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Institutional Effects on the Evolution of the Size Distribution of Firms*

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Abstract: In this paper it is argued that the size distribution of firms may largely be determined by institutional factors. This hypothesis is tested in an exploratory fashion by studying the evolution of the size distribution of firms over time in Sweden for a period spanning from the late 1960s to the early 1990s. The data used is divided into finer size classes compared to most previous studies. This gives more scope for investigating the impact of institutions. Moreover, we use a unique data set, starting in 1984, to take account of corporate groups and government ownership. The analysis shows a poor development for intermediate-sized (10–199 employees) firms. This is likely to reflect the existence of a threshold that many firms are either unwilling or unable to cross. The analysis of the institutions and rules of the game determining the entrepreneurial and business conditions in Sweden indicate that the conditions have been unfavorable for small firms, and hence that too few small firms have managed to grow out of the smallest size classes. The conclusion is supported by an international comparison of the number of firms in different size classes. Data indicate that Sweden has fewer small (10–99 employees), and more large (500+) firms per capita than other European countries.

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1. Introduction

In the 1950s and 1960s, large production units organized within the framework of vertically integrated large corporate groups were almost universally viewed as one of the most important elements in the overall model for economic and social development. With the turbulence that emerged after the oil and energy price shocks of 1973, however, there began to emerge evidence that bigger may not necessarily be better. A number of spectacular cases arose where larger enterprises ran into economic difficulties, and, simply in order to survive, were forced to shed employment. As the service sectors became dramatically more important, the advantages of large size appeared to decline significantly. The apparent advantages of large size seemed to disappear further as many manufacturing firms painfully downsized. Increasingly, large firms were viewed as inflexible, as slow to adapt to changing market conditions and increasingly quality-conscious consumers, as unconscionably firing workers, becoming less competitive in international markets, and shamelessly turning more and more to government for help in reversing their self-inflicted fortunes. Many researchers – e.g., Piore and Sabel (1984) and Scott (1988) – began to emphasize flexible specialization as a key factor for development at both the firm and regional level.

Loveman and Sengenberger (1991) compiled evidence in support of the view that the previous upward trend in the relative importance of large firms was reversed. They report similar recent trends toward small production units, using establishment rather than enterprise data. They conclude that there is "a clear picture of a recent general trend toward smaller units of production" in the six largest OECD countries. This new trend is first discernible in the U.S. around 1970 but the same pattern is shown to follow with little delay in the other large countries.

But as shown by Henrekson (1996) and Davis and Henrekson (1997a) it appears that in Sweden large firms and production units tended to increase in relative importance at least through the mid 1980s. They also report that large firms and establishments were more predominant in Sweden than in perhaps any other country. Thus, it is possible to find examples negating the "received wisdom", that large firms began to decline in relative importance throughout the industrialized world in the 1970s (allegedly for inexorable technological and structural reasons).¹ Furthermore, common trends notwithstanding, there are large national differences in the employment share of small and/or medium-sized firms. For instance, Loveman and Sengenberger report a small firm (< 100 employees) share in manufacturing around 1980 of 55.3 percent for Italy, but only 15.0 and 18.8 percent for Germany and the U.K., respectively. In the six countries studied there appear to be systematic differences between Italy and Japan on

¹See Carlsson (1996) for a good elaboration on these issues.

the one hand and Germany and the U.K. on the other, with the U.S. and France as intermediate, less clear-cut, cases.

Davis and Henrekson (1997b) hypothesize that cross-country differences in the size distribution of employment should primarily be explained by national differences in institutions and economic policies. Empirically they test their hypothesis by characterizing these aspects of the economic policy environment in Sweden prior to 1990 or thereabouts and compare them to the situation in other European countries and the United States. Their characterization and international comparisons show that Swedish policies strongly disfavored less capital-intensive firms and sectors, smaller firms, entry by new firms, and individual and family ownership of business. They also compile evidence that these policies affected outcomes. Taking the U.S. industrial distribution as a benchmark that reflects a comparatively neutral set of policies and institutions, Sweden's employment distribution in the mid-1980s was found to be sharply tilted away from industries with greater employment shares for smaller firms and establishments.

Davis and Henrekson chiefly support their claim that the size (and industrial) distribution of firms is largely determined by institutional factors by a detailed study of U.S.–Swedish differences at a single point in time. A further test of their hypothesis can be had by studying the evolution of the size distribution of firms over time. This is the route taken in this paper. More specifically, we investigate changes in the number and size distribution of firms in Sweden in the period 1968–93. Compared to studies for other countries this is an unusually long time period. A further advantage of our data set is that we can include more size classes compared to the Loveman-Sengenberger analysis. A finer disaggregation gives more scope for investigating the impact of institutions. Size distribution data for Swedish firms are also more comprehensive than the data for many other countries, notably, it is possible to take account of corporate groups and government ownership. The Swedish size distribution of firms is also compared to the size distribution in eleven other European countries. Finally, we argue that the evolution of the size distribution of firms in Sweden is consistent with the development and structure of important institutions and rules of the game likely to affect the distribution of firms, the rate of entry of new firms and the willingness to expand among incumbent firms.

