 %	2.1 %	2.2 %	1.9 %	1.5 %	1.5 %	2.2 %	1.9 %	1.6 %	1.6 %
Pohjanmaa	2.9 %	2.9 %	2.9 %	2.8 %	2.8 %	2.5 %	2.5 %	2.8 %	2.9 %	2.7 %	2.6 %
Keski-Pohjanmaa	0.9 %	0.8 %	0.7 %	0.6 %	0.5 %	0.4 %	0.4 %	0.6 %	0.5 %	0.5 %	0.4 %
Pohjois-Pohjanmaa	2.6 %	2.4 %	2.3 %	2.4 %	2.6 %	2.6 %	2.6 %	2.4 %	2.7 %	2.8 %	2.8 %
Kainuu	0.7 %	0.7 %	0.5 %	0.6 %	0.6 %	0.5 %	0.5 %	0.6 %	0.6 %	0.6 %	0.6 %
Lappi	1.5 %	1.4 %	1.3 %	1.3 %	1.1 %	1.1 %	1.1 %	1.3 %	1.2 %	1.1 %	1.1 %
Ahvenanmaa	1.3 %	1.8 %	1.8 %	1.8 %	1.7 %	1.9 %	1.8 %	1.8 %	1.7 %	2.1 %	1.9 %
Unknown	2.0 %	1.9 %	1.7 %	1.7 %	1.0 %	1.4 %	1.5 %	1.7 %	1.0 %	1.6 %	1.7 %
Totals	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %

**TABLE 6. Investment wealth by country of residence at June 1, 2000.**

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
	Institutional status			Total			
	Individuals	Institutions	unknown				
Sweden	1 926	17	3 251	5 194	26.8	4 377	22.5 %
United States	954	3	730	1 687	62.4	1 229	6.3 %
Germany	201	2	903	1 106	64.7	1 012	5.2 %
Great Britain	174	3	657	834	49.2	1 094	5.6 %
Norway	344		246	590	31.2	721	3.7 %
Belgium	34	5	421	460	45.9	456	2.3 %
France	167	1	289	457	18.7	2 151	11.0 %
Switzerland	91		316	407	76.3	1 652	8.5 %
Netherlands	221	2	178	401	36.9	292	1.5 %
Spain	59		261	320	39.3	2 248	11.5 %
Denmark	75		179	254	36.4	2 553	13.1 %
Luxemburg	98	1	86	185	37.5	53	0.3 %
Singapore	96		86	182	131.6	39	0.2 %
Italia	27		136	163	46.8	91	0.5 %
Austria	20		89	109	140.0	433	2.2 %
Canada	30		77	107	138.2	53	0.3 %
China	14		68	82	894.4	54	0.3 %
Japan	11		69	80	289.2	385	2.0 %
Estonia	18	1	60	79	51.0	79	0.4 %
Thailand	40		38	78	31.2	65.4	0.3 %
Poland	37		33	70	124.8	14	0.1 %
Malaysia	35		30	65	33.3	28.6	0.1 %
Australia	10		52	62	69.4	9	0.0 %
Hungary	5		41	46	31.2	43	0.2 %
Ireland	7		31	38	774.1	11	0.1 %
Other or unknown	613	1	518	1 132		340	1.7 %
Totals	5 307	36	8 845	14 188		19 484	100.0 %

**TABLE 7. Investment wealth by mother tongue at June 1, 2000.**

The number of inhabitants refers to their number at January 1, 2000.

Mother tongue	Number of investors	Number of investors / inhabitants	Investors'		Sum of investment wealth, mill. FIM	Proportion of individuals' total investment wealth
			mean investment wealth, 1000 FIM	Investment wealth per inhabitant, 1000 FIM		
Finnish	556 067	11.6 %	191.5	22.3	106 478	65.6 %
Swedish	46 004	15.7 %	602.1	94.7	27 697	17.1 %
Other	340		157.2		17	0.0 %
Unknown	130 432		215.0		28 041	17.3 %

for Swedish-speaking Finns (15.7%) than for Finnish-speaking Finns (11.6%). 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. The influence of headquarters location on shareownership

Recent research has documented that investors tend to prefer to invest in stocks that are headquartered close to the municipality where the investor lives.<sup>7</sup> This so called home bias or distance effect may arise, among other reasons, because investors are more familiar with these companies, because they have superior information of these companies, or because they have invested in these companies due to an employee or customer relationship.

Table 8 provides a simple analysis of the preference of investors to invest in companies that are headquartered in the same municipality or province the investor lives in. Following Grinblatt and Keloharju (2000c), we compute the following ratio to measure this preference:

$$\frac{\text{Firm } i\text{'s shareowner weight for investors in the municipality of its headquarters}}{\text{Firm } i\text{'s shareowner weight among all investors in Finland}}$$

The numerator is simply the number of individual shareowners of firm *i* residing in the municipality the firm is headquartered in, divided by the sum, across all firms, of the number of shareowners residing in that same municipality. The denominator is the comparable ratio for all of Finland. As an example, take the real estate investment company Technopolis, which has 1998 individual shareowners, 357 of whom live in its headquarters city of Oulu. Summing the number of individual shareowners over all firms, we find that Oulu has 28,088 individual shareowners, while Finland has 1,738,412 shareowners. The numerator for Technopolis' ratio is thus 357 / 28,088 while the denominator is 1998 / 1,738,412, making Technopolis' ratio 11.06.

The results suggest that individual investors living in the headquarters municipality (province) of a median company are 12.14 (6.82) times more likely to own the stock of that company than the stock of other companies, provided that the company is headquartered outside of the Greater Helsinki Area. For 60 of these 61 companies, an investor living in the headquarters municipality of the company is more likely to invest in that company than in other companies. The preference for institutions to invest in companies headquartered nearby is some-

<sup>7</sup> Huberman (1998) observes that Regional Bell Operating Companies are more likely to be held by investors who subscribe to their local telephone service. Coval and Moskowitz (1999) document that mutual funds prefer to invest in locally headquartered companies. Grinblatt and Keloharju (2000c) find that, controlling for language and cultural factors, distance figures importantly in the shareownership and trading patterns of both household and institutional investors.

TABLE 8. The influence of headquarters location on shareownership.

All ownership figures are from June 1, 2000.

		Summary statistics for the ratio <i>Numerator/Denominator</i> <i>Numerator</i> = Firm <i>i</i> 's weight among investors in its headquarters municipality or province <i>Denominator</i> = Firm <i>i</i> 's weight among all investors in Finland					
		Investor in same municipality as headquarters		Investor in same province as headquarters			
				Investor category			
		Households	Institutions	All investors	Households	Institutions	All investors
<i>Median for firms of the following type:</i>							
Helsinki area headquartered companies (N=110)		1.04	1.09	1.07	0.98	1.03	1.00
Rest of the Finland headquartered companies (N=61)		12.14	7.28	12.15	6.82	4.10	6.70
All companies (N=171)		1.28	1.23	1.28	1.12	1.13	1.15
<i>Fraction greater than 1 for firms of following type:</i>							
Helsinki area headquartered companies		0.55	0.60	0.54	0.47	0.55	0.50
Rest of the Finland headquartered companies		0.98	0.85	0.98	0.93	0.87	0.93
All companies		0.70	0.69	0.70	0.64	0.66	0.65

what smaller, although still very notable. However, Greater Helsinki Area headquartered companies display much less distance effect than other companies. This is probably largely due to the fact that these companies tend to be larger and more nationally known, attracting investors from all over Finland.

