THE NUMBER AND THE SIZE DISTRIBUTION OF FIRMS IN SWEDEN AND OTHER EUROPEAN COUNTRIES*

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Abstract. This study investigates changes in the number and the size distribution of firms in Sweden in the period 1968-1993. The number and the size distribution of Swedish firms are compared to the number and the size distribution of firms in eleven European countries. A decrease in the number of enterprises in the Swedish manufacturing industry is observed in all size classes and intermediate-sized (10-199 employees/firm) firms declined the most. Large differences are found in the number of firms between countries. Data indicate that Sweden has fewer small (10-99 employees/firm) and more large-sized (500+ employees/firm) firms than other European countries. However, we find no support for the standard claim that Sweden has fewer medium-sized (100-499 employees/firm) firms than other European countries.

JEL Classification: L11, F23.

Keywords: Industry Structure, Size Distribution of Firms.

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1. INTRODUCTION

The Swedish economy has experienced slow growth for a long time. Several explanations for this has been suggested, including the dramatic expansion of the public sector and a regulated labour market (see e.g. SOU 1993). Another explanation is related to the dynamism of firm growth.[1] Economic growth is seen as a dynamic process where the rate of growth is determined by innovations, flexibility, and the ability to adjust. In this process, the founding of new firms and the growth of small and medium-sized enterprises play an important role (see e.g. Myhrman, 1994). In the Swedish debate it is often claimed that small firms grow to slowly (see e.g. Andersson et al., 1993). As a result, it is asserted that Sweden has got an employment structure like a ”snaps-glass”, i.e. a large share of employment in small and large-sized enterprises, but few employees in medium-sized enterprises (Confederation of Swedish Industries, 1995).

The empirical basis for these conclusions about firm size and Swedish economic growth is weak, however. There are a few studies where the growth of the number of small and medium-sized enterprises are investigated. Carstedt and Isaksson Péres (1972) and Du Rietz (1975) are two early ones, but their investigations ended in the late sixties. More recently, Carlsson (1992a) and Braunerhjelm and Carlsson (1993) have studied the number of establishments in different size classes in manufacturing from 1968 to 1988. Dahmén (1992) has studied changes in the number of establishments in different size classes in the industrial sector from the end of the Second World War to the end of the 1980s. Davidsson et al. (1994a) have investigated the number of establishments in different size classes from 1985 to 1989. New entries of firms have been investigated in, for instance, Du Rietz (1985) and SIND (1991). Large enterprises have been studied in, e.g. Engwall (1970), Jagrén (1988), and Heum et al. (1993). However, there are no investigations where the number and the change in the number of enterprises in all size classes, and in all sectors, are studied from the 1970s and on.

The purpose of this study is, first, to analyse changes in the number and the size distribution of firms in Sweden between 1968 and 1993. We study the changes in all sectors and in manufacturing separately. (In the studies mentioned above, mainly manufacturing or the industry have been investigated). Secondly, we compare the Swedish situation with that in 11 other European countries. We are interested in whether Sweden is an outlier compared to these other countries.

[1] Throughout the paper, ”firms”, ”companies” and ”enterprises” will be used interchangeably.

In this study we define the size of a firm by the number of employees. In the literature there are different definitions of small, medium and large firms. In this paper, we use the following ones: In the international comparison, firms with 0-9 employees are defined as micro-sized firms, 10-99 employees as small-sized firms, 100-499 employees as medium-sized firms, and 500+ employees as large-sized firms. In the analysis of the Swedish developments between 1968 and 1993, it is possible to divide the data into more size classes. We will find that firms with 10-199 employees distinguish themselves from other firms. For convenience, these firms will be denoted intermediate-sized firms throughout the text.

The published Swedish data do not distinguish state-owned firms from privately-owned ones. This might cause problems, since it is possible that the two types of enterprises work under different conditions. Furthermore, the published data do not distinguish independent firms from subsidiary companies. To overcome these two problems, we use a unique data set acquired from Statistics Sweden, where state-owned enterprises are excluded and where it is possible to take groups into account.[2] This is the first time such an analysis is conducted.

There are several related studies that investigate employment and the structure of employment in Swedish firms of different sizes. For instance, Ohlsson (1994) compares employment in firms of different sizes in Sweden with that of other European countries. Jagrén (1995) studies employment in enterprises of different sizes in the Swedish industrial sector. Davis and Henrekson (1996) and Henrekson (1996) study the conditions for small businesses in Sweden and compare the structure of employment in Sweden with that in the USA. Comprehensive studies of the Swedish small business sector have been carried out in Davidsson et al. (1994a, 1996) and in NUTEK (1994a, 1995), but these studies have not addressed the questions analysed in this paper. In several studies, groups are taken into account, but only for individual years (e.g. Henrekson, 1996, reports employment adjusted for groups in the Swedish industrial sector in 1994). To the best of my knowledge, there are only two studies that investigate changes in employment adjusted for groups over time, viz. Davidsson et al. (1994a) and Davidsson et al. (1996). They found that firms with less than 200 employees created the major part of the new (net) jobs in Sweden from 1985 to 1994.[3]

Thus, the contribution of this paper differs from that of previous studies by i) focusing on enterprises and not on establishments or employment; ii) taking state-owned enterprises and

[2] Throughout the text, a parent enterprise with its subsidiary companies will be denoted a group. Subsidiary companies are not seen as independent firms.

[3] Davidsson et al. (1994a, 1996) mainly investigated the number of establishments and employment in establishments. A minor part of the investigation focused on employment in firms. This study differs from Davidssson et al. (1994a, 1996) in several ways, among others: i) We study a longer time period. ii) The number

groups into account, when analysing changes in the number and the size distribution of firms in Sweden; iii) including all sectors, and not only ”industry” or ”manufacturing”, in the analysis; and iv) discussing the statistical problems when analysing the Swedish development and making international comparisons.

In the next section, the changes in the number and size distribution of Swedish firms in different size classes between 1968 and 1993 are examined. In section 3, a unique data set is used to investigate the number and the size distribution of independent private enterprises in Sweden. That is, state-owned enterprises are excluded from the data and groups are taken into consideration. The international comparison of the number and the size distribution of enterprises is carried out in section 4. Finally, section 5 concludes.

of enterprises, and employment in enterprises, are divided into more size classes. iii) We also analyse the size distribution of firms and employment.

2. THE NUMBER AND THE SIZE DISTRIBUTION OF FIRMS IN SWEDEN 1968-1993

2.1 THE DATA

We begin by analysing the data from the Central Register of Enterprises and Establishments, CFAR (Centrala Företags och Arbetsställeregistret), a register compiled and published by Statistics Sweden.[4] All firms, both privately and state-owned, having employees or a taxable turnover exceeding a certain limit (originally SKR 10,000) are included in the register. Thus, with the exception of very small companies, the register contains the whole population of Swedish firms. Data are published since 1968, no numbers are reported for the years 1971, 1977, 1978, 1984 and 1985, though.

During the time period, there are some changes of the routines for collecting and reporting data affecting the reported number of firms. In 1987, the limit on turnover for excluding firms without any employees was changed from SKR 10,000 to SKR 30,000.[5] It was once again increased in 1991, this time to SKR 200,000.[6] These changes particularly affect the reported number of firms in the 0-1 size class. Davidsson et al. (1996) claim that 90,000 establishments were excluded from the statistics due to the change to SKR 200,000, the majority within the primary sectors. Before 1983, the statistics were based on the number of employees working full time. In 1983, this was changed to the number of employees, i.e. no adjustment for part time workers is made from this year and on. Braunerhjelm (1993, p. 104) reports that the change has a large impact on the number of firms in the smallest size class. From 1979 and on, county councils and municipalities were included in the statistics.[7] Since they are large employers and each county council and municipality are registered as one enterprise, this has a great impact on the number of large-sized enterprises in ISIC 9 and on the total number of large-sized companies. This can be seen in Appendix 1. In 1986, previously excluded firms in the primary sectors were included, which largely influences the number of firms in the 0-1 size class in the primary sector.[8]

The number of enterprises will consistently be reported in relation to the number of inhabitants. This to take the population growth during the studied period into account.

[4] The data used in this section is published in Statistical Abstract of Sweden.
[5] Hofsten, Ermalm-Kåreby (1987) and Statistical Abstract of Sweden (1989).
[6] Davidsson et al. (1996, p. 28).
[7] Statistical Abstract of Sweden (1979, 1980).
[8] Statistical Abstract of Sweden (1985, 1988).