The paper is organized as follows. In section 2 we report the number and the change in the number of Swedish enterprises between 1968 and 1993. Among other things we use a unique data set taking into account corporate groups and government ownership. Section 3 contains an international comparison and in the next section we survey recent research documenting a low willingness to grow among Swedish firms. In section 5 we analyse the most important institutions and rules of the game pertaining to business conditions and entrepreneurship in Sweden. Section 6 concludes.

2. Growth and the Size Distribution of Firms in Sweden

Universally accepted definitions of small, large and medium-sized firms are lacking in the literature. From time to time this fact causes some confusion. For instance, in the European Community firms with 0–9 employees are called micro firms, those with 10–99 and 100–499 are denoted small and medium-sized, respectively, and firms with 500 or more employees are considered to be large. However, in mid 1996 EC recommended its member countries to change the definition of large firms to firms with 250 employees or more. Loveman and Sengenberger (1991) draw the line between small and medium sized at 100 employees and define firms with at least 500 employees as large. Among small business researchers in Sweden the demarcation line between small and large has in most cases been drawn at 200 employees (e.g., NUTEK, 1994, Davidsson *et al.*, 1994, 1996). Thus, a great many firms considered large in Sweden would be dubbed medium-sized internationally. In our view, if one really wants to gain useful insights about the evolution of the size distribution of firms and its determinants, far too much information is lost when firms are classified into such broad categories. Suffice it here to say that the large majority of firms are in the 0–1 employees size class. When possible, one should therefore use a more detailed division of firms.

Since 1968 Statistics Sweden publishes data on the number of firms in the following size classes (number of employees excluding the owner): 0–1, 2–4, 5–9, 10–19, 20–49, 50–99, 100–199, 200–499 and 500+. The data are taken from the Central Register of Enterprises and Establishments (CFAR) compiled and published by Statistics Sweden. CFAR contains all production units – profit and non-profit as well as private and state-owned – having employees or a turnover exceeding a certain amount (originally SEK 10,000). A number of changes of the reporting criteria have been carried out since 1968, which affects the number of reported firms. The change in the number of firms in the smallest size class is highly uncertain due to these changes. The number of reported firms in the largest size class in the whole economy is greatly influenced by the fact that local and regional governments are included in the statistics, see Johansson (1997) for further details.

Below we will examine the evolution of the size distribution of firms both for the whole economy and for manufacturing taken separately.² Throughout we report the number of firms per million inhabitants in order to take account of population change.

²Previous studies covering a longer time period have generally used establishments as the observational unit, and in most cases they have covered manufacturing only, e.g., Braunerhjelm and Carlsson (1993) and Carlsson (1992). Particular interest has also been devoted to the importance of large firms in the Swedish economy, e.g., Jagrén (1993).

In order to avoid confusion with the numerous definitions of medium-sized firms, we have chosen to use the term *intermediate-sized* for the firms in the size classes highlighted in this study, i.e., size classes covering 10–199 employee firms.

Between 1968 and 1993 the number of firms in the smallest size class (0–1) increased considerably (*Table 1*). Due to the numerous changes in the reporting criteria, this reported increase should be interpreted with caution. The number of firms also increased in the 2–4 employee size class (by 22 per cent), in the 5–9 class (24 per cent), 10–19 class (14 per cent), 20–49 class (1 per cent), 200–499 class (8 per cent) and in the 500+ class (61 per cent), while it decreased in the 20–49 and 50–99 size classes (by 8 and 7 per cent, respectively). The increase in the largest size class is partially misleading because of the inclusion of local and regional governments in the statistics from 1979. If we instead calculate the change between 1979 and 1993 the increase dwindles to a mere 7 per cent. Thus, we may conclude that the development of the number of firms corrected for population is weak for the whole economy in the entire interval 20–199 employees compared to other size classes.

Table 1 The Number of Firms per Million Inhabitants in Different Size Classes, the Entire Swedish Economy 1968–93.

<i>Size Class</i>	<i>1968</i>	<i>1993</i>	<i>Change (%)</i>
0–1	15474	39885	158
2–4	6232	7598	22
5–9	2587	3196	24
10–19	1404	1599	14
20–49	909	916	1
50–99	307	283	–8
100–199	152	141	–7
200–499	88	95	8
500+	57 (86)	92	61 (7)

Note: From 1979 local and regional governments are included, which strongly influences the number of reported firms in the largest size class. The figures in brackets show the number and the change in the number of firms when 1979 is used as the base year.

Source: *Statistical Abstracts of Sweden* and own calculations.

Table 2 The Number of Firms per Million Inhabitants in Different Size Classes, Swedish Manufacturing 1968–93.