### 3.6. Concentration of individuals' investment wealth

Table 9 shows the degree of concentration in individuals' shareownership. In June 1, 2000, the richest 0.5% of individual *investors* owned 50.7% and the richest 1% 59.4% of the investment wealth of individuals. Similarly, the richest 0.5% of the entire Finnish *population* owned 71.6% and the richest 1% 79.1% of the investment wealth of individuals. It is useful to put these figures into perspective by comparing them to U.S. figures. For example, the 1998 Survey of Consumer Finances, reported in Poterba (2000), finds that the richest 0.5% of the U.S. households owned 41.4% and the richest 1% 53.2% of the share ownership wealth of individuals in the U.S. In other words, shareowner wealth appears to be much more concentrated in Finland than in the U.S. although, for instance, income is much more concentrated in the U.S. than in Finland. Figure 8 illustrates the concentration of ownership in Finland and in the U.S. by a Lorenz curve.

What accounts for this puzzling result? To begin with, the result is *not* due to the overall level of participation in the stock market through direct shareholdings. According to 1995 Survey of Consumer Finances, 27.4 million Americans – 10.4% of the population – held stocks directly in 1995, whereas the analogous figure in Finland in June 2000 was 14.2%.<sup>8</sup> In other words, direct equity ownership is relatively more common in Finland than in the U.S. (although indirect ownership e.g. through mutual funds is much less common in Finland).

The difference in the method of sampling is probably a much more important determinant of the result. The Finnish results are based on ownership by individual investors, whereas in the U.S. all the ownership concentration results are from the household level, i.e. individual investor data are pooled to a family level.<sup>9</sup> Since household level data pool wealth from several (at least one, and often two or more) individuals, ownership at the household level will generally display less variation than ownership at the individual level. This means that we should expect to find less concentration of ownership at the household level than at the individual level. Unfortunately we do not know how much the unit of analysis – household vs.

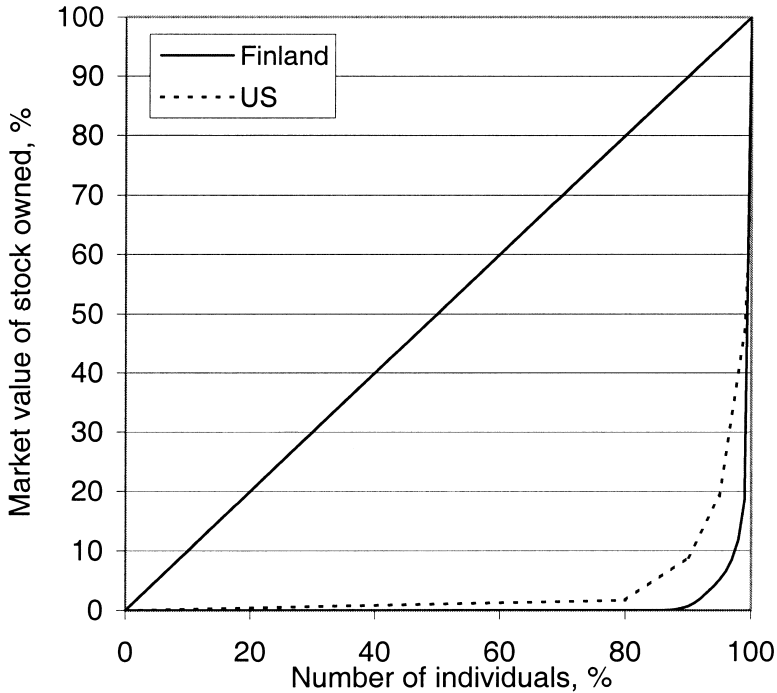
<sup>8</sup> New York Stock Exchange's Shareownership 1998. Between 1992 and 1995, the number of U.S. investors with direct shareholdings actually decreased from 29.2 to 27.4 million. If the trend has continued, the fraction of the population with direct shareholdings should be less today.

<sup>9</sup> We have no data on family relationships, which makes it impossible to aggregate our results to the household level to make them comparable to the U.S. figures.

**TABLE 9. Proportion of individuals' total investment wealth owned by the richest n% of individual investors and by the richest n% of population.**

All Finnish ownership figures are from January 1 except that "June 2000" refers to June 1, 2000. Gini coefficients are for investors only except that the two rightmost Gini coefficients are computed based on the entire population. The data on U.S. ownership are from 1998 Survey of Consumer Finances, reported in Poterba (2000).

Percentile	Cumulative proportion owned by the richest n% of investors							Cumulative proportion owned by the richest n% of individuals of the Finnish population, June 2000	Cumulative proportion owned by the richest n% of households of all U.S. households, 1998
	1995	1996	1997	1998	1999	2000	June 2000	June 2000	1998
0.1	19.1 %	21.3 %	22.3 %	24.8 %	25.1 %	30.5 %	32.6 %	52.1 %	N.A.
0.5	34.4 %	36.7 %	37.6 %	39.9 %	41.8 %	47.9 %	50.7 %	71.6 %	41.4 %
1	42.9 %	45.4 %	46.2 %	48.3 %	51.0 %	56.6 %	59.4 %	79.1 %	53.2 %
2	52.7 %	55.1 %	55.9 %	57.6 %	60.7 %	65.1 %	67.8 %	86.1 %	N.A.
3	52.7 %	61.3 %	62.1 %	63.5 %	66.6 %	70.0 %	72.4 %	89.7 %	N.A.
4	59.0 %	65.9 %	66.7 %	67.8 %	70.7 %	73.3 %	75.6 %	91.9 %	N.A.
5	63.7 %	69.6 %	70.3 %	71.2 %	73.8 %	75.9 %	77.9 %	93.5 %	80.9 %
6	67.4 %	72.6 %	73.2 %	73.9 %	76.4 %	78.0 %	79.8 %	94.6 %	N.A.
7	73.1 %	75.1 %	75.7 %	76.2 %	78.4 %	79.9 %	81.4 %	95.5 %	N.A.
8	75.3 %	77.2 %	77.8 %	78.2 %	80.2 %	81.4 %	82.8 %	96.3 %	N.A.
9	77.2 %	79.1 %	79.6 %	79.9 %	81.7 %	82.8 %	84.0 %	97.1 %	N.A.
10	78.9 %	80.7 %	81.2 %	81.4 %	83.0 %	83.9 %	85.0 %	97.9 %	91.2 %
20	89.1 %	90.3 %	90.7 %	90.5 %	90.8 %	90.5 %	91.1 %	100.0 %	98.4 %
30	93.8 %	94.6 %	94.9 %	94.7 %	94.4 %	93.5 %	94.0 %	100.0 %	N.A.
40	96.4 %	97.0 %	97.1 %	97.0 %	96.5 %	95.3 %	95.7 %	100.0 %	N.A.
50	98.0 %	98.3 %	98.4 %	98.3 %	97.8 %	96.9 %	97.1 %	100.0 %	N.A.
60	98.9 %	99.1 %	99.2 %	99.1 %	98.8 %	98.4 %	98.5 %	100.0 %	N.A.
70	99.5 %	99.6 %	99.6 %	99.6 %	99.4 %	99.3 %	99.3 %	100.0 %	N.A.
80	99.8 %	99.8 %	99.9 %	99.8 %	99.8 %	99.7 %	99.7 %	100.0 %	N.A.
90	99.95 %	99.96 %	99.97 %	99.95 %	99.95 %	99.95 %	99.95 %	100.0 %	N.A.
Gini coefficient	0.859	0.870	0.874	0.874	0.878	0.876	0.884	0.983	0.96
Ownership at percentile, 1000 FIM									
Percentile	1995	1996	1997	1998	1999	2000	June 2000		
0.1	4 446.0	4 160.9	6 229.3	7 903.5	10 014.1	19 465.7	21 406.4		
0.5	1 329.4	1 255.8	1 814.6	2 270.1	2 942.1	5 185.3	5 556.9		
1	778.7	722.4	1 061.2	1 294.6	1 611.1	2 630.6	2 769.3		
2	440.3	401.9	590.9	718.4	847.2	1 285.1	1 296.4		
3	313.3	285.1	415.7	501.5	567.9	840.0	820.5		
4	242.9	220.0	320.1	382.4	420.7	619.1	594.8		
5	197.7	177.2	258.4	306.5	330.2	491.5	466.2		
6	164.9	147.1	214.0	253.7	268.0	412.5	383.9		
7	139.9	125.0	181.3	215.2	224.1	361.8	325.2		
8	121.5	108.1	156.5	186.7	191.5	305.3	284.1		
9	106.3	94.1	136.6	162.9	166.4	263.2	245.9		
10	93.8	83.0	120.3	144.3	146.6	230.4	215.9		
20	37.9	32.7	47.0	58.5	58.8	85.6	84.7		
30	19.9	16.9	23.8	30.4	31.0	48.0	48.5		
40	11.6	9.6	13.5	17.3	18.8	33.2	31.5		
50	7.1	5.6	7.8	10.1	13.2	33.2	31.2		
60	4.2	3.3	4.6	6.2	9.9	25.7	25.4		
70	2.4	1.8	2.4	3.6	5.6	11.6	12.5		
80	1.3	1.0	1.3	1.9	3.0	7.1	7.5		
90	0.6	0.4	0.5	1.1	1.3	2.5	2.5		