2.2 ALL SECTORS

In 1993, the number of firms ranged from approximately 40,000 enterprises/1,000,000 inhabitants in the smallest size class (0-1 employees/enterprise) to 92 enterprises/1,000,000 inhabitants in the largest (500+ employees/enterprise) (see Table 1). A remarkable increase (158%) of the number of firms in the size class 0-1 employees/firm is observed between 1968 and 1993. However, this does not necessarily imply any increased production or increased rate of self-employment. First, changes in the statistical methods have a positive effect on the number of enterprises. Second, many of the companies within this size class can be more or less dormant or used for tax planning.[9] In OECD (1992, p. 158) an increased number in non-agricultural self-employment is reported for Sweden, though. This is questioned by Davis and Henrekson (1996). Referring to other sources of information, they find no evidence for this.[10] An increase in the number of enterprises in the size classes 2-4 employees/firm (22%), 5-9 employees/firm (24%), 10-19 employees/firm (14%), 20-49 employees/firm (1%), 200-499 employees/firm (8%) and in the largest (61%) is observed. The last figure is somewhat misleading, since county councils and municipalities are included in the statistics from 1979 and on. If instead 1979 is used as the base year for large firms, the number of enterprises grew from 86 to 92, i.e. about 7% - a less sensational increase. In the size classes 50-99 employees/firm and 100-199 employees/firm the number of enterprises declined by 8% and 7%.

Table 1 The number of enterprises/1,000,000 inhabitants 1968-1993

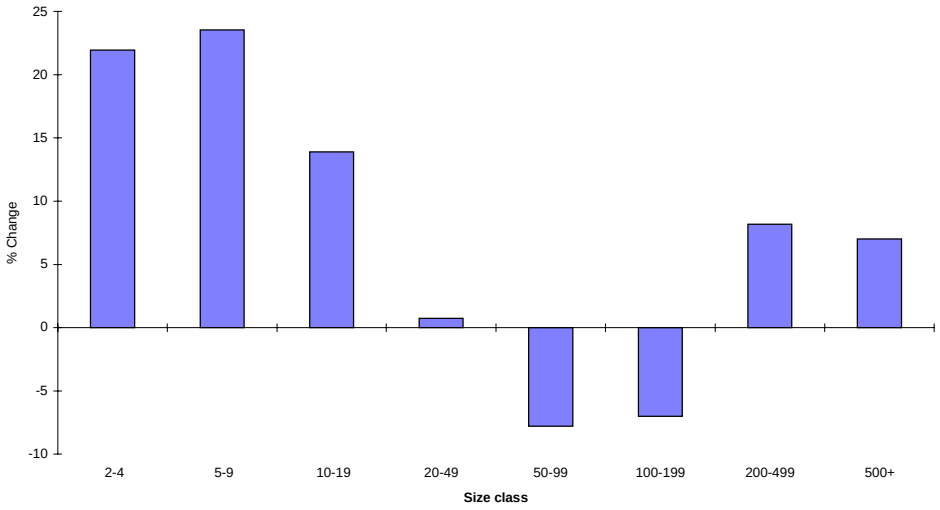
Size class	*1968*	*1993*	*Change 1968-1993 (%)*
0-1	15474	39885	158
2-4	6232	7598	22
5-9	2587	3196	24
10-19	1404	1599	14
20-49	909	916	1
50-99	307	283	-8
100-199	152	141	-7
200-499	88	95	8
500+	57 (86)	92	61 (7)
Total	27210	53806	98

Note: From 1979 and on, county councils and municipalities are included in the statistics, which has a large effect on the number of large enterprises. The numbers in parenthesis show the number of enterprises and the change thereof if 1979 is used as base year. Data concerning the smallest size class are uncertain due to statistical problems.
Source: Statistics Sweden and own calculations.

[9] To my knowledge, no estimation has been made of the number of dormant firms or firms used for tax planning.
[10] Also, see Henrekson (1996).

An interesting observation is the lower growth of the number of enterprises in the 20-199 size classes (see Figure 1). The 50-99 and 100-199 size classes are the only size classes where the number of firms declines.

Figure 1 The change in the number of enterprises/1,000,000 inhabitants 1968-1993, all sectors



Note: The 0-1 size class is omitted.
For the 500+ size class the growth between 1979 and 1993 is used.
Source: Statistics Sweden and own calculations.

Concentrating on the development since the beginning of the eighties, an increase in the number of enterprises for all size classes can be observed during the decade. In the beginning of the nineties, the development was reversed and a severe decrease in the number of enterprises for all size classes, except for the two smallest, is observed (Appendix 1).

The primary sector has a large share of the enterprises in the smallest size classes, but declines very fast in importance when the size classes get larger (see Table 2). The larger the size classes, the more important and dominating is manufacturing. Mining and quarrying and electricity, gas and water have very few enterprises in all size classes.

A shift from manufacturing and construction to service can be observed. The share of manufacturing has decreased in all size classes except in the smallest one, where the share is about the same. The same pattern is observed for construction, whose share has decreased in all size classes except in the size class with 2-4 employees/firm. These industries have been replaced by financing etc. and community services etc. The share of financing has increased in

all size classes and the share of community services has increased in all size classes, with the exception of the two smallest ones.[11]

[11] The increased share of community services is partly due to the inclusion of public authorities into the statistics.

Table 2 Sectors and the share (%) of enterprises in 1968 and 1993

Size class	0-1		2-4		5-9		10-19		20-49		50-99		100-199		200-499		500+		
ISIC	*1968*	*1993*	*1968*	*1993*	*1968*	*1993*	*1968*	*1993*	*1968*	*1993*	*1968*	*1993*	*1968*	*1993*	*1968*	*1993*	*1968*	*1979*	*1993*
1 Agriculture, hunting , forestry, etc.	13.4	17.3	2.8	5.0	2.2	2.8	1.8	1.8	2.0	1.3	1.4	1.0	2.7	1.3	3.3	1.6	1.8	1.3	0.7
2 Mining and quarrying	0.1	0.1	0.1	0.2	0.5	0.2	0.4	0.2	0.6	0.3	0.6	0.2	0.7	0.4	0.6	0.4	0.4	0.1	0.2
3 Manufacturing	6.1	6.8	12.9	10.3	21.1	15.0	29.2	17.6	34.9	24.3	40.5	31.9	47.2	35.0	48.1	37.5	53.2	36.2	28.2
4 Electricity, gas and water	0.3	0.1	0.3	0.1	0.5	0.1	0.4	0.3	0.5	1.2	0.6	1.3	0.6	1.9	0.7	1.9	0.2	0.6	0.9
5 Construction	19.9	9.6	9.7	12.1	13.3	11.2	14.3	11.9	14.9	9.9	15.5	7.1	10.4	5.8	9.8	3.0	7.3	3.4	4.0
6 Wholesale and retail trade. etc.	17.0	22.6	34.8	30.6	33.9	33.8	30.1	32.4	26.2	28.8	24.0	23.2	21.8	18.0	18.2	16.6	16.6	9.9	7.6
7 Transport, storage. etc.	7.3	6.8	9.7	7.5	6.9	7.4	6.3	7.2	6.2	6.4	5.6	5.9	4.9	5.7	4.7	5.1	5.1	4.6	4.2
8 Financing, insurance. etc.	18.8	23.4	8.6	16.6	7.4	12.5	6.6	11.7	6.0	11.7	5.7	13.2	5.9	14.5	8.5	15.6	6.8	7.7	8.5
9 Community social services etc.	17.1	13.2	21.1	17.6	14.2	16.9	11.0	16.9	8.6	16.2	6.2	16.3	5.9	17.5	6.2	18.3	8.6	36.2	45.6
Sum	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Note: From 1979 and on, county councils and municipalities are registered in ISIC 9, which has a large influence on the shares in the large size class. Therefore, also the shares for 1979 are shown for this size class. Calculations concerning the smallest size class is uncertain, due to data problems.
Source: Statistics Sweden and own calculations.

2.3 MANUFACTURING

Historically, manufacturing has played an important role in the Swedish economy. Even though a shift from manufacturing to services has taken place, manufacturing is still one of the most important industries concerning employment, exports etc. It is maintained that the production of goods often is necessary for the production of services and that, for this reason, the importance of manufacturing is underestimated (e.g. Eliasson et al., 1990). Data are generally better for manufacturing than for other industries and that partly explains why more studies have been carried out analysing manufacturing. A more profound analysis of manufacturing will therefore be made also in this study. The number and the change in the number of enterprises in manufacturing are shown in Table 3. For each size class, the maximum and the minimum number of firms during the period, are also reported.