<i>Size Class</i>	<i>1968</i>	<i>1993</i>	<i>Change (%)</i>
0–1	945	2725	188
2–4	806	780	–3
5–9	547	479	–12
10–19	410	281	–31
20–49	318	222	–30
50–99	124	90	–27
100–199	72	49	–31
200–499	42	36	–15
500+	30	26	–14

Source: *Statistical Abstracts of Sweden* and own calculations.

In *Table 2* we report the change in the number of firms in manufacturing between 1968 and 1993. Here too, the number of firms in the smallest size class has soared (by 188 per cent). This strong increase is in all likelihood a chimera due to revised reporting routines. In all other size classes the number of firms decreased during the period under study. The decrease is particularly pronounced in the intermediate size classes (10–199), where the number of firms went down by approximately one third. In the other size classes (2–4, 5–9, 200–499, 500+) the decrease is substantially smaller. The reduction of the number of intermediate-sized firms is approximately double compared to the reduction in the other size classes.³

The interpretation of the data presented so far is rendered less clear-cut by two circumstances: government owned and nonprofit production units are included and account is taken of the fact that many of the firms treated as independent by Statistics Sweden in the published sources are part of a larger corporate group.⁴ First, private firms operate in most cases under widely different conditions than government controlled production units. Second, the observed changes in the number of private firms will also be misleading, if for example, a large firm splits up its operations into a number of (possibly tightly controlled) subsidiaries. We use a unique data set from Statistics Sweden, where a distinction has been drawn between private/government ownership and where it is possible to identify if a formally independent legal entity is part of a corporate group. Thus, those two problems can be avoided. See Johansson (1997) for further details.

³This shows that the size classes used by, for instance, Loveman and Sengenberger (1991) may be so broad that many economically interesting phenomena remain undetected.

⁴By corporate group we mean a more comprehensive entity where the capital links between the legal units are taken into account, meaning that all the controlled enterprises are considered together. The term enterprise group is often used synonymously in the literature (Eurostat, 1997).

In short, the data used have been adjusted as follows: (i) all governmentally owned and operated production units have been excluded; (ii) each parent company and its subsidiaries have been merged into a single observational unit (a corporate group); (iii) the corporate groups have been classified into the respective size class; (iv) each firm is classified into the industry in which the majority of its employees work. A distinction between private and government ownership can be made from 1972. During the 1970s Statistics Sweden began to compile a register of Swedish corporate groups. The register is comprehensive since 1984. Thus, we report group adjusted data for the whole private sector and manufacturing for the period 1984–93. *Table 3* shows that when firms are defined as corporate groups, the number of intermediate-sized firms in the private sector declines with the exception of the 10–19 size class.⁵ The tendency towards a reduced number of intermediate-sized firms is even more apparent in manufacturing. The decline is particularly salient among firms with 50–99 and 100–199 employees. However, it should be observed that the number of corporate groups also decreases in the largest size class. The reasons for this is unclear, but it is likely that mergers and acquisitions play a role in this development.

Table 3 The Number of Private Firms per Million Inhabitants in Different Size Classes in Sweden, Total Private Sector and Manufacturing 1984–93.

	<i>Total Private Sector</i>			<i>Manufacturing</i>		
	1984	1993	Change (%)	1984	1993	Change (%)
2–4	5705	7232	27	683	741	8
5–9	2574	2933	14	450	439	–2
10–19	1340	1360	1	321	246	–23
20–49	705	696	–1	219	171	–22
50–99	210	191	–9	78	58	–26
100–199	92	85	–8	39	26	–33
200–499	54	54	0	22	23	5
500+	39	35	–10	19	16	–16

Note: Firms with 0–1 employees are excluded.

Source: The Central Register of Enterprises and Establishments (CFAR) and own calculations.

The employment share of the intermediate-sized firms also decreased in the 1984–93 period – see *Table 4*. The employment share of the firms (groups) in the largest size class has also gone down, although considerably less than for the intermediate-sized groups. The change in the employment pattern for the entire private sector is similar.

⁵We have also calculated the change in the number of private firms (without adjusting for corporate groups) between 1972 and 1993. The results are similar and are therefore not reported.

The employment share decreased in all size classes with 10 employees or more, and the decrease was larger for groups with 50–99 and 100–199 employees.

Table 4 The Size Distribution of Employment in the Total Private Sector and Manufacturing in Sweden, Adjusted for Groups 1984–93 (%).

<i>Total Private Sector</i>										
Size Class	0–1	2–4	5–9	10–19	20–49	50–99	100–199	200–499	500+	Sum
1984	2.0	6.6	7.1	7.7	8.9	6.1	5.3	7.1	49.1	100
1993	2.7	8.1	7.9	7.6	8.6	5.5	4.9	6.8	47.8	100
Change (%)	35.0	22.7	11.3	–1.3	–3.4	–9.8	–7.5	–4.2	–2.6	
<i>Manufacturing</i>										
Size Class	0–1	2–4	5–9	10–19	20–49	50–99	100–199	200–499	500+	Sum
1984	0.4	2.0	3.1	4.5	6.8	5.5	5.4	6.9	65.5	100
1993	0.5	2.6	3.6	4.2	6.4	5.1	4.6	9.1	63.8	100
Change (%)	25.0	30.0	16.1	–6.7	–5.9	–7.3	–14.8	31.9	–2.6	

Source: The Central Register of Enterprises and Establishments (CFAR) and own calculations.