**FIGURE 8.** Distribution of individuals' investment wealth. The Finnish shareownership data are from the individual investor level and from June 1, 2000. The U.S. ownership data are from the household level and from 1998 Survey of Consumer Finances.

individual – affects our results, but its effect should be very large to turn around the result that shareownership in Finland is more concentrated than shareownership in the U.S.

Table 9 also shows how the concentration of ownership has evolved over time. A useful summary measure of ownership concentration is the Gini coefficient, which is defined as two times the area between the straight line and the Lorenz curve. By definition, the Gini coefficient varies between 0 and 1, with larger numbers indicating larger degrees of concentration.<sup>10</sup>

Our results show that the shareownership concentration by Finnish individuals has increased almost monotonically during the sample period. The Gini coefficients, computed from ownership among investors, increased from 0.859 in 1995 to 0.884 in June 1, 2000. The Gini coefficients based on the entire population are naturally much larger. At the end of the sample

<sup>10</sup> Following Deltas (2000), the Gini coefficient is estimated as  $2\text{cov}(y, r_y)/(nE(y))$ , where  $n$  is the number of individuals sampled and  $\text{cov}(y, r_y)$  is the covariance between shareownership wealth,  $y$ , and the ranks of individuals according to their shareownership wealth,  $r_y$ , from the poorest ( $r_y = 1$ ) to the richest ( $r_y = n$ ). The U.S. Gini coefficient for 1998 is estimated assuming a piecewise linear Lorenz curve.



period, the Gini coefficient for Finnish individuals was 0.983, whereas the Gini coefficient for U.S. households in 1998 was approximately 0.96.

There are at least two potential reasons for the increase in ownership concentration in Finland. First, mutual funds have become much more popular than what they were at the beginning of the sample period. For example, on June 1, 2000 the total number of owners in equity-linked mutual funds investing mostly in Finland was 155,000, whereas the corresponding number was only 45,000 in January 1997.<sup>11</sup> Given the fixed costs involved with small direct shareholdings, it is understandable that particularly small investors have sold their direct shareholdings and become customers of mutual funds. Second, the recent success stories in many Finnish information technology companies have generated significant amounts of shareownership wealth. In many cases, and particularly in newly listed companies, this shareownership wealth has been concentrated in the portfolios of a relatively small number of shareowners.

### 3.7. Wealthy investors

Table 10 presents the number of investors with different portfolio sizes and how the number of wealthy investors has evolved over time. The table indicates that on June 1, 2000 there were 18,398 investors with at least one million FIM of shareownership wealth (henceforth, millionaires) and 4006 investors with at least 5 million FIM worth of shares (henceforth, 5-millionaires). Nokia is an important component in many millionaires' portfolios. Excluding ownership in Nokia would reduce the number of millionaires to about one-half, 9530. Excluding ownership in Sonera would reduce the number of millionaires only modestly, to 17,478.

Table 10 indicates that between January 1, 1995 and June 1, 2000, the number of millionaires increased by 450% and the number of 5-millionaires increased by 900%. Of course, the increase is largely due to the overall bull market during the same period. To assess how a change in the overall market level would change the number of millionaires, we computed the number of millionaires as of June 1, 2000 assuming that the general index would change by  $\pm 40\%$  or less and that all stocks would experience exactly the same relative price change. Regressing the logarithm of the change in the number of millionaires against the logarithm of the change in the index gives us a "millionaire elasticity" of 0.89. This means that a 1% increase in the general index level would be expected to increase the number of millionaires by 0.89%. Similarly, we estimate that a 1% increase in the general index level would be expected to increase the number of 5-millionaires by 1.05%. In other words, a stock price change of the

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<sup>11</sup> HEX Mutual Fund Report, January 1997 and May 2000. The number of investors statistics include some double accounting because an investor may invest in several funds.

**TABLE 10. Number of individual investors by size of portfolio.**

All ownership figures are from January 1 except that "June 2000" refers to June 1, 2000.

Portfolio value, mill. FIM	1995	1996	1997	1998	1999	2000	June 2000
0.1	45 175	41 419	55 449	70 813	78 487	133 759	132 628
0.2	23 511	21 393	30 538	39 316	44 781	83 039	79 553
0.3	14 955	13 635	20 406	26 740	31 553	60 305	56 610
0.4	10 652	9 707	14 932	19 908	24 272	46 105	43 115
0.5	8 123	7 486	11 571	15 739	19 763	36 538	35 087
1	3 349	3 105	4 978	6 990	9 534	18 383	18 398
2	1 362	1 269	2 035	2 959	4 426	9 495	9 818
3	826	750	1 197	1 772	2 725	6 345	6 705
4	554	505	842	1 231	1 942	4 696	5 017
5	398	369	636	920	1 438	3 743	4 006
10	142	152	244	373	564	1 710	1 864
20	51	54	91	161	242	697	784
30	24	35	56	102	150	401	480
40	10	16	36	69	89	279	316
50	9	10	28	48	60	209	239
100	2	1	7	18	23	84	90

same magnitude is expected to change the number of wealthy investors relatively more than the number of less wealthy investors. An investigation of the relative changes in the number of investors at different wealth levels confirms that this result seems to hold also more generally.

### 3.8. Portfolio diversification

Table 11 describes the diversification of stock portfolios. Most individual investors hold poorly diversified portfolios: 56.2% of individual investors have only one stock in their portfolio and 18.2% hold two stocks. This result is not driven by the more than 250,000 shareholders of HPY Holding: if we exclude HPY Holding from the analysis, the proportion of single-stock portfolios decreases only to 54.3%. Also institutions hold poorly diversified portfolios: 55.7% of them hold only one stock and 17.7% two stocks. The average number of stocks held is 2.4 for individuals and 2.9 for institutions. Household portfolios have thus become somewhat more diversified after 1997 when the average investor's portfolio had only 2.0 stocks. A likely explanation for this pattern is that during the recent years many small shareholders have sold their direct shareholdings, perhaps to improve diversification by investing the proceeds in mutual funds.