Table 3 Manufacturing enterprises/1,000,000 inhabitants 1968-1993

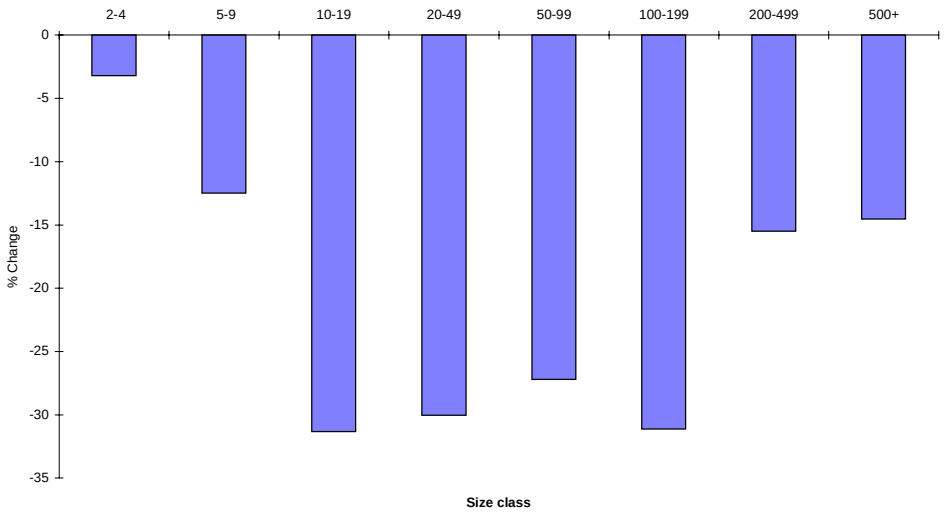
Size class	1968	Min Value	Min Year	Max. Value	Max. Year	1993	Change 1968-1993 (%)
0-1	945	782	1976	4081	1986	2725	188.26
2-4	806	682	1982	847	1990	780	-3.21
5-9	547	472	1983	561	1970	479	-12.48
10-19	410	281	1993	430	1970	281	-31.32
20-49	318	222	1993	325	1973	222	-30.03
50-99	124	90	1993	138	1970	90	-27.21
100-199	72	49	1993	75	1969	49	-31.11
200-499	42	36	1993	43	1970	36	-15.49
500 +	30	26	1993	36	1989	26	-14.53
Total	3294					4689	42.35

Note: Calculations concerning the smallest size class is uncertain due to data problems.
Source: Statistics Sweden and own calculations.

The number of manufacturing enterprises/1,000,000 inhabitants ranges from 2,725 in the smallest size class to 26 in the largest size class in 1993. From 1968 to 1993 the total number of manufacturing enterprises/1,000,000 inhabitants increased by about 43%, from 3,294 to 4,689, but the increase is entirely due an increase in the number of firms in the 0-1 size class. With the exception of the smallest size class, a decrease in the number of enterprises is observed in all size classes. In the 10-199 size classes, the decrease is sharp with a fall of about one third (see Figure 2). Note that the maximum number of enterprises in the largest and two smallest size classes is reached in 1986-1990, while the maximum number of enterprises in the other size classes is reached around 1970. The lower growth rate in the

intermediate-sized (10-199) enterprises is interesting, since it has been maintained that small firms have less favourable conditions than large firms.

Figure 2 The change in the number of enterprises/1,000,000 inhabitants 1968-1993, manufacturing



Note: The 0-1 size class is omitted.
Source: Statistics Sweden and own calculations.

In Table 4, the change in the number of enterprises in different size classes for the periods 1968-1982, 1982-1990, and 1990-1993 is calculated. In 1982, the Swedish krona was devalued by about 16%. This marked the beginning of a reorientation of the Swedish economic policy, which later resulted in a deregulation of the financial markets and a tax reform, among other things. GDP growth was positive all years between 1982 and 1990. In the early nineties, policy shifted towards pegging low inflation. GDP declined three years in a row (1991-1993).

Table 4 The change in the number of enterprises/1,000,000 inhabitants (%), manufacturing

Size class	*0-1*	*2-4*	*5-9*	*10-19*	*20-49*	*50-99*	*100-199*	*200-499*	*500+*
1968-1982	190.69	-15.32	-8.05	-14.33	-13.48	-8.39	-11.91	-6.42	4.78
1982-1990	35.73	24.04	5.34	5.73	2.15	-3.88	6.34	8.72	3.89
1990-1993	-26.94	-7.85	-9.64	-24.17	-20.83	-17.34	-26.45	-16.94	-21.48

Note: Calculations for the 0-1 size class is uncertain due to statistical problems.
Source: Statistics Sweden and own calculations.

During 1968-1982 the number of firms in the 10-199 size classes declined the most, with exception of the 2-4 size class. The number of firms with 500+ employees increased. With the exception of the smallest size class, this was the only size class showing a positive change in

the number of firms. Starting in 1982, we note an increase in the number of enterprises in most size classes during the rest of the decade. The development for firms with 20-99 employees is interesting. Within this group, no particular growth of the number of firms can be observed - in the 50-99 size class the number of firms actually declined. During the nineties the number of firms declined in all size classes, most in the 10-19 and 100-199 size classes. Studying the whole period 1968-1993 and the sub-periods it appears that the intermediate-sized enterprises show the lowest growth of the number of firms.

The Swedish development seems to differ from that of other countries. Schwalbach (1994) investigates the growth of the number of industrial enterprises in different size classes in France, Germany, Italy, The United Kingdom and Denmark.[12] The data set was divided into the size classes 20-99, 100-499 and 500 and more employees/enterprise. For the period 1979-1986 he observed the largest growth of the number of firms in the smallest size class and the smallest growth of the number of firms in the largest size class. Calculating the changes in the number of Swedish firms for the corresponding time period and size classes, it is found that the number of firms grew the most in the large size class.[13]

2.3.1 The size distribution of firms

The largest share of enterprises is in the 2-4 size class and the lowest share in the 500+ size class (see Table 5). The share of intermediate-sized firms has decreased and the shares of smaller and larger firms have increased during the period. Enterprises with 10-199 employees have decreased their share of the total number of firms with approximately 13% to 18%. The share of smaller enterprises has risen more than the share of larger ones. The largest increase, about 16%, is observed in the 2-4 size class.

Table 5 The size distribution of firms (%), manufacturing

Size class	2-4	5-9	10-19	20-49	50-99	100-199	200-499	500+	Total
1968	34.31	23.29	17.44	13.53	5.29	3.05	1.80	1.29	100
1993	39.72	24.38	14.32	11.32	4.61	2.52	1.82	1.32	100
Change (%)	15.76	4.67	-17.86	-16.32	-12.94	-17.61	1.07	2.21	

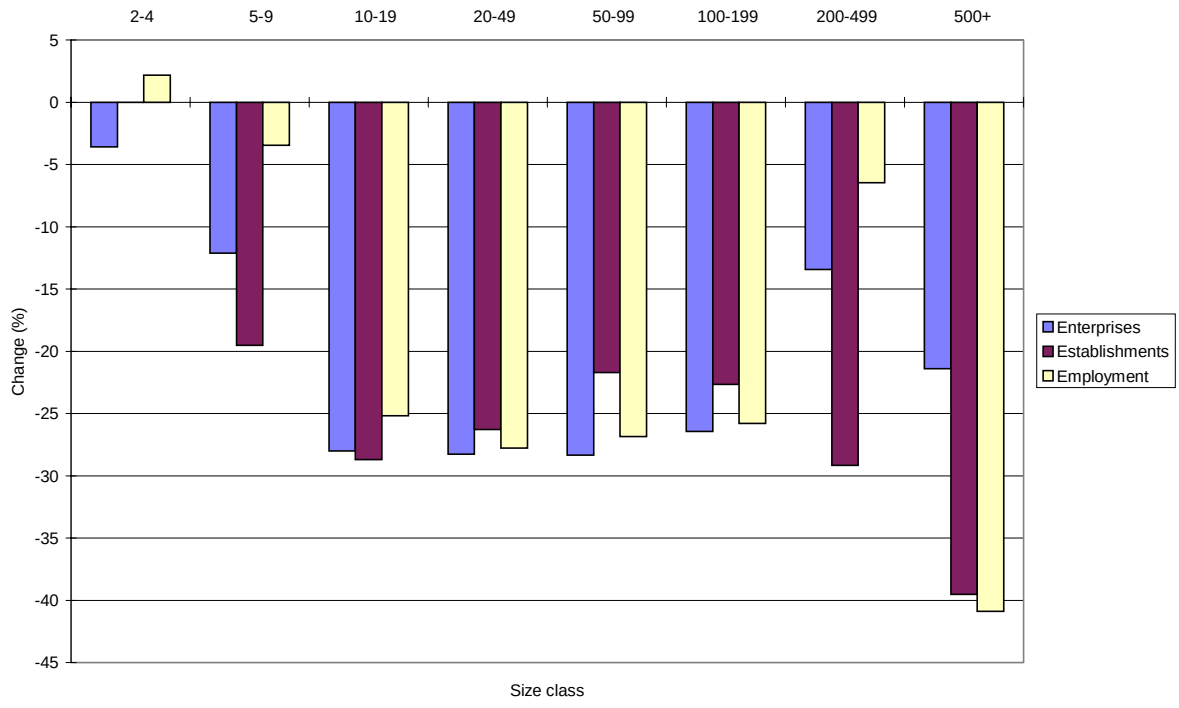
Note: The 0-1 size class is excluded due to statistical problems.
Source: Statistics Sweden and own calculations.