When governmentally owned production units are excluded and adjustments for corporate groups are made, the previously observed pattern is reconfirmed. Irrespective of whether we examine the total population of firms, private firms or corporate groups in manufacturing we observe: (i) the number of intermediate-sized firms have declined more rapidly than the number of firms in the other size classes; (ii) the share of the number of firms that are intermediate-sized has declined; (iii) the employment share of intermediate-sized firms has diminished. The pattern for the whole private sector is similar. The only difference is that this pattern only applies in full to the 20–199 size class.

In the literature we have only managed to find one paper examining the evolution of the number of firms across several countries. Schwalbach (1994) examines the change in the number of firms in the manufacturing sector in France, Germany, the United Kingdom and Denmark. The firms were classified into the three size classes 20–99, 100–499 and 500+ employees, and the development during the period 1979–86 was analysed. The highest rate of growth of the number of firms was found in the smallest size class, while the number of large firms grew at the lowest rate. If we instead calculate the percentage change in the number of Swedish manufacturing firms for the same time period and size classes, the pattern is reversed – the number of large firms grew most rapidly, while the number of firms in the 20–99 size class actually declined. Thus, the evolution of the number of firms in Sweden appears to diverge from the findings by Schwalbach for these four comparable countries, and the impression of a weak development among intermediate-sized firms in Sweden is further strengthened.

3. Sweden Compared to Other European Countries

In order to test comprehensively our hypothesis that the evolution of the size distribution of firms is largely determined by institutional factors, we should ideally look at the evolution of the size distribution and the institutional framework in a number of countries. However, such an approach raises formidable data problems that seem insurmountable at this point. Moreover, much care would be required in spelling out the characteristics and implications of country-specific institutions, a cumbersome task way beyond the scope of this paper.

Lack of data makes a detailed international comparison of the size distribution of firms difficult and limited in scope. The statistical material presented in *Enterprises in Europe, I-IV* (Eurostat 1990, 1992 1995, 1997) render possible a preliminary comparison across European countries. The surveys include all firms, except firms active in the primary sector and firms active in non-market services and public administration. Firms with a turnover below a certain threshold are excluded as well.⁶ The first report covered 12 countries, and in the fourth report the number of countries had been extended to a total of 16.

In the first, second and third report, firms were classified as micro-sized (0–9 employees) firms, small-sized (10–99 employees) firms, medium-sized (100–499) firms and large-sized (500+ employees) firms. The fourth report uses another definition of size classes: very small (1–9 employees) firms, small (10–49 employees) firms, medium-sized (50–249 employees) firms and large (250+ employees) firms.

Several severe statistical difficulties that have a large impact on comparability are mentioned in the reports. For instance, some countries do not report enterprises, but establishment or some other unit. The coverage of sectors and size classes are not complete either. Data are especially uncertain in the first report (covering 1983 and 1986), the first source of information ever with the ambition of providing harmonised data on the number of enterprises in different size classes in different countries. However, the registers were not fully harmonised or completed, a task still not fully accomplished. For example Belgium, Denmark, Italy, Spain and Luxembourg have changed their sources of information since the publication of the first report. Therefore, we start our analysis with the second report (covering 1988 and 1989). We have also excluded Greece, Ireland, the Netherlands, Austria, Iceland, Liechtenstein and Switzerland from the analysis. Greece, Ireland and Austria do not use enterprises as their reporting units and have deficient coverage in years and/or sectors. In the Netherlands, yet another reporting unit is used and the data are incomplete in sectors of

⁶The threshold differs between countries.

activities and size classes.⁷ Iceland and Switzerland both use enterprises as the reporting unit, but the data for Iceland do not cover medium and large-sized enterprises. For Switzerland data are only reported for 1991. Generally, data for the industrial sector (defined as NACE 1–4, i.e., extraction, manufacturing and energy) are far more reliable than data for all sectors.⁸ At this stage we judge that the size distribution data for the whole economy suffer from such severe comparability problems that an intercountry comparison would probably be misleading. For this reason, we focus on the industrial sector.

The Swedish data in the reports are provided by Statistics Sweden and based on the Enterprises Financial Accounts survey (EFA). EFA contains detailed financial information such as turnover and value added, but it does not cover the whole population of firms. For example, enterprises active in the financial sector and sole proprietorships are excluded. The Swedish data are also reported in such a way that is impossible to distinguish the micro and small size classes. Thus, if one is solely interested in the number of enterprises CFAR is a better register than EFA, and we have used data based on CFAR in the inter-country comparison. However, CFAR covers all firms, i.e. it includes enterprises active in non-market services and public administration. This exaggerates the number of Swedish firms in all sectors, but not the number of firms in the industrial sector. So far the CFAR has not been adjusted to the new definition of medium and large firms used in the fourth report. Hence, we have to adhere to the definitions in the first three reports.