Because of, among others, the fixed costs in each securities transaction, large portfolios tend to be better diversified than small portfolios. On average, household investors with at least one million FIM worth of shares hold 9.3 stocks. However, even many relatively large investors hold ill-diversified portfolios. For example, 5.5% of the millionaires hold only one

TABLE 11. Patterns in portfolio diversification at June 1, 2000.

<i>Panel A. Distribution of the number of stocks in portfolio</i>						
Number of stocks in portfolio	Portfolio value, 1000 FIM				Proportion of investors	
	Individuals		Institutions		Individuals	Institutions
	Mean	Median	Mean	Median		
1	42.6	17.8	490.4	31.2	56.2 %	55.7 %
2	107.3	35.7	3 947.4	86.5	18.2 %	17.7 %
3	208.9	57.0	2 869.3	152.0	8.7 %	7.5 %
4	288.7	87.2	15 167.8	219.6	5.1 %	4.4 %
5	473.5	126.0	6 415.4	281.2	3.3 %	3.0 %
6	606.6	168.9	10 005.9	404.8	2.2 %	2.2 %
7	1 196.7	226.7	7 493.5	506.7	1.6 %	1.6 %
8	996.1	283.5	5 778.1	643.6	1.1 %	1.3 %
9	1 310.2	344.1	9 858.6	779.4	0.8 %	1.1 %
10	2 049.6	419.4	18 407.1	926.1	0.6 %	0.8 %
>10	3 053.6	754.8	14 296.4	3616.4	2.1 %	4.8 %

<i>Panel B. Portfolio diversification by institutional status, line of business, or profession</i>		
Investor type	Median investors' investment wealth, 1000 FIM	Mean number of stocks in portfolio
<i>Categorization by institutional status:</i>		
Institutions	62.4	2.93
Males	31.2	2.64
Females	31.2	2.00
Individuals total	31.2	2.35
Privately registered foreign ownership	31.2	2.28
Institutional status unknown	40.8	2.41
Registered ownership total	31.2	2.37
<i>Categorization by line of business or profession:</i>		
Non-financial corporations	62.4	2.74
Deposit money and other credit corporations	1 086.7	5.59
Insurance corporations	583.8	18.10
Fin. auxiliaries and other fin. intermediaries	125.4	7.15
Financial and insurance institutions total	846.3	8.46
General government	126.4	3.27
Employment pension schemes	72 771.9	31.78
Other social security funds	553.5	4.70
General government total	210.0	7.34
Non-profit institutions	31.2	2.90
Employers and own-account workers	17.5	2.57
Employees	31.2	2.38
Other households	26.3	2.06
Households total	31.2	2.34
Rest of the world	40.8	2.28
Unknown	49.6	3.42

stock, and 6.8% hold two stocks. About two-thirds of the one-stock millionaires have all their shareownership wealth in Nokia.

### 3.9. Ownership structure and firm characteristics

Table 12 takes a brief look into how the ownership structure of publicly quoted share classes is related to their exchange listing, industry, and market capitalization. To analyze the general tendencies behind investment in different share classes, the table gives each share class an equal weight. This obviously significantly downplays the role of large companies like Nokia, which constitute the bulk of the market capitalization. Appendix 1 shows a detailed list of ownership structure variables by share class. All reported differences in investor preferences in Table 12 are significant at least at the 5% level.

**TABLE 12. The relationship between a stock's ownership structure and its industry, exchange listing, and market capitalization at June 1, 2000.**

	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	Foreign investors			
<i>Stock exchange listing</i>						
Main list	48.4 %	30.7 %	20.3 %	67.0 %	50.8	123
Banks & Finance	50.6 %	40.6 %	8.8 %	59.9 %	48.7	6
Insurance	55.1 %	12.6 %	31.9 %	64.9 %	54.6	3
Investment	74.3 %	20.7 %	4.6 %	69.2 %	50.2	8
Transport	55.8 %	24.4 %	19.7 %	62.9 %	52.0	6
Trade	60.4 %	15.1 %	24.4 %	55.2 %	54.3	8
Other Services	39.7 %	23.0 %	36.2 %	73.7 %	48.6	6
Metal & Engineering	51.1 %	29.8 %	19.1 %	68.6 %	51.7	15
Forest Industry	42.0 %	19.7 %	37.9 %	68.6 %	53.1	6
Multi-business	34.6 %	44.0 %	21.3 %	69.0 %	49.8	6
Energy	94.4 %	3.7 %	1.9 %	68.5 %	54.1	3
Food Industry	43.2 %	37.4 %	18.9 %	73.9 %	51.5	11
Construction	36.8 %	57.8 %	5.3 %	73.2 %	50.5	3
Telecommunications & Electronics	34.7 %	39.3 %	23.6 %	67.2 %	47.4	22
Chemicals	56.0 %	30.3 %	13.7 %	62.6 %	52.3	4
Media & Publishing	46.3 %	36.0 %	17.3 %	64.9 %	51.7	7
Other Industries	47.0 %	28.9 %	24.1 %	66.8 %	51.2	9
I-list	48.9 %	46.1 %	4.1 %	72.5 %	48.3	37
NM-list	20.7 %	66.4 %	11.9 %	76.3 %	41.0	13
<i>Market capitalization quintile</i>						
1 (Largest)	45.7 %	23.8 %	30.1 %	64.0 %	50.8	34
2	56.4 %	24.9 %	17.6 %	64.3 %	52.2	35
3	40.2 %	39.2 %	20.3 %	70.1 %	47.9	35
4	46.1 %	43.3 %	9.7 %	74.0 %	47.9	35
5 (Smallest)	43.5 %	52.3 %	3.4 %	72.1 %	48.7	34

Like in Japan, foreign investors prefer stocks listed on the main list and those with large market capitalization (see Kang and Stulz (1997)). These are generally also the most liquid stocks. Contrary to domestic institutions, foreign investors are relatively more invested in NM-list companies than in I-list companies. Again, the difference in foreign investors' preference may be explained by the greater liquidity of NM-listed companies. Individual investors tend to invest more in small stocks and those listed on the I-list and NM-list. Similar results have been documented in the U.S. by Sias and Starks (1997).

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 on the NM-list or I-list. These differences in investment allocation are probably at least partly driven by differences in risk tolerance: Jianakoplos and Bernasek (1998) find that single women are relatively more risk averse in their asset holdings than single men or married couples. However, the results probably also reflect the fact that the bulk of the initial owners in many newly listed technology companies are males, and that males tend to be relatively more active in initial public offerings, another very risky class of stocks. Particularly in the NM-listed companies, which all have been listed after June 1999, the June 1, 2000 ownership gender structure largely resembles the gender structure immediately after the listing.

Age also influences investment allocation. The average age for the owners of NM-list companies is almost ten years less than that for the main list companies, and more than seven years less than for the I-list companies. This probably reflects the fact that both the initial owners and the IPO investors in NM-list companies tend to be younger than investors at large.

#### 4. CONCLUSIONS

This study documents patterns in the ownership of Finnish shares on June 1, 2000 and changes in these patterns in since the beginning of 1995. 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 Finnish companies have joined the register, and it covers more than 99.99% of the total market capitalization of Finnish stocks.

Our main findings are as follows:

- Foreign investors are by far the largest investor category with a 69.9% share of the market capitalization. Foreigners' predominant role is largely due to their almost 90%

ownership stake in Nokia which accounts for about two-thirds of the market capitalization on the Helsinki Stock Exchange; without Nokia, foreigners would have a 32% ownership stake in Finnish stocks. After foreigners, the largest shareholders in terms of their fraction of total market capitalization are general government (10.1%), households (7.2%), non-financial corporations (4.8%), financial and insurance institutions (2.8%), and non-profit institutions (2.2%).