2.3.2 Establishments and employment

[12]The industrial sector includes mining, manufacturing and electricity.
[13] The number of enterprises grew by 4.0 % in the 500+ size class, by 1.4 % in the 100-499 size class and declined by -1.6 % in the 20-99 size class.

The change in the number of firms in different size classes can also be compared to the change in the number of establishments and the change in the number of employees in the same size classes (see Figure 3). Data about employment divided into the size classes previously used are published from the mid seventies and on.

Figure 3 The change in the number of enterprises, establishments and employment/1,000,000 inhabitants 1974-1993, manufacturing



Note: The growth of the number of enterprises differs in figure 2 and 3, since the studied time periods differs. The growth of the number of establishments is calculated for the years 1975-1993
The 0-1 size class is excluded.
Source: Statistics Sweden and own calculations.

The growth of the number of enterprises shows the same pattern from 1974 to 1993 as from 1968 to 1993, i.e. the number of enterprises has decreased most in the intermediate size classes and least in the smallest size classes.

The number of establishments on the other hand decreased most in the two largest size classes during the period. A recent study by Davidsson et al. (1994a, p. 58) reports an increase in the number of establishments in all size classes, particularly in the smallest size class. However, that study differs from ours in two important ways, which makes a comparison difficult. First, their study was carried out for the time period 1985 to 1989. Second, they included service industries in their investigation. In both cases, the differences could be expected to have a positive effect on the reported growth of establishments. Between 1984 and 1989, Swedish GDP growth was consistently positive. Thus, the early nineties' depression

was not covered in their study. The growth of the service industry has also been larger than the growth of manufacturing. Carlsson (1992a) studied the number of establishments in manufacturing in the 1968-1988 period.[14] He reports that the number of establishments with 1-9 employees decreased by 80% during that period, a decline much larger than the changes reported in our study. It can be noted that the comparability between Carlsson (1992a) and the present study is affected by the use of different sources of information. Carlsson (1992a) uses data from the Annual Report of Manufacturing and the reported number of establishments in this publication differs from the number of establishments reported in CFAR, which is our source of information.

Turning to employment, a large decrease of employment in the largest size class and an increase in the smallest size class is observed. This is similar to the findings in The European Observatory for SMEs (1995, p. 19), where industrial employment is reported to have declined more in large-sized enterprises[15] than in small and medium-sized enterprises.[16] It is also in line with Davidsson et al. (1994a, 1996), who found that small-sized firms created the bulk of new jobs in Sweden. At first, the larger decrease of employment in the 500+ size class seems to be contradictory to the smaller decrease of the number of firms in the same size class. This is commented on below.

2.4 COMMENTS

The main finding in this section is the relative lower growth of the number of intermediate-sized (10-199) enterprises in manufacturing. There are a few other facts which strengthens the impression of a lower growth rate of intermediate-sized firms in manufacturing. i) Dividing the studied period into sub-periods, the number of intermediate-sized enterprises shows a low growth rate in all sub-periods. ii) The early peak in the number of intermediate-sized enterprises. iii) The different development in some other countries, where large-sized enterprises show the lowest growth rate.

One explanation for the larger decline of the number of intermediate-sized enterprises in manufacturing may have been that single firms have merged or grown into the large size class, i.e. the observed decrease of the total number of firms is not due to individual firms becoming smaller, but due to the growth of individual firms into larger size classes. A problem with this

[14] See also Braunerhjelm and Carlsson (1992).
[15] In the report, enterprises with 10-99, 100-499 and 500+ employees are defined as small, medium and large, respectively.
[16] The time period studied was 1988-1992.

explanation is that there has been a negative net growth of enterprises in all size classes (with the exception of the 0-1 size class). Another reason for the larger decline of intermediate-sized firms may be that firms within these size classes to a larger extent have merged or grown without changing size class, i.e. their average size would have increased. In Table 6, the average enterprise size in 1974 and 1993 is shown.

Table 6 Average enterprise size in 1974 and in 1993, manufacturing

Size class	*2-4*	*5-9*	*10-19*	*20-49*	*50-99*	*100-199*	*200-499*	*500+*
1974	2.67	6.19	13.32	30.36	68.96	137.83	287.65	1935.08
1993	2.83	6.79	13.85	30.58	70.40	139.02	310.21	1455.37
Change (%)	5.99	9.84	3.94	0.72	2.08	0.86	7.84	-24.97

Note: The 0-1 size class is omitted.
Source: Statistics Sweden and own calculations.

The smallest changes are observed in the intermediate-sized enterprises. The average enterprise size has increased in all size classes except in the largest, where it has declined substantially (about 25%). Thus, an important explanation for the fact that the decline of employment is larger than the decline of enterprises in the largest size class is that large companies have considerably decreased their employment, but without becoming so small that they have changed size class.

A general problem with the interpretation of the results is that the data set does not allow for taking group companies into consideration. The growth/decline in the number of enterprises and employment may be due to the dividing of one (parent) firm into subsidiary companies. If one by the ”true” size distribution means the number of independent enterprises in different size classes, it can be discussed whether the observed changes reflects ”true” changes in the number of firms. In the next section, groups will be taken into consideration.

3. STATE-OWNED ENTERPRISES, PRIVATE ENTERPRISES AND GROUPS

3.1 THE DATA

So far we have used published Swedish data. The problem with them is not only that they include state-owned owned enterprises, but also that they fail to distinguish between independent enterprises and subsidiary companies. There are various drawbacks with this. For example, it can be assumed that state-owned enterprises act within another set of restrictions than privately owned ones, which motivates a study of private enterprises separately. Doing that, it can be questioned whether small subsidiaries of large groups really are ”small” firms and whether they work under the same conditions (set of rules) as small independent enterprises. A similar argument can be made when, for instance, the number of enterprises in different size classes changes because a (large) company turns one or several divisions into subsidiary companies. It is also important to study independent firms if one wants to investigate in the future whether certain types of ownership have been favoured.

Statistics Sweden has provided us with data that exclude state-owned enterprises and groups. The data cover the years 1972, 1984, and 1993. 1972 was the first year where it was possible to exclude public enterprises, 1984 was the first year where it was possible to take groups into account and, 1993 is the last year included in the present paper. The data set is limited to 3 years due to the costs of including more years. In short, the adjustments have been made in the following way. First, all state-owned enterprises have been excluded from the Central Register of Enterprises and Establishments (CFAR). Second, a parent company and its subsidiary companies have been put together to one company, which throughout the text will be denoted a group. Third, the groups have then been sorted into the appropriate size class. Fourth, each group has been sorted into the major division (sector) where it has its majority of employees. In the text, three notations on the population of enterprises will be used depending on what adjustments have been made; all denotes the whole population of enterprises without any adjustments, private denote private enterprises without any adjustments made of groups, and groups denote the population of private enterprises adjusted for groups. The analysis is focused on manufacturing and we are mainly interested in whether the revealed pattern in section 2 (the decrease of intermediate-sized firms) is confirmed when private enterprises adjusted for groups are studied. First, however, a few short comments on the firms in all sectors of the Swedish economy.