Davidsson *et al.* (1996) have shown that changes of the turnover threshold have a great impact on the number of the smallest Swedish firms. The inclusion/exclusion of sole proprietorships also has a great effect on the reported number of smaller firms (Johansson, 1997). Since all countries included in the Eurostat reports use different thresholds and different criteria for including sole proprietorships, comparisons of the reported number of micro firms are likely to be misleading. In consequence, they are excluded from our country comparisons below.

First, the average number of enterprises in each size class is calculated for the period 1988 to 1991. The average number is then used to calculate the size distribution of firms. The results from these calculations are displayed in *Table 5*.

⁷Belgium and Denmark also use a different reporting unit, but have good coverage of sectors, years and size classes and are therefore included.

⁸For example, Italy does not report the number of firms in NACE 9 (other services).

Table 5 The Average Number and the Size Distribution of Firms per Million Inhabitants in the Industrial Sector, 1988–91 (rank in parentheses).

	<i>Firms per million inhabitants</i>			<i>Size distribution</i>			Sum
	Small	Medium	Large	Small	Medium	Large	
Germany	1187 (3)	144 (2)	33 (2)	87.0 (7)	10.6 (6)	2.4 (6)	100
France	669 (10)	84 (9)	19 (10)	86.7 (8)	10.9 (5)	2.4 (7)	100
U.K.	650 (12)	75 (11)	22 (5)	87.1 (6)	10.0 (7)	2.9 (4)	100
<i>Sweden</i>	<i>774 (8)</i>	<i>112 (5)</i>	<i>34 (1)</i>	<i>84.1 (11)</i>	<i>12.1 (2)</i>	<i>3.7 (1)</i>	<i>100</i>
Italy	1365 (2)	77 (10)	11 (11)	93.9 (1)	5.3 (12)	.8 (12)	100
Spain	1055 (5)	74 (12)	10 (12)	92.6 (2)	6.5 (11)	.9 (11)	100
Belgium	678 (9)	91 (7)	21 (8)	85.8 (10)	11.6 (3)	2.6 (5)	100
Portugal	1504 (1)	161 (1)	21 (7)	89.2 (4)	9.5 (9)	1.3 (10)	100
Denmark	1131 (4)	124 (4)	21 (9)	88.7 (5)	9.7 (8)	1.6 (9)	100
Luxembourg	668 (11)	141 (3)	26 (4)	80.1 (12)	16.9 (1)	3.1 (2)	100
Finland	787 (7)	101 (6)	27 (3)	86.0 (9)	11.1 (4)	3.0 (3)	100
Norway	895 (6)	86 (8)	21 (6)	89.3 (3)	8.6 (10)	2.1 (8)	100
Average	947	106	22	87.5	10.2	2.2	100

Note: Small, medium, and large firms are defined as firms with 10–99, 100–499 and 500+ employees, respectively. The geographical coverage for Germany is the former Federal Republic of Germany.
Source: Eurostat (1992, 1994), Statistics Sweden and own calculations.

Sweden on average has the greatest number of large industrial firms per capita among the countries compared. Here Sweden is followed closely by Germany, but then there is a leap to Finland. In terms of medium-sized industrial firms per capita Sweden is about average, while it ranks below average in the small size class. The impression that Sweden has many large but comparatively few small firms compared to other European countries is strengthened when we analyze the size distribution of firms. Sweden now ranks as number 1 in the large size class, and the distance to the 2nd ranking country is greater. Sweden also has a large share of medium-sized firms according to this definition. The share of small-sized industrial firms, however, is reported to be the second smallest among the countries included in the comparison.

The low number per capita and the small proportion of small sized Swedish firms are particularly interesting considering the analysis carried out in the previous section. The small size class in the international comparison includes three of the four size classes that we named intermediate-sized firms *viz.*, the 10–19, 20–49 and 50–99 classes. In the previous section it was shown that the number of intermediate-sized firms had declined substantially in manufacturing. Thus, the international comparison at

a single point in time is consistent with the above finding of a poor development for intermediate-sized firms.

Taken together these empirical findings raise the question whether Swedish institutions have been an obstacle to growth for intermediate-sized firms (and favoured large-sized firms)? We will investigate this question in the next two sections.

4. Some Evidence on the Willingness to Grow Among Swedish Firms

A number of studies have documented a weak inclination to grow among small firms in Sweden. For instance, Lundström *et al.* (1993) find that merely 10–15 percent of the small firms expand employment. But do small and newly started businesses want to grow? In order to shed light on this question a number of studies are useful to look at. Aronsson (1991) examined 535 firms established in 1988. Three years later turnover exceeded SEK 1 million in no more than one fourth of the firms, and one third of them had no full-time employee, the owner included. From Aronsson's study one can infer a number of reasons why the proclivity to expand was so low among the studied firms: (i) a lack of motivation among the founders of the firms; (ii) expansion was considered too costly in terms of after-tax capital requirements; (iii) many owners perceived that expansion would increase the risk due to more staff and cumbersome administration.