- The role of foreign ownership has steadily increased over time. Households and, to less extent, non-profit institutions have experienced a surge in ownership fraction after January 1999, whereas the ownership fractions of non-financial corporations, finance and insurance institutions, and the general government have decreased.
- 15.7% of Finnish males and 12.7% 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 31,200 FIM whereas the mean is more than seven times as large as that, 223,800 FIM.
- Investment wealth tends to be concentrated to the more senior citizens. Male investors are on average ten years and female investors nine years older than the population average. Investors with at least one million FIM worth of investment wealth are on average about ten years older than investors at large.
- There are substantial differences in investment wealth per inhabitant 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 112,900 FIM and in Uusimaa 75,100 FIM (in Greater Helsinki Area 93,600 FIM) whereas the national average is 31,400 FIM. Similarly, in Ahvenanmaa 33.5% and in the Greater Helsinki Area 29.8% of inhabitants own shares directly. The national average is 14.3%.
- The Greater Helsinki Area accounts for the majority, 54.6%, of shareownership wealth. Pirkanmaa and Varsinais-Suomi represent the second- and third-most important concentrations of shareownership wealth with 7.0% and 6.1% of aggregate shareownership wealth, respectively.
- The Greater Helsinki Area has tended to increase its share of shareownership wealth over time. Somewhat surprisingly, Pohjois-Pohjanmaa – which includes the Oulu region that performed economically very well in the late 1990s – does not seem to show any clear trend in shareownership wealth fraction.
- 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., Ger-

many, 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, 191,500 FIM, is less than one-third of the investment wealth of Swedish-speaking Finns owning stocks, 602,100 FIM. The ratio of investor-inhabitants to all inhabitants is also greater for Swedish-speaking Finns (15.7%) than for Finnish-speaking Finns (11.6%).
- Individual investors living in the headquarters municipality of a median company are 12 times more likely to own the stock of that company than the stock of other companies, provided that the company is headquartered outside of the Greater Helsinki Area. The preference for institutions to invest in companies headquartered nearby is somewhat smaller, although still very notable. Greater Helsinki Area headquartered companies display much less of this distance effect than other companies.
- There are 18,398 investors with at least one million FIM of shareownership wealth and 4006 investors with at least 5 million FIM worth of shares. Excluding ownership in Nokia would reduce the number of millionaires to about one-half, 9530. Excluding ownership in Sonera would reduce the number of millionaires by 5% to 17,478. A 1% increase in the general index level would be expected to increase the number of millionaires by 0.89% and the number of 5-millionaires by 1.05%.
- The richest 0.1% of individual investors owns 32.6% and the richest 1% 59.4% of the total investment wealth of individuals. Individuals' ownership has become more concentrated over time. Although it is not possible to unambiguously compare the concentration of shareownership in Finland to that in the U.S., concentration of shareownership in Finland appears to be large compared with that in the U.S.
- Most investors hold poorly diversified portfolios: only 11.7% of individuals and 14.6% of institutions hold at least five stocks in their portfolio. The average number of stocks held is 2.4 for individuals and 2.9 for institutions. Even many relatively large investors hold ill-diversified portfolios. For example, 5.5% of the millionaires hold only one stock, and 6.8% hold two stocks.
- Foreign investors prefer stocks which have large market capitalization and those listed on the main list. Individual investors prefer stocks with low market capitalization, and those listed in the I-list and NM-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 IPO stocks, small stocks and those listed in the NM- and I-list. The more senior citizens prefer stocks with large market values and younger investors IPOs and smaller companies. ■

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## APPENDIX 1. Descriptive statistics of the ownership of shares listed on the Helsinki Stock Exchange at June 1, 2000.

For the definition of distance ratio, see Table 8.

Share class	Market value, mill. FIM	Number of privately registered investors	Proportion of shares owned by				Proportion of individual investors who are		Mean age	Distance ratio (municipalities)	
			Domestic Institutions		Foreign investors		Males	Finnish speaking		Households	Institutions
			Individuals	Investors	Individuals	Investors					
<i>Main list</i>											
<i>Banks &amp; Finance</i>											
Ålandsbanken A	493	6301	56.0 %	41.3 %	2.4 %	52.5 %	8.3 %	49.2	44.11	29.36	
Ålandsbanken B	415	8102	31.8 %	63.6 %	4.6 %	53.8 %	16.6 %	49.1	37.33	20.12	
Conventum	3977	1426	60.5 %	37.8 %	1.6 %	70.9 %	76.5 %	47.1	0.67	1.01	
Mandatum Pankki B	1096	2756	51.4 %	48.0 %	0.6 %	74.4 %	74.3 %	47.8	1.06	0.95	
Nordic Baltic Holding	24507	225898	29.0 %	38.1 %	34.3 %	50.0 %	75.3 %	49.1			
OKO A	2212	24713	75.1 %	14.9 %	9.1 %	58.0 %	77.6 %	50.1	0.49	0.59	
<i>Insurance</i>											
Pohjola A	3870	4286	83.6 %	13.0 %	3.4 %	57.0 %	77.3 %	56.3	1.33	1.22	
Pohjola B	11709	10751	38.3 %	17.5 %	44.1 %	65.0 %	74.2 %	52.2	1.05	0.97	
Sampo A	15797	34510	43.5 %	7.2 %	48.3 %	72.6 %	73.8 %	55.2	1.75	1.87	
<i>Investment</i>											
Castrum	352	399	96.2 %	3.8 %	0.0 %	74.7 %	74.7 %	48.6	0.78	1.18	
Citycon	717	843	91.5 %	3.3 %	5.1 %	74.7 %	76.7 %	48.1	1.07	1.11	
Interavanti	87	921	61.4 %	36.4 %	0.9 %	63.8 %	76.4 %	50.3	1.17	1.03	
J Tallberg-Kiint. B	95	473	84.9 %	14.0 %	0.0 %	66.2 %	62.2 %	50.5	1.52	1.20	
Norvestia	403	5127	27.0 %	65.9 %	6.9 %	54.6 %	70.5 %	54.0	0.91	0.90	
Polar Kiinteistö	300	5174	84.0 %	10.8 %	5.1 %	71.7 %	77.9 %	47.7	1.07	1.35	
Sponda	1781	6821	80.5 %	7.2 %	12.3 %	71.7 %	74.9 %	53.3	0.83	1.17	
Technopolis	186	2238	68.8 %	23.9 %	6.7 %	76.3 %	81.0 %	48.9	11.06	23.54	
<i>Transport</i>											
Birka Line A	429	2094	54.7 %	38.4 %	6.7 %	51.3 %	2.1 %	57.0	50.87	42.10	
Birka Line B	467	2208	64.7 %	32.4 %	2.9 %	55.6 %	4.1 %	54.3	50.86	34.84	
Finnair	2015	8377	75.2 %	6.0 %	18.7 %	68.7 %	75.3 %	48.0	1.19	1.12	
Finnlines	2376	3372	75.6 %	11.9 %	12.5 %	71.9 %	59.0 %	51.4	1.30	1.40	
Sijla	621	4960	18.8 %	9.5 %	71.7 %	72.0 %	55.0 %	49.7	0.89	0.95	
Viking Line	1676	2046	46.0 %	48.1 %	5.8 %	58.1 %	11.9 %	51.8	43.49	35.78	