3.2 All Sectors

The share of state-owned enterprises and the share of employment in state-owned enterprises in 1972, 1984 and 1993 are reported in Table 7. Since the number of enterprises and employment adjusted for state ownership has not been published before, we have chosen to report an extended version of the table, including the number of enterprises and employment, in Appendix 2. A first observation is that the share of state-owned enterprises in Sweden is small in most sectors, close to 0 in several sectors. The only exception is ISIC 4 (electricity), where state-owned enterprises made up to more than one third of all enterprises in 1993. Between 1972 and 1993, the share of state-owned enterprises increased in sectors 1 to 7 and decreased in sectors 8 and 9. The share of state-owned enterprises in all sectors is close to 1% for all studied years.

A different picture emerges, however, when employment is examined. The share of employment in state-owned enterprises is much higher than the share of state-owned firms. In sectors 4, 7 and 9, much more than half of the work-force is employed in state-owned enterprises. In sectors 3, 5 and 6, the share of state-owned enterprises is less than 10% during the whole period, but this is still very high compared to the state's share of the number of firms. The lowest number is observed in 1972 in construction, where less than 1% of the work-force was employed by state-owned enterprises. Moreover, the total share of employment in state-owned enterprises has strongly increased, nearly doubled, from about 26% in 1972 to 45% in 1993.

Table 7 The share of state-owned enterprises and state employment (%), all sectors

	Enterprises			Employment		
ISIC	1972	1984	1993	1972	1984	1993
1 Agriculture etc.	0.05	0.12	0.19	20.25	25.65	19.31
2 Mining	1.12	1.44	3.05	34.54	37.44	31.35
3 Manufacturing	0.17	0.41	0.36	3.09	10.97	4.52
4 Electricity	13.34	27.61	38.68	64.80	75.07	85.58
5 Construction	0.06	0.06	0.11	0.88	7.26	8.18
6 Wholesale trade etc.	0.10	0.15	0.14	5.32	4.94	5.00
7 Transport etc.	0.24	0.51	0.81	56.41	65.64	61.84
8 Financing etc.	3.18	1.99	1.22	19.12	28.33	23.53
9 Community services etc.	8.03	6.47	3.35	80.66	86.61	85.37
All sectors	1.25	0.96	0.96	26.43	43.94	45.26

Source: Statistics Sweden and own calculations.

The share of state-owned enterprises and the share of employment in state-owned enterprises in different size classes are shown in Table 8. The share of state-owned enterprises and public employment is negligible in the smallest size classes, but the larger the size class, the larger the public share. In 1984 and in 1993, more than half of the enterprises in the largest size class are state-owned. In the same years, more than two thirds of the employees in the largest size class work in enterprises owned by the state. The share of state-owned companies and the share of employment in state-owned companies have increased in the 10-500+ size classes and decreased in the other ones between 1972 and 1993.

Table 8 The share of state-owned enterprises and employment (%), all sectors

Size class	*0-1*	*2-4*	*5-9*	*10-19*	*20-49*	*50-99*	*100-199*	*200-249*	*500+*	*Total*
1972 Ent.	0.77	2.02	2.10	2.32	4.02	7.21	13.80	22.49	32.23	1.25
1972 Emp.	1.74	2.06	2.09	2.39	4.22	7.38	14.43	22.49	42.99	26.43
1984 Ent.	0.35	1.72	2.30	3.34	5.00	8.81	12.21	23.40	52.36	0.96
1984 Emp.	1.61	1.74	2.36	3.41	5.40	8.97	12.54	24.56	67.19	43.94
1993 Ent.	0.36	0.42	1.76	4.85	8.08	12.15	17.56	25.15	53.73	0.96
1993 Emp.	0.26	0.45	1.92	5.08	8.46	12.39	17.76	26.25	69.93	45.26

Source: Statistics Sweden and own calculations.

The number of private enterprises is reduced in all size classes, when parent enterprises and subsidiary companies are put together to groups (see Table 9). The decrease is lowest in the smaller size classes, only a few percent. The largest decreases are observed in the 50-499 size classes, where about 25% of the stock of private enterprises ”disappears”. It is also seen that the magnitude of the change in the number of enterprises in the corresponding size classes is about the same in both years, for instance the change in the number of enterprises in the 20-49 size class is about 17% in 1984 and in 1993. This implies that about the same pattern will be observed when the change in the number of enterprises between 1984 and 1993 are studied regardless of whether private enterprises or private enterprises adjusted for group companies are studied.

Table 9 The change in the number of private enterprises when adjusted for groups (%), all sectors

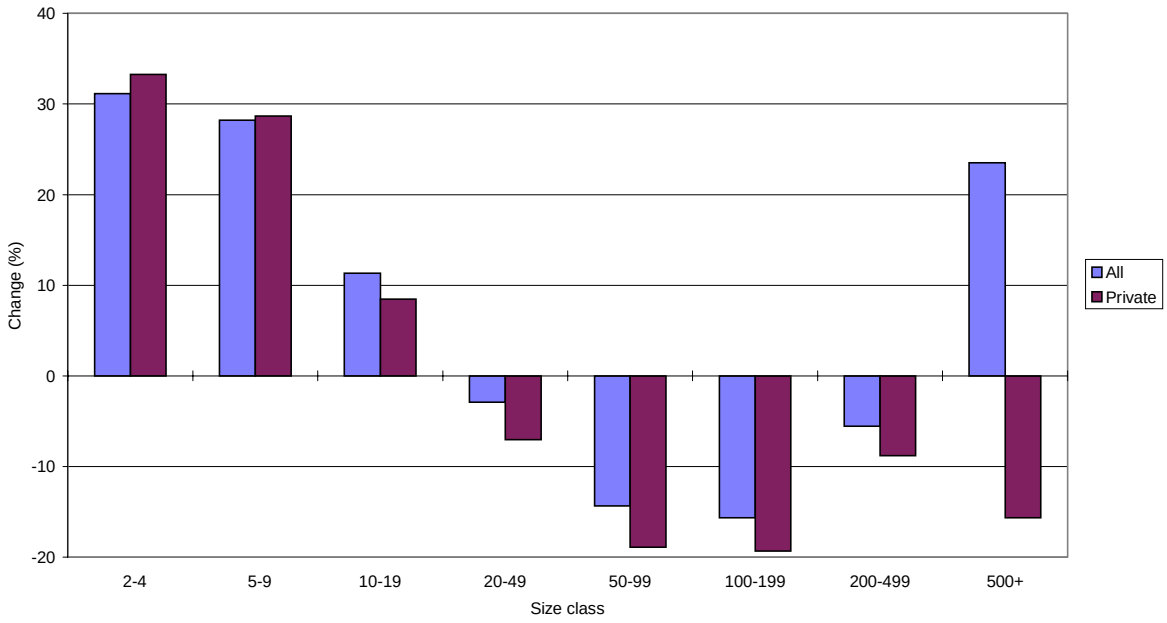
Size class	*0-1*	*2-4*	*5-9*	*10-19*	*20-49*	*50-99*	*100-199*	*200-499*	*500+*
1984	-1.21	-3.15	-6.12	-9.99	-17.06	-21.25	-26.27	-25.82	-14.62
1993	-3.42	-4.42	-6.58	-10.65	-17.37	-23.30	-27.09	-24.76	-18.55

Source: Statistics Sweden and own calculations.

Finally, the change in the number of enterprises in different size classes between 1972 and 1993 is plotted in Figure 4. The number of enterprises decreases the most in the 50-199 size

classes. Similar results are found when the changes between 1984 and 1993 are calculated (not shown here).

Figure 4 The change in the number of enterprises/1,000,000 inhabitants 1972-1993, all sectors



Note: The 0-1 size class is omitted.
Source: Statistics Sweden and own calculations.

3.3 MANUFACTURING

The share of the state-owned enterprises in different size classes in the manufacturing sector is shown in Table 10. For all years, the share of state-owned enterprises is disappearingly small, close to 0 in most size classes. It is only in the two largest size classes where the state plays a significant role. Generally, the share of state-owned enterprises is lowest in all size classes in 1972. The largest share of state-owned enterprises in the smallest size classes is observed in 1993, and the largest share of state-owned enterprises in the larger size classes is observed in 1984. In 1984, almost a fifth of the largest companies were state-owned.