Roughly a decade earlier Utterback and Reitberger (1982) reached similarly dismal conclusions in their comprehensive interview study of 60 firms based on new technology.⁹ Lundström *et al.* (1993), in a survey of the willingness to grow of small firms written for the so-called Lindbeck Commission, single out a low desire to expand as the factor most responsible for thwarting growth — they claim that 19 out of 20 small firms simply do not want to grow! The Davidsson *et al.* (1994) study of single establishment firms (the majority of small firms) revealed that in 1989 – an extreme boom year in Sweden – only 15.7 percent of these firms had added employees, while 13.6 percent of them had cut back on staff that same year.

NUTEK (1996, pp. 97–100) report that there are 50,000 firms in Sweden that can, but do not want to grow. In the same report they also cite evidence that back in 1987 there was survey evidence showing that 28 percent of the firms saw a potential for expansion in their own market that "they did not intend to take advantage of."

⁹Utterback and Reitberger (1982, pp. 99–100) write: "The most clearly negative factor that we have discovered in our extensive conversations with entrepreneurs and reviews of various sources of data, is the degree to which the positive motivation of people in Sweden to take risks in creating new manufacturing firms and to make them grow to significant size appears to be declining. While we have looked for evidence to reject this hypothesis, each source of information or data to which we have turned appears to reinforce it. ... In sum, it appears that the Swedish economy is becoming increasingly reliant on fewer and larger enterprises as the sources of its continuing creativity and competitive potential in international markets at home."

Thus, it is easy to point out a number of studies indicating a lack of motivation to expand among small firms. No doubt, this finding is very much in line with the weak evolution of intermediate-sized firms documented above. The pool of firms in the intermediate size classes is tapped through mergers, take-overs and, at least in some cases, expansion into the group of large firms. At the same time, a low willingness to grow will lead to few firms growing out of the very smallest size classes. Thus a gradual depletion of the pool of intermediate-sized firms is likely, which is exactly what we reported in section 2 above.

A low willingness to grow among intermediate-sized firms may cause serious economic problems, such as high and persistent unemployment. According to Birch, Haggerty and Parsons (1995) a few very fast growing firms, so called "gazelles" create the majority of jobs in the U.S. If, for some reason, very few Swedish potential gazelles find it worthwhile to expand or if there are institutional impediments to their growth this might be one explanation for Sweden's dismal employment performance in recent decades, notably the fact that all employment growth since 1950 has taken place in the public sector (Davis and Henrekson, 1997a).

We believe that it is a challenging task to try to understand at a more fundamental level what factors underlie the documented unwillingness to grow, the weak evolution of the number of intermediate sized firms, and the few small firms in Sweden compared to many other similar countries in Europe. Could there be a straightforward economic explanation for this lack of motivation to expand? Certain results suggest that this is the case. For example, 40 percent of the small firm managers interviewed in Davidsson's (1989) study did not believe that expansion would have a positive effect on their personal finances. In the next section we will argue that these patterns are a rational outcome of unfavourable rules and institutions facing small firms, i.e. economic incentives to expand beyond the very smallest size classes have been weak.

5. Entrepreneurial and Business Conditions in Sweden

The development of the size distribution of firms and employment described in section 2 and the result in section 3 that Sweden has more large and fewer small-sized firms per capita than most other European countries raises the question whether Swedish institutions and economic policies have acted as impediments to growth for small and newly started businesses. Our hypothesis is that the development can largely be explained as the outcome of the institutions and rules of the game pertinent to

entrepreneurial activity in Sweden. In this section we will briefly point out a number of factors that may be of importance in these respects.¹⁰

Tax Policy. Until the 1990/91 tax reform Swedish tax policy greatly disfavoured new, small and less capital-intensive firms, while large firms as well as institutional ownership was highly favored. During an extended period of time, for three decades beginning in the early 1960s, there were extreme differences in taxation for different sources of finance and owner categories: (i) debt was the most favored and new share issues the most disfavored; (ii) households/individuals were taxed substantially more heavily than other owner categories. To provide a sense of the magnitude of the distortions caused by the Swedish tax system, *Table 6* presents effective marginal tax rates for different combinations of owners and sources of finance. Three categories of owners and sources of finance are identified, and the effective marginal tax rate is calculated assuming a pre-tax real rate of return of 10 percent. A negative number means that the real rate of return is greater after tax than before tax. Around 1980 the distortive traits of the system were most prominent. An investment yielding a pre-tax real rate of return of 10 per cent financed by a debt instrument meant that the tax-exempt institution received a real rate of return of 18.3 per cent after tax. For a household investing in a newly issued share with the same real rate of return the situation was very different: 10 per cent before tax became -3.7 per cent after tax. Naturally, tax rules benefiting debt financing relative to equity financing and institutional relative to individual ownership systematically favored large, real capital intensive, publicly traded and well-established firms.