Share class	Market value, mill. FIM	Number of privately registered investors	Proportion of shares owned by		Proportion of individual investors who are		Proportion of privately registered investors who own less than one lot	Mean age	Distance ratio (municipalities)	
			Institutions		Males					Households
			Domestic	Foreign	Finnish speaking	Insti-tutions				
<i>Trade</i>										
Ford	546	316	2.5 %	1.4 %	96.0 %	66.2 %	72.0 %	50.6	1.34	1.30
Kesko A	3000	4963	74.1 %	25.5 %	0.1 %	59.0 %	74.9 %	59.7	0.36	0.22
Kesko B	3724	20897	44.1 %	27.5 %	28.3 %	54.1 %	73.3 %	51.3	0.77	0.74
Rautakirja A	1605	514	98.4 %	1.6 %	0.0 %	53.8 %	77.7 %	53.8	1.85	0.47
Rautakirja B	302	494	93.3 %	6.7 %	0.0 %	58.1 %	74.4 %	54.7	1.96	0.50
Stockmann A	2662	8955	75.5 %	20.1 %	4.3 %	46.1 %	65.6 %	56.3	1.92	1.33
Stockmann B	2507	11525	67.6 %	25.8 %	6.5 %	48.3 %	64.3 %	55.5	1.86	1.39
Tamro	1885	9908	27.9 %	11.9 %	60.1 %	56.0 %	72.3 %	52.7	0.69	0.79
<i>Other Services</i>										
Aidata Solution	1673	4158	21.7 %	33.8 %	44.5 %	76.2 %	76.0 %	45.5	0.92	0.62
A-Rakennusmies	337	487	88.2 %	9.6 %	2.2 %	76.1 %	66.2 %	51.5	0.76	1.44
Jaakko Pöyry	1463	895	17.9 %	7.4 %	74.7 %	73.3 %	68.7 %	50.9	0.90	0.39
Novo Group	1288	3548	43.8 %	38.3 %	17.7 %	75.1 %	77.7 %	46.0	1.21	0.96
Rak.Konevuokr. B	249	608	34.1 %	40.8 %	18.5 %	72.8 %	73.2 %	49.1	1.45	1.32
Tietoerator	20510	7502	32.5 %	7.9 %	59.5 %	68.8 %	73.4 %	48.7	1.42	0.90
<i>Metal &amp; Engineering</i>										
Componenta	215	1593	39.0 %	57.8 %	3.2 %	77.3 %	71.0 %	46.7	0.87	1.09
Fiskars A	2333	3201	49.5 %	29.7 %	20.7 %	66.2 %	60.6 %	51.4	1.30	1.32
Fiskars K	920	1270	55.2 %	30.7 %	14.1 %	66.8 %	57.0 %	52.8	1.46	1.40
KCI Konecranes	2836	1351	25.3 %	12.9 %	61.7 %	75.9 %	65.3 %	49.5	12.14	5.35
Kone B	6443	4442	54.1 %	11.5 %	34.4 %	61.1 %	69.0 %	51.8	1.19	1.41
Metso	11272	22889	47.9 %	5.7 %	46.4 %	62.7 %	68.5 %	56.4	0.97	1.05
Meira A	1632	10297	73.4 %	22.4 %	4.0 %	54.7 %	57.6 %	56.9	1.28	1.33
Meira B	4668	16762	55.2 %	28.2 %	16.5 %	57.1 %	59.5 %	54.7	1.20	1.25
Nordic Aluminium	299	669	79.9 %	16.6 %	3.5 %	76.9 %	70.7 %	50.0	7.12	2.14
Outokumpu	8515	9748	66.4 %	8.4 %	25.2 %	73.4 %	77.2 %	51.2	0.91	0.93
Partek	3689	11435	75.6 %	20.5 %	3.8 %	58.5 %	54.9 %	54.9	0.98	1.09
Ponsse 1	576	1069	3.3 %	90.1 %	6.6 %	80.5 %	79.6 %	48.4	194.10	0.00
Rocla	149	594	41.9 %	28.6 %	29.5 %	72.1 %	67.3 %	47.8	0.79	1.28
Rautaruukki K	4501	19977	71.0 %	15.3 %	13.7 %	70.0 %	73.1 %	52.6	0.62	0.91
Raute A	122	609	28.5 %	68.4 %	3.1 %	75.9 %	77.7 %	50.0	15.10	16.47

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			Domestic		Foreign		Males	Finnish speaking	Mean age	Households	Institutions	
			Institutions	Individuals	Individuals	investors						
<i>Forest Industry</i>												
Metsä-Seria A	1837	2554	94.4 %	5.2 %	0.3 %	64.4 %	68.9 %	68.9 %	0.72	1.33		
Metsä-Seria B	5097	34716	39.3 %	13.9 %	46.2 %	76.7 %	72.0 %	72.0 %	0.30	0.42		
Stora Enso A	12796	8039	50.8 %	2.1 %	47.1 %	64.6 %	75.1 %	75.1 %	0.97	1.07		
Stora Enso R	33083	18214	20.7 %	4.3 %	75.1 %	68.3 %	73.8 %	73.8 %	0.78	0.97		
Stromsdal B	15	1232	18.6 %	76.2 %	3.5 %	79.0 %	76.0 %	76.0 %	249.33	115.15		
UPM-Kymmene	41971	62713	28.2 %	16.3 %	55.4 %	58.5 %	70.7 %	70.7 %	0.94	0.94		
<i>Multi-business</i>												
Aspo	245	1398	40.1 %	54.6 %	5.2 %	70.6 %	72.1 %	72.1 %	1.15	1.21		
Finvest A	215	1327	31.6 %	19.3 %	48.9 %	67.8 %	76.0 %	76.0 %	0.80	0.60		
Finvest B	754	4175	30.2 %	31.7 %	38.0 %	73.8 %	73.7 %	73.7 %	0.87	0.84		
Hackman A	251	2408	21.8 %	53.8 %	24.2 %	64.6 %	69.8 %	69.8 %	1.12	1.08		
Kyro	2571	3027	23.2 %	69.1 %	7.6 %	73.1 %	69.3 %	69.3 %	1.28	0.80		
Lassila & Tikanoja	2097	1248	60.9 %	35.4 %	3.6 %	64.4 %	73.7 %	73.7 %	1.11	1.37		
<i>Energy</i>												
Espoon Sähkö	1591	494	98.0 %	0.6 %	1.3 %	72.9 %	68.8 %	68.8 %	4.04	2.13		
Fortum	18664	55288	88.7 %	6.9 %	4.4 %	71.1 %	76.1 %	76.1 %	0.69	0.77		
Länsivoima	1476	826	96.4 %	3.5 %	0.0 %	61.5 %	75.7 %	75.7 %	50.77	0.00		
<i>Food Industry</i>												
Atria A	197	6391	55.8 %	20.8 %	22.8 %	74.7 %	79.8 %	79.8 %	7.57	8.27		
Chips A	713	1057	59.8 %	26.3 %	14.0 %	62.4 %	2.9 %	2.9 %	39.83	41.10		
Chips B	871	2800	40.2 %	29.7 %	30.1 %	60.1 %	18.8 %	18.8 %	32.50	22.73		
Danisco	146	1944	53.9 %	45.8 %	0.0 %	92.9 %	69.4 %	69.4 %	50.5	50.5		
Hartwall A	5883	7208	23.0 %	41.5 %	35.5 %	72.1 %	72.6 %	72.6 %	1.05	0.97		
HK Ruokatalo A	220	5900	43.7 %	25.5 %	29.3 %	88.0 %	78.1 %	78.1 %	0.79	1.74		
Huhtamäki v. Leer	6326	15877	51.1 %	17.0 %	31.8 %	53.0 %	72.0 %	72.0 %	54.0	0.86		
Lännen Tehtaat	419	8469	59.2 %	39.0 %	0.6 %	83.2 %	75.8 %	75.8 %	43.88	44.56		
Oivi A	205	3442	49.2 %	46.1 %	4.4 %	70.9 %	77.4 %	77.4 %	22.09	16.26		
Raisio Yhtymä K	574	9842	19.6 %	78.0 %	0.3 %	79.4 %	73.4 %	73.4 %	56.5	5.76		
Raisio Yhtymä V	1799	37092	19.2 %	41.7 %	38.7 %	76.1 %	75.3 %	75.3 %	48.4	2.56		