Table 10 The share of state-owned enterprises (%), manufacturing

Size class	0-1	2-4	5-9	10-19	20-49	50-99	100-199	200-499	500+
1972	0.03	0.08	0.00	0.30	0.31	0.55	1.89	2.01	4.31
1984	0.06	0.08	0.05	0.37	1.38	2.82	4.91	8.81	19.01
1993	0.12	0.15	0.24	0.65	1.08	2.40	3.94	3.53	7.05

Source: Statistics Sweden and own calculations.

The number of enterprises strongly decreases in several size classes, most in the largest ones, when groups are taken into account (see Table 11). The changes are marginal in the smallest size classes, but it is not unusual that the number of enterprises decreases with up to a third in the larger size classes. The largest decrease is observed in the 100-199 size class in 1993, where the number of enterprises decreases with 44% due to the adjustment of groups.

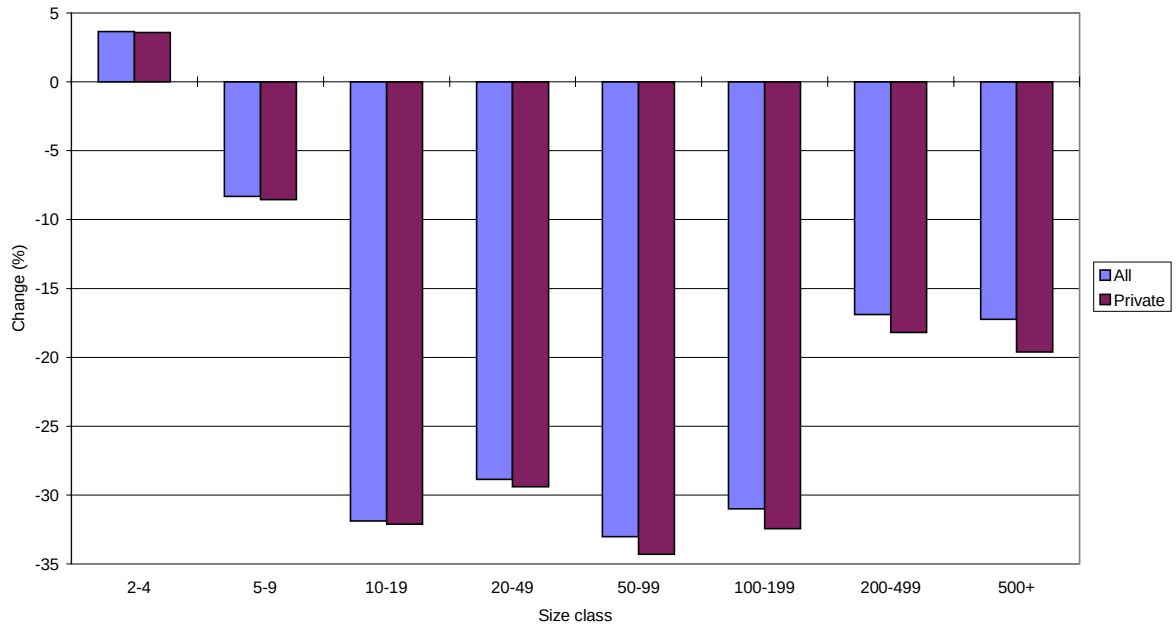
Table 11 The change in the number of private enterprises when adjusted for groups (%), manufacturing

Size class	*0-1*	*2-4*	*5-9*	*10-19*	*20-49*	*50-99*	*100-199*	*200-499*	*500+*
1984	-2.19	-3.72	-6.38	-10.18	-17.68	-27.23	-33.47	-39.00	-25.82
1993	-3.81	-4.83	-8.07	-11.99	-22.05	-34.33	-44.34	-32.89	-32.70

Source: Statistics Sweden and own calculations

In Figure 5, then, the change in the number of enterprises in different size classes between 1972 and 1993 is plotted. All enterprises and private enterprises are included. (Recall that it was not possible to adjust for group companies in 1972). The pattern is similar to the previous one. Once again the number of intermediate-sized firms decreases faster than the enterprises in the smaller and larger size classes.

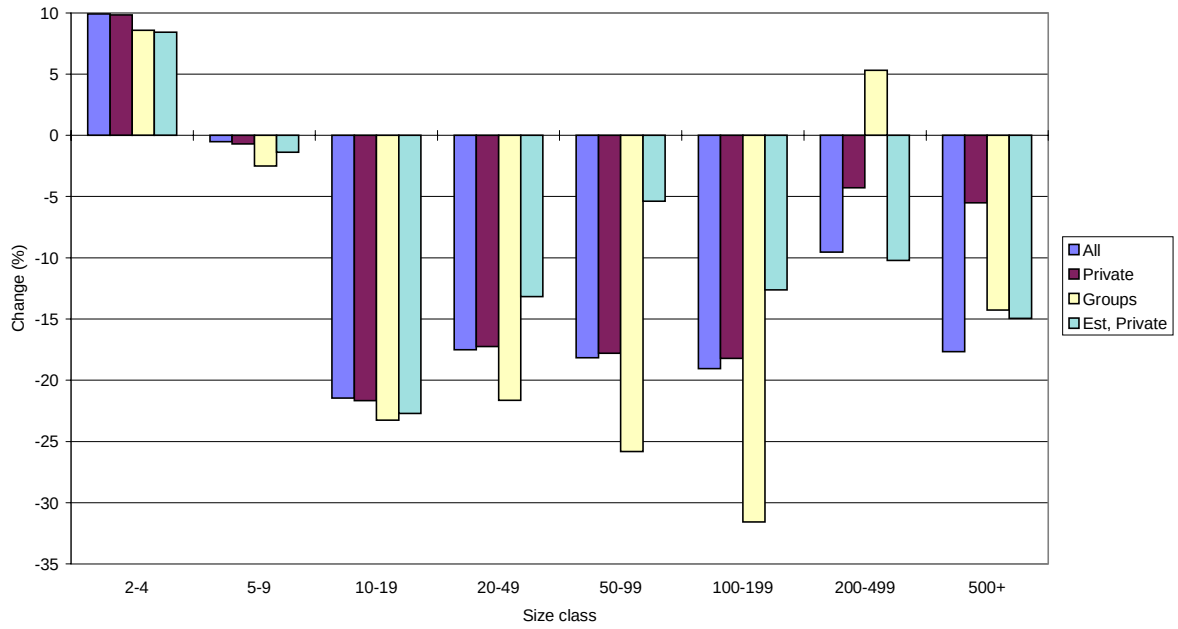
Figure 5 The change in the number of enterprises/1,000,000 inhabitants 1972-1993, manufacturing



Note: The 0-1 size class is omitted.
Source: Statistics Sweden and own calculations.

In Figure 6, the corresponding change between 1984 and 1993 is plotted. Here, data adjusted for group companies are also used. In the same figure, the change in the number of private establishments has also been plotted. The tendency is the same, irrespective of whether all enterprises, private enterprises or groups are analysed, the number of intermediate-sized enterprises has decreased the most. A conclusion, which can be drawn from the figure, is that the direction (positive or negative) and the size of the change is similar irrespective of whether all, private or groups are studied. The only exception is the 200-499 size class, where the change in the number of enterprises becomes positive when data are adjusted for group companies.

Figure 6 The change in the number of enterprises/1,000,000 inhabitants 1984-1993, manufacturing



Note: The 0-1 size class is excluded.
Source: Statistics Sweden and own calculations.

One explanation to the observed change in the number of groups (the legal unit) in different size classes could be that the number of establishments (the unit of production) in the corresponding size classes has changed due to changed conditions for the production, e.g. due to changed economies of scale. If this is the case, the quotient between the change in the number of groups and the change in establishment in different size classes should be close to 1. Large differences in this quotient would thus indicate that the change in the number of groups depends on something else than on changed conditions for production, for instance on changed conditions for ownership. In Table 12, it is seen that the quotient is close to 1 in the size classes 2-4, 10-19 and 500+, i.e. the number of groups and the number of establishments are changed at the same rate.[17] The number of groups has decreased faster than the number of establishments in the 5-9 and 20-199 size classes. The largest difference is found in the 50-99 size class and second largest difference in the 100-199 size class. The 200-499 size class is the only size class, where the change in the number of groups and the change in the number of establishments go in opposite direction. The number of groups has increased at the same time as the number of establishment has decreased, thence the negative quotient. Table 12

strengthens the impression that the number of intermediate sized enterprises has decreased more than the smaller and larger enterprises.