Studies such as King and Fullerton (1984) and Fukao and Hanazaki (1987) also show that Swedish tax policy was extreme in these respects. Furthermore, the Swedish tax system generally subsidized housing investment. The very high marginal tax rates on individual income – the top marginal rate was close to 90 per cent in the early 1980s – also discouraged economic activities that are highly substitutable between market and home production sectors (laundrying, painting, home repairs, et cetera), and reduced the rate of return on human capital investment. At the same time the high marginal taxes created a strong incentive for individuals to save in the form of fully tax deductible pension plans. This channeled financial savings to large institutions (as a rule highly regulated) and thus reduced the supply of equity financing for potential entrepreneurs and extant small businesses.

¹⁰This section builds a great deal on Henrekson (1996) and Davis and Henrekson (1997a).

Table 6 Effective Marginal Tax Rate for Different Combinations of Owners and Source of Finance, 1960, 1970, 1980, 1985 and 1991 (real pre-tax rate of return 10% at actual inflation rates).

	Debt	New share issues	Retained earnings
1960			
Households	27.2	92.7	48.2
Tax exempt institutions	-32.2	31.4	31.2
Insurance companies	-21.7	41.6	34.0
1970			
Households	51.3	122.1	57.1
Tax exempt institutions	-64.8	15.9	32.7
Insurance companies	-45.1	42.4	41.2
1980			
Households	58.2	136.6	51.9
Tax exempt institutions	-83.4	-11.6	11.2
Insurance companies	-54.9	38.4	28.7
1985			
Households	46.6	112.1	64.0
Tax exempt institutions	-46.8	6.8	28.7
Insurance companies	-26.5	32.2	36.3
1991			
Households	31.7	61.8	54.2
Tax exempt institutions	-9.4	4.0	18.7
Insurance companies	14.4	33.3	31.6

Note: All calculations are based on the actual asset composition in manufacturing. The following inflation rates were used: 1960: 3%, 1970: 7%, 1980: 9.4%, 1985: 5%, 1991: 5%. The calculations conform to the general framework developed by King and Fullerton (1984). The average holding period of an asset is assumed to be 10 years.

Source: Jan Södersten, see also Södersten (1984, 1993).

Credit Market Policy. Throughout the postwar period until the late 1980s, the Swedish credit market was highly regulated. Priority was given to lending to the public sector and housing. The credit volume to other sectors was generally subjected to quantitative restrictions and the rate of interest was also regulated, which resulted in a situation of virtually continuous credit rationing (SOU 1982:52; Henrekson, 1992). This set of regulations clearly favored credit access by larger, older, firmly established firms and by real capital-intensive firms with ready sources of collateral. Since deregulation did not take place until the late 1980s, our data can be expected to be largely unaffected by this change.

The National Pension System. The mandatory national pension system (ATP) instituted in 1960 transformed the public sector into the most important supplier of credit. Large surpluses were accumulated in the national pension funds, the so-called AP funds. In the early 1970s, the AP funds accounted for 35 per cent of total credit supply. The decision to accumulate savings to such a great extent in the AP funds led to a massive further institutionalization of savings, which in all likelihood benefited large, well-established firms with a good credit rating that could operate on a high debt-equity ratio.

Undoubtedly, the structure of the Swedish tax and pension system reduced private wealth accumulation. The mandatory pension system, as long as it was considered viable, removed an important incentive for private saving. There are now a large number of studies showing that private wealth and the potential for self-financing are of great importance for the prospective entrepreneur regarding start-up and expansion. See, e.g., Lindh and Ohlsson (1996, 1998), Blanchflower and Oswald (1991), and Holtz-Eakin *et al.* (1994). This implies that the total tax burden and not just the marginal tax rates affect entrepreneurship and new business formations (Fazzari *et al.*, 1988).¹¹ The Swedish government has tried to offset the deficient supply of equity capital by encouraging the establishment of venture capital institutions. However, these institutions have to a very limited extent supplied equity financing to start-ups or at the first critical expansionary stage. NUTEK (1994, p. 113) observe that "the funds [from the venture capital institutions] have primarily been channeled to large firms."¹²

Labor security legislation. The Swedish Employment Security Act (LAS) gives employees extensive protection against unfair dismissal. Under LAS the only legal grounds for dismissal are gross misconduct and redundancies. In the latter case, LAS stipulates a "last in – first out principle". This regulation most likely increases the cost of hiring and firing. There are also research findings of a different sort that are consistent with the view that strict labour security affects firms differently depending on their size and possibly also other characteristics. In an interview study Kazamaki Ottersten (1994) found that LAS was mostly a restriction for intermediate-sized firms. Large firms have typically either found ways to circumvent the rules or have learnt to live with them, or have made special agreements with the trade union that remove the costly effects. In small firms, she found that it was often the case that the importance of firm survival was perceived so tangibly by all employees and the trade union alike, that,

¹¹See also Cressy and Olofsson (1997), who show that Swedish SMEs have a preference for financing expansion with retained earnings or equity supplied by the original owners relative to debt financing and equity from new sources.