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			Domestic		Foreign	Males	Finnish speaking	House-holds				Insti-tutions
			Institutions	Individuals	investors		speaking					
<i>Construction</i>												
Lemminkäinen	1164	1744	23.4 %	75.9 %	0.6 %	73.5 %	73.4 %	73.4 %	50.8	1.15	1.22	
Tuulikki A	122	1910	9.6 %	83.9 %	6.3 %	70.9 %	78.3 %	78.3 %	48.7	61.03	47.50	
YIT-Yhtymä	1957	3357	77.3 %	13.7 %	9.0 %	75.1 %	73.0 %	73.0 %	52.0	1.04	1.23	
<i>Telecommunications &amp; Electronics</i>												
Aspocomp Group	3799	1302	35.5 %	38.7 %	25.8 %	69.1 %	67.2 %	67.2 %	49.5	1.37	1.41	
Comptel	12100	28810	67.9 %	12.8 %	19.3 %	66.9 %	75.0 %	75.0 %	43.6	0.89	0.85	
Eirno A	1349	5299	23.7 %	43.3 %	33.0 %	73.2 %	76.8 %	76.8 %	45.8	8.42	4.89	
Elcoteq A	2927	7850	9.2 %	29.6 %	26.9 %	73.6 %	76.6 %	76.6 %	47.1	0.74	0.87	
F-Secure	9102	22459	7.0 %	82.6 %	10.2 %	68.1 %	77.0 %	77.0 %	40.2	1.44	1.39	
Helsingin Puhelin E	24475	84356	73.7 %	6.4 %	19.9 %	54.8 %	75.8 %	75.8 %	53.2	2.00	1.66	
HPY Holding	26019	257646	36.2 %	53.0 %	9.0 %	45.8 %	75.8 %	75.8 %	55.1	2.04	1.68	
Instrumentarium	3537	21355	52.4 %	38.4 %	9.2 %	55.3 %	73.8 %	73.8 %	53.5	1.19	1.11	
JOT Automation	6371	34931	31.8 %	31.5 %	36.7 %	73.2 %	76.6 %	76.6 %	44.7	6.44	3.95	
Keski-Suomen Puh A	5486	12285	40.9 %	43.5 %	6.7 %	51.9 %	81.5 %	81.5 %	52.9	39.56	36.11	
Nokia	1552937	73466	6.7 %	4.6 %	88.7 %	61.8 %	72.2 %	72.2 %	47.4	1.01	1.02	
PKC Group	646	4283	26.6 %	60.5 %	12.9 %	73.6 %	73.9 %	73.9 %	49.0	12.21	3.96	
PMJ automec	1209	6775	16.2 %	63.8 %	18.6 %	79.1 %	76.7 %	76.7 %	43.6	5.42	3.59	
Perlos	11848	9974	53.6 %	10.2 %	35.5 %	69.9 %	76.5 %	76.5 %	46.7	2.37	1.42	
Stonesoft	5635	7741	11.5 %	67.2 %	21.3 %	76.2 %	77.4 %	77.4 %	42.4	0.91	1.05	
Sonera	240052	87825	58.5 %	4.5 %	35.0 %	68.1 %	75.9 %	75.9 %	47.2	0.80	0.80	
Teleste	2645	3512	20.7 %	22.1 %	56.9 %	73.6 %	74.0 %	74.0 %	47.1	3.66	1.60	
T.J Group	1590	19201	19.3 %	50.8 %	29.8 %	75.3 %	76.6 %	76.6 %	43.0	0.92	0.88	
Tekla A	568	1272	77.2 %	22.8 %	0.0 %	78.4 %	77.7 %	77.7 %	41.1	2.60	1.81	
Tampereen Puhelin	1686	57071	45.5 %	49.3 %	3.3 %	54.7 %	81.2 %	81.2 %	55.2	10.92	10.44	
Vaisala A	1690	2592	33.1 %	53.5 %	13.3 %	67.1 %	75.6 %	75.6 %	49.2	1.14	1.16	
Wecon Electronics	481	3715	16.6 %	76.6 %	6.7 %	69.0 %	73.2 %	73.2 %	44.1	10.65	6.72	
<i>Chemicals</i>												
Kemira	4365	13299	74.8 %	7.5 %	17.7 %	73.2 %	74.1 %	74.1 %	53.4	0.65	1.15	
Orion-yhtymä A	4583	11826	46.3 %	51.6 %	2.0 %	54.3 %	76.2 %	76.2 %	51.9	1.34	1.27	
Orion-yhtymä B	4408	20365	39.1 %	50.3 %	10.4 %	54.8 %	75.0 %	75.0 %	51.7	1.25	0.99	
Uponor	4558	3175	63.6 %	11.8 %	24.6 %	68.1 %	67.3 %	67.3 %	52.3	1.04	0.90	