Table 12 The growth of groups/the growth of private establishments, manufacturing

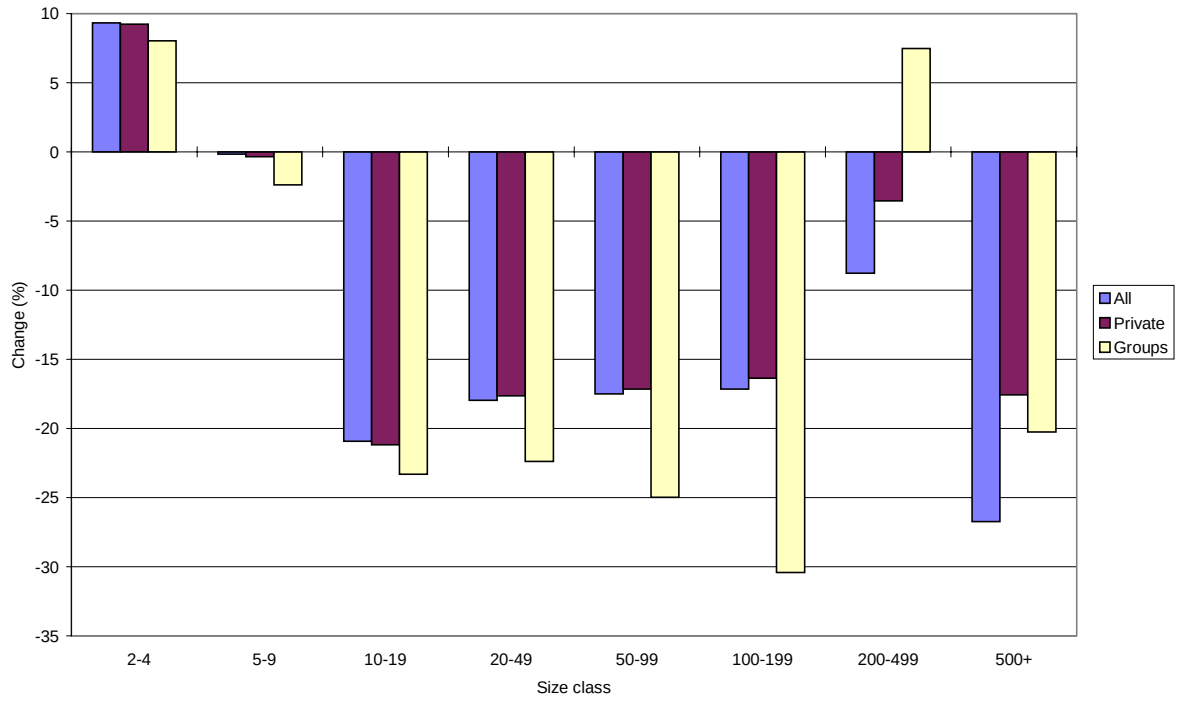
Size class	*2-4*	*5-9*	*10-19*	*20-49*	*50-99*	*100-199*	*200-499*	*500+*
Quotient	1.02	1.79	1.02	1.64	4.79	2.50	-0.52	0.95

Note: The 0-1 size class is omitted.
Source: Statistics Sweden and own calculations.

The change in employment in the different size classes is compared in Figure 7. On the whole, we find the same pattern as when the change in enterprises is analysed. The only larger difference is a more pronounced decrease in the largest size class. In Figure 3 above, another pattern appeared, when studying the change in employment. Then, the largest decrease of employment was observed in the largest size class, which could be interpreted as opposed to the conclusion that intermediate-sized enterprises showed the largest decrease of the number of enterprises. When public enterprises are excluded and when the data are adjusted for group companies, then the discrepancy disappears. Both measurements point in the same direction, namely that intermediate-sized enterprises have decreased relatively more.

[17] In the table, the quotient between the change in the number of groups and the change in the number of private establishments is shown. The quotient between the change in the number of private enterprises and the change in the number of private establishments gives similar results and are not reported.

Figure 7 The change in employment/1,000,000 inhabitants 1984-1993, manufacturing



Note: The 0-1 size class is omitted.
Source: Statistics Sweden and own calculations.

3.3.1 The size distribution of firms and employment

The size distribution of private firms and employment in manufacturing adjusted for groups are shown in Table 13 and Table 14. There is a significant coherence between size class and the distribution of firms. The smaller size class the larger share of firms. About 40% of the firms are in the 2-4 size class and about 1% are in the largest one.[18] Firms in the 2-9 and firms in the 200-499 size classes have increased their shares of the total number of firms. The shares of intermediate and large-sized firms have declined and the decrease is larger for the intermediate-sized firms. In the 50-99 and the 100-199 size classes the shares are reduced by about one fifth and one fourth, respectively.

Even though there are few large-sized enterprises, they dominated employment. Close to two thirds of the work-force in manufacturing were employed in large-sized firms. There is a large jump to the 200-499 size class, where less than 10% of the work-force was employed. Less than 1% was employed in the smallest size class. The shares of the 0-9 and 200-499 size classes increased between 1984 and 1993. The shares of intermediate and large-sized enterprises declined and the decrease was larger in the intermediate size classes. Thus, the

[18] Observe that the numbers are strongly affected by excluding the 0-1 size class from the analysis.

changes in the size distribution of employment is similar to the changes in the size distribution of enterprises.

Table 13 The size distribution of private enterprises (%), manufacturing

Size class	*2-4*	*5-9*	*10-19*	*20-49*	*50-99*	*100-199*	*200-499*	*500+*	*Total*
1984	37.31	24.61	17.51	11.95	4.27	2.11	1.20	1.03	100
1993	43.06	25.51	14.29	9.96	3.37	1.53	1.34	0.94	100
Change (%)	15.41	3.66	-18.42	-16.70	-21.14	-27.25	11.94	-8.86	

Note: Data are adjusted for groups. The 0-1 size class is excluded due to data problems.
Source: Statistics Sweden and own calculations.

Table 14 The size distribution of private employment (%), manufacturing

Size class	*0-1*	*2-4*	*5-9*	*10-19*	*20-49*	*50-99*	*100-199*	*200-499*	*500+*	*Total*
1984	0.38	1.96	3.06	4.46	6.78	5.54	5.38	6.94	65.50	100
1993	0.55	2.59	3.65	4.18	6.43	5.07	4.58	9.12	63.84	100
Change (%)	44.62	32.01	19.27	-6.31	-5.15	-8.32	-14.97	31.33	-2.54	

Note: Data are adjusted for groups.
Source: Statistics Sweden and own calculations.

3.4 CONCLUSIONS

Looking at the number of firms, the share of companies owned by the state is small in Sweden, irrespective of sector, except in electricity (ISIC 4). Firms owned by the Swedish state are large, though. In 1993, 45% of the total Swedish work-force was employed in state-owned enterprises, close to twice as many as in 1972. In community services (ISIC 9) and electricity (ISIC 4), state-owned enterprises employed some 85% of the work-force.

Excluding state-owned enterprises from the industry statistics as well as adjusting the data for group companies, do not change the main finding from the previous section. The number of intermediate-sized companies in manufacturing has still decreased more than the number of smaller and larger enterprises. Similar results are found when the size distribution of private firms and private employment adjusted for groups are studied. The share of intermediate-sized enterprises and their share of employment in manufacturing have declined since the early 1970s.