¹²Also, Rylander (1995) finds no evidence that politicians or politically controlled bodies have the requisite competence to allocate capital to new and small businesses. On the contrary, he provides a number of examples where government funding has had a negative effect on the recipients.

at least in times of hardship, it was fairly easy to agree on measures that did not strictly adhere to LAS. Nevertheless, there are a great many firms reporting that LAS restricts their scope for action in such a way that a more cautious recruitment policy is adopted. NUTEK (1996, p. 100) draws a similar conclusion when they write that "the employment security act is another example where the regulatory measures entirely go against the special needs that would ensure that a young rapidly growing firm would be able to find the right recruits. Large, established firms having scope for relocations within the firm are favored by this legislation."¹³

Other evidence is also consistent with the view that employment security provisions fall more heavily on smaller firms and some other classes of firms. In the United States, both the rate at which workers separate from jobs and the rate at which employers destroy job positions decline with the size, age and capital intensity of the employer (Brown and Medoff, 1989 and Davis *et al.*, 1996) These patterns in worker separation and destruction rates suggest that any costs imposed by a regulation similar to the LAS are likely to fall more heavily on younger, smaller and less capital-intensive employers and distort the distribution of employment towards industries characterized by more stable establishment-level employment and longer job tenures.

Wage formation. As documented in many studies – see, e.g., Edin and Topel (1997) – the Swedish wage negotiation system produced a very narrow wage dispersion and high relative wages for low productivity workers. At the same time, numerous studies show that the wage level increases with the size, age and capital intensity of the firm (e.g., Brown and Medoff, 1989). By implication, the Swedish wage negotiation system has in many cases raised labor costs above the free-market outcome in small, new and labor intensive firms.

Large public sector employment. Roughly one third of total employment in Sweden is government employment, and all net employment expansion in Sweden since 1950 has taken place in the public sector. The rapid expansion of public employment was the result of deliberate political decisions. The decisions to produce highly income-elastic services such as health care, care for the elderly, child care and higher education almost entirely in the public sector had a great impact on employment growth and the character of business activity in the private sector. The publicly produced services are in many instances amenable to small firm production.

¹³Noteboom (1993) emphasises that comprehensive regulatory measures give rise to increased transaction costs, and that this is likely to be a heavier burden for small firms. A reasonable hypothesis in this context is that the decision making in the smallest firms is highly informal, but that the degree of formalization and hence transaction costs rise sharply when the firm attains a certain size. Since it is normally a fixed cost for the firm to master the regulatory environment, the relative cost diminishes rapidly when the firm has reached a certain critical size.

Given that our characterisation of the institutional and regulatory environment shows that large firms have been favoured, the increase in the number of firms with less than 10 employees may appear contradictory. One explanation is of course that other factors, such as technical change, also impinge on the size distribution of firms. A number of reports claim that small-scale production has grown more competitive in recent decades (e.g., Loveman and Sengenberger, 1991). Of course, such factors work against the effect of unfavourable institutions. Blau (1987) also claims that increased marginal tax rates makes it more profitable to become self-employed, since self-employment in practice results in more scope for tax deductions, and hence lowers the effective rate of taxation. The interviews made by Kazamaki Ottersten (1994) also give support for a similar conclusion. Still Sweden has few small (10–99 employees) firms compared to other European countries. This, of course, is in line with the findings that the Swedish regulatory framework has disfavoured smaller firms.

6. Concluding Remarks

We have argued that the size distribution of firms may largely be determined by institutional factors. This hypothesis was tested in a highly exploratory fashion by studying the evolution of the size distribution of firms over time in Sweden for a period spanning from the late 1960s to the early 1990s and the size distribution of employment since 1984. Our statistical analysis shows that over time the relative importance of intermediate-sized firms (10–199) has gradually diminished since the end of the 1960s. This conclusion is valid both for the whole economy, the private sector¹⁴ and for manufacturing. Adjustments for corporate groups, which to our knowledge have not been undertaken in previous studies, make little difference. The relative and also the absolute decline of the number of intermediate sized firms is consistent with numerous Swedish survey studies documenting a low willingness to grow among small firms. Sweden also seems to have fewer small-sized firms (10–99), and more large firms than most other European countries.

Our analysis of the pertinent institutions and rules of the game for entrepreneurship in Sweden showed that small firms, start-ups, less capital-intensive firms and family-owned businesses were disfavoured. The Swedish tax system, credit market regulations, the national pension system, employment security laws, wage setting institutions, and the public sector monopolization of the production of key services were shown to have such effects. Thus, seen from this perspective it is quite logical that the Swedish economy came to have the greatest large firm dominance

¹⁴With the exception of the 10–19 employee size class.

among the OECD countries (Jagrén, 1993; Heum *et al.*, 1993). There are also a number of policy-determined circumstances that hinder small firms from rapid growth. The sensitive phase when a small firm evolves from having just a few employees to the size where it has access to external (often institutionalized) venture capital or a sizeable flow of retained earnings is probably crucial in this respect.

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