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			Domestic		Foreign investors	Males	Finnish speaking	Proportion of privately registered investors who own less than one lot		
			Institutions	Individuals						
<i>Media &amp; Publishing</i>										
Alma Media 1	1409	1890	60.9 %	14.2 %	24.6 %	59.5 %	79.5 %	54.0	0.79	1.30
Alma Media 2	1971	2751	46.9 %	10.5 %	42.4 %	61.5 %	77.4 %	55.4	0.97	1.39
Jantton	606	1551	85.7 %	12.7 %	1.7 %	77.2 %	77.0 %	44.3	1.11	1.21
Keskisuomalainen A	214	789	4.2 %	93.9 %	0.7 %	63.6 %	81.4 %	54.4	8.34	7.28
SanomaWSOY A	2375	1534	45.8 %	53.6 %	0.4 %	57.3 %	75.6 %	53.2	1.72	1.60
SanomaWSOY B	11271	5507	43.4 %	54.3 %	2.2 %	56.0 %	75.4 %	53.0	1.49	1.41
Talentum Oyj	930	3506	37.4 %	12.8 %	49.4 %	79.6 %	77.0 %	47.5	1.05	1.18
<i>Other Industries</i>										
Amer-yhtymä A	4180	11368	23.2 %	23.7 %	53.0 %	57.5 %	75.9 %	49.5	1.12	1.16
Exel	287	820	57.7 %	42.0 %	0.3 %	76.0 %	71.7 %	47.6	73.57	78.18
Leo Longlife A	85	860	31.3 %	67.6 %	1.0 %	72.6 %	74.7 %	49.6	0.80	0.87
Metsä Tissue	2533	1657	69.4 %	3.8 %	26.8 %	73.3 %	70.5 %	57.3	0.42	0.86
Nokian Renkaat	2076	2778	56.3 %	17.8 %	25.9 %	69.3 %	73.5 %	52.6	14.95	1.05
Rapala Normark	1161	921	2.8 %	1.2 %	96.0 %	76.4 %	69.9 %	45.4	16.51	21.78
Sanitec	3884	16640	75.8 %	13.4 %	10.8 %	58.4 %	58.5 %	55.4	1.17	1.23
Tamfelt K	438	868	48.3 %	49.9 %	1.7 %	56.5 %	58.1 %	51.6	3.18	3.20
Tamfelt E	713	1620	58.0 %	40.4 %	1.5 %	60.9 %	64.2 %	52.2	3.57	2.26
<i>I-List</i>										
A Company Finland	315	2350	84.9 %	13.5 %	0.8 %	80.3 %	76.3 %	42.6	0.67	0.75
Benefon S	286	4142	31.1 %	50.4 %	18.5 %	81.9 %	75.6 %	43.2	9.00	14.30
Elecster A	32	760	47.9 %	36.6 %	14.5 %	75.6 %	75.8 %	46.8	72.61	69.59
Efore A	170	1377	43.6 %	51.8 %	4.6 %	77.3 %	75.6 %	45.2	1.00	2.01
Honkarakenne B	135	1104	40.7 %	51.4 %	7.8 %	72.6 %	75.4 %	47.9	3.83	2.10
Ilkka-Yhtymä 1	126	3769	47.2 %	48.9 %	0.0 %	74.7 %	80.3 %	59.8	12.61	36.65
Ilkka-Yhtymä 2	241	3871	70.8 %	27.3 %	0.5 %	74.4 %	81.0 %	59.6	13.62	32.61
Incap	163	506	87.3 %	12.1 %	0.0 %	77.0 %	72.7 %	47.6	5.31	3.29
Isko A	139	43	99.0 %	0.3 %	0.0 %	72.2 %	75.0 %	39.5	25.87	0.00
Kasola A	18	377	50.0 %	45.3 %	4.5 %	79.8 %	76.1 %	50.3	1.03	0.65
Kekkilä	99	276	65.5 %	34.5 %	0.0 %	74.5 %	74.1 %	47.4	2.31	5.41
Kesla A	33	318	13.3 %	86.4 %	0.0 %	72.7 %	78.5 %	50.4	241.50	140.23

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			Domestic		Foreign investors	Males	Finnish speaking	Proportion of privately registered investors who own less than one lot			
			Institutions	Individuals							
Kauppakaari	331	32	99.8%	0.2%	0.0%	73.9%	78.3%	78.3%	41.6	1.83	1.90
Kontram	65	200	26.5%	72.9%	0.6%	80.9%	82.2%	82.2%	48.0	1.51	1.13
Larox B	66	639	29.7%	67.9%	2.0%	76.9%	76.7%	76.7%	46.9	19.92	16.53
Martela A	264	605	46.0%	43.3%	10.6%	65.7%	72.6%	72.6%	50.5	1.16	1.41
Marck. Viherjuuri	91	521	12.4%	86.6%	1.0%	73.5%	76.9%	76.9%	47.1	0.97	0.76
Marimekko	91	1756	68.3%	30.1%	1.6%	50.3%	79.2%	79.2%	48.9	0.87	0.88
Menire	517	2688	58.6%	25.0%	16.4%	75.3%	75.3%	75.3%	40.3	1.06	1.04
Neomarkka B	205	15963	57.7%	38.7%	0.1%	82.5%	74.7%	74.7%	51.0	0.07	0.10
Panostaja A	17	331	10.3%	87.6%	0.0%	68.9%	79.3%	79.3%	47.4	6.49	10.73
Panostaja B	9	2886	13.2%	83.8%	0.1%	66.6%	76.8%	76.8%	43.5	1.48	9.73
PI-Consulting A	80	27	99.4%	0.2%	0.0%	78.9%	73.7%	73.7%	40.2	2.13	7.93
Pohj-K.Kirjap. A	223	488	39.7%	58.7%	1.3%	63.7%	81.5%	81.5%	58.2	70.04	54.73
Piandent A	36	352	60.4%	36.0%	0.0%	57.2%	70.3%	70.3%	50.2	1.24	1.18
Saunatec	125	110	6.2%	93.6%	0.2%	70.2%	66.0%	66.0%	42.3	17.80	0.00
Suomen Helasto	46	425	52.5%	47.2%	0.1%	71.0%	79.8%	79.8%	48.5	11.92	12.28
Suomen Spar A	129	333	43.5%	21.3%	34.9%	65.8%	51.7%	51.7%	53.5	0.93	1.01
Suomen Spar K	129	233	15.7%	76.7%	6.5%	58.1%	35.8%	35.8%	59.8	0.92	1.27
SSK S.Sääst.Kiint.	21	345	79.2%	20.6%	0.0%	74.1%	77.5%	77.5%	47.8	15.37	25.00
Turun Arvokiint. A	7	335	78.2%	16.0%	4.4%	71.3%	78.4%	78.4%	49.2	11.10	8.60
Tervak. Puuhamaa	81	165	16.8%	83.2%	0.0%	67.9%	72.1%	72.1%	39.1	39.11	0.00
Tilamarkkinat-Yhtiö	145	61	98.3%	1.1%	0.0%	62.5%	82.5%	82.5%	47.6	6.79	0.00
Turkistuottajat C	118	1882	54.3%	22.9%	19.9%	87.0%	41.4%	41.4%	54.0	0.18	0.21
Vahto Group A	33	338	36.2%	62.9%	0.7%	76.6%	75.3%	75.3%	49.8	20.61	0.00
Vahto Group K	30	250	11.8%	86.5%	0.0%	73.4%	77.3%	77.3%	52.2	28.68	0.00
Yliselektroniikka	35	543	13.9%	84.1%	1.5%	77.3%	68.0%	68.0%	50.3	1.04	1.80
<i>NM List</i>											
Basware	458	36792	8.6%	90.2%	1.2%	65.1%	75.7%	75.7%	39.5	0.86	1.18
Biohit B	334	4242	29.6%	66.5%	2.1%	74.7%	77.9%	77.9%	45.0	0.99	0.82
EQ Online	1230	7417	51.0%	27.2%	21.8%	77.1%	80.8%	80.8%	37.0	1.13	1.10
Etteplan	183	1508	12.4%	85.2%	2.4%	75.3%	76.2%	76.2%	41.7	4.36	0.00
locore	244	1345	9.8%	37.4%	52.7%	76.9%	77.5%	77.5%	39.5	1.16	1.04
Linos	343	4305	11.7%	84.9%	3.4%	79.0%	77.0%	77.0%	41.9	3.26	1.88

Share class	Market value, milli. FIM	Number of privately registered investors	Proportion of shares owned by		Proportion of individual investors who are		Proportion of privately registered investors who own less than one lot	Mean age	Distance ratio (municipalities)
			Domestic Institutions	Foreign investors	Males	Finnish speaking			
Nedecor	186	1989	6.8 %	77.8 %	81.5 %	77.1 %	77.1 %	40.7	1.58
Proha	300	1967	6.8 %	86.3 %	80.2 %	78.4 %	78.4 %	39.6	1.17
Satama Interactive	1089	8090	68.9 %	10.4 %	71.8 %	75.1 %	75.1 %	41.1	0.96
Saunalahti	786	23829	36.0 %	44.4 %	72.1 %	77.6 %	77.6 %	40.6	0.72
Sysopen	533	2767	7.5 %	92.3 %	79.9 %	76.9 %	76.9 %	42.3	0.98
TH Tiedonhallinta	193	3298	11.1 %	87.3 %	80.8 %	79.4 %	79.4 %	41.5	2.09
Tieto-X	276	1886	8.5 %	73.2 %	77.6 %	74.9 %	74.9 %	42.8	0.79