4. THE NUMBER AND THE SIZE DISTRIBUTION OF FIRMS IN 12 EUROPEAN COUNTRIES, 1983-1991

4.1 THE DATA

In the international comparison data from the three reports *Enterprises in Europe I*, *II* and *III* are used. The first report in the series is the *first* source of information which makes it possible to make a comparison of the small business sector in the European Union (Commission of the European Communities, 1990). The data in the reports are provided by Eurostat and the reports are written by the Commission of the European Communities. From the statistical authorities in the countries covered in the surveys, Eurostat requested information about four variables; the total number of enterprises, total employment, turnover (total sales) and value added at factor costs. Each of the four variables was to be broken down by employment size band and sector of activity. Several of the countries classify economic activity according to their own national standards. To make comparison possible, Eurostat reclassified all data to the classification system used in the European Community NACE[19] 1970 - the official general industrial classification of economic activities within the European Communities. In the NACE classification system economic activities are divided into 10 divisions (one-digit level), which in their turn are sub-divided into industry classes (two-digit level), groups (three-digit level) and, finally, sub-groups (four-digit level). In the reports, the number of enterprises within divisions (sector of activity) and size classes are reported. When possible, data are broken down into industry classes. Enterprises are divided into the size classes micro, small, medium and large, where enterprises with 0-9 employees are defined as micro enterprises, enterprises with 10-99 employees as small, enterprises with 100-499 employees as medium and, finally, enterprises with 500 and more employees as large. The first report covers the years 1983 and 1986, the second 1988 and 1989, and the third 1990 and 1991. In the first report, the number of enterprises in different size classes is not reported. Instead, the total number of enterprises and the percentage distribution of the number of enterprises in the different size classes is reported for each division. Combining these pieces of information, it is possible to compute the number of enterprises in the different size classes, which is made in this study. The ambition in the reports is to cover all companies in all sectors, with the exception of the primary sectors, i.e. agriculture, hunting, forestry and fishing (NACE 0). Enterprises active in non-market services and public administration are also

[19]Nomenclature Générale Activités Economiques dans les Communautés Européennes.

excluded, e.g. county councils and municipalities. Note that state-owned enterprises active in other sectors, e.g. manufacturing, are included. Enterprises with a turnover less than a certain limit are excluded as well.[20] In 1990, more than 14 million enterprises were included in the investigation.[21]

The data suffer from some defects and the methodological problems are described and discussed in the reports. In some cases it has been a problem to reclassify the national enterprise statistics to NACE. Some countries do not report enterprises, but establishments (or some other unit). Belgium, Denmark, Spain, Italy and Luxembourg have also produced their data using other sources in the first report than in the second and third.[22] The coverage of the sectors, size classes and years are not complete in all countries. Some countries do not report data for the years used in the report either. In Table 15, the variable (enterprise, establishment, etc.), the coverage of sectors and the reported years for the different countries are shown.

[20] The limit is different in different countries.
[21] Commission of the European Communities (1994, vol. I, p. 4).
[22] Commission of the European Communities (1992, p. A2).

Table 15 Coverage of data

Country	Variable (as reported in the third report)	Coverage of sectors (as reported in the third report)	1983	1986	1988	1989	1990	1991
Belgium	VAT-unit	All market sectors liable to VAT	x	x	x	x	x	x
Denmark	Number of legal units (close to enterprise)	All market sectors liable to VAT	1)	1)	x	x	x	x
Germany	Enterprise 2)	Not NACE 15, 71, 79 and 96	x	x	x		x	
Greece	Establishment	NACE sectors 1-4 and 69	3)	3)	x	x	x	x
Spain	Enterprise	Not libraries, health and veterinary services etc.	4)	x	x	x	x	x
France	Enterprise	All sectors except certain non-profit making activities	x	x	x		x	
Ireland	Establishment	NACE divisions 1 to 5	5)	x	x		x	
Italy	Enterprise	All sectors, except NACE 9 in 1988 and 1989.	x	x	x	x		
Luxembourg	Enterprise	All market services	6)	6)	6)		x	x
The Netherlands	Economic unit	In services, only private sectors are included		x	x		x	
Portugal	Enterprise 7)	All sectors		8)	x	x	x	x
The United Kingdom	Enterprise 9)	All sectors except NACE 85	x	x	x	x	x	x
Austria	Establishment	ISIC 21 to 42 and 50			x		x	
Finland	Enterprise	All market sectors with minor exceptions			x	x	x	x
Iceland	Enterprise	All sectors, with minor exceptions.			x	x	x	
Liechtenstein	Local Units	All industries and services						x
Norway	Enterprise 10)	All market sectors, with a few exceptions			x	x	x	
Sweden	Enterprise	All non-financial enterprises in the corporate sector.			x	x	x	x
Switzerland	Enterprise	All industries and services						x

1) 1980,1985
2) An estimate based on the Census of Workplaces 1987.
3) 1978, 1984.
4) 1985.
5) 1980, 1987.
6)1980, 1985, 1987.
7) In Eurostat (1990) the reporting unit was establishments.
8) 1987.
9) An estimate derived from the VAT unit.
10) In Eurostat (1992) reporting unit was establishment.
Source: Eurostat (1990, 1992 and 1994).

In this study Greece, Ireland, the Netherlands, Austria, Iceland, Liechtenstein and Switzerland are excluded from the analysis. Greece, Ireland and Austria use another reporting unit than enterprise and have deficient coverage in years and/or sectors. In the Netherlands, another reporting unit is used and the data are incomplete in size classes and sector of activities. Belgium and Denmark also use another reporting unit, but have good coverage and are therefore included. Iceland and Switzerland use enterprise as the reporting unit, but have bad

coverage in years or sectors. For Iceland, data do not cover medium and large enterprises. For Switzerland, data are only reported for 1991. In total, data from 19 European countries are reported in the reports from Eurostat. After exclusion, 12 countries remain in this study.

For a few countries, very large changes in the number of enterprises in some size classes are reported. The changes are so large that they hardly reflect reality. They are rather statistical artefacts. Thus, for this reason the 1980 and 1985 values in all sectors in the small, medium and large size classes for Denmark are excluded. It could be discussed if further exclusions should be made due to extreme values, but it is chosen not to do so.

A more comprehensive discussion of the methodological problems are made in the three reports from the Commission of the European Communities. From the reports, it is clear that all results below must be interpreted cautiously.

4.1.1 A comparison of Swedish data as reported in Eurostat and in CFAR

Statistics Sweden has provided Eurostat with data based on the Enterprises Financial Accounts survey (EFA), which contains detailed financial information about the enterprises, e.g. data on turnover and value added. However, sole-proprietorships, enterprises active in the financial sector, county councils etc. are excluded in the EFA. The data are also reported in such a way that it is impossible to distinguish the micro and small size classes. In several size classes and industries, the number of enterprises are not reported. Moreover, Sweden is not included in the first report from Eurostat.

If the main purpose is to compare the number of enterprises, the CFAR data, used in Section 3 above, are a better source of information than the EFA data, since they cover all enterprises.[23] Data in the CFAR are not converted to the NACE-classification system, which makes a disaggregated analysis of the differences in the number of enterprises in Sweden and the other European countries impossible. The problem becomes smaller with the level of aggregation of data and there is no problem at all when the total number of enterprises is studied. Since this paper studies the number of enterprises at a high level of aggregation this problem should be of less importance.[24] From this it follows that, at a high level of aggregation, the reported number of Swedish enterprises in the reports from Eurostat and in the CFAR should be about the same, with the exception of the enterprises mentioned above. A check of the validity of this assumption is to compare the number of Swedish enterprises reported in the reports from Eurostat with the number reported in the CFAR. Below, where it

[23] The information in the CFAR is quite limited, e.g. the register does not contain financial information. Therefore the EFA was used in the reports from Eurostat.

is possible, the difference between the reported number of Swedish enterprises in Eurostat and the CFAR are shown.

Table 16 The difference in the number of enterprises reported by Eurostat and in CFAR (%)

Year		0-19	20-49	50-99
1990	Difference, industrial sector	91.2	3.5	-4.4
	Difference, all sectors	155.3	13.9	42.6
1991	Difference, industrial sector	60.7	5.0	2.5
	Difference, all sectors	123.1	20.9	39.2

Note: The industrial sector is defined as NACE 1-4.
Positive numbers mean more enterprises in the CFAR.
It is not possible to make a more exhaustive comparison of the data in the CFAR with the data from Eurostat, since the number of enterprises in several size classes and industry classes are not reported by Eurostat.
Primary sectors are excluded.
Source: Eurostat, Statistics Sweden and own calculations.

A few observations in line with our assumptions can be made from the table. First, in all sectors, the CFAR reports more enterprises, which should be the case since financial enterprises, sole-proprietorships, county councils etc. are included in the CFAR, but not in Eurostat. Second, the difference in the reported number of enterprises in the 20-49 and 50-99 size classes in the industrial sector is small, which it should be, since financial enterprises and county councils etc. are excluded in the industrial statistics. In the size class with 0-19 employees/enterprise, there is a major difference in the reported number of enterprises in all sectors and in the number of enterprises in the industry.[25] This is explained by: (i) Sole-proprietorships are excluded in EFA and this has a large impact on the reported number of firms in the smallest size class. (ii) Enterprises with a turnover less than SKR 200,000 are excluded by Eurostat,[26] while the limit used in CFAR is SKR 30,000 before 1991. It can be noted that the difference decreases between 1990 and 1991, when the limit on turnover in the two sources of information becomes the same. These findings highlight important facts. Other countries in the reports from the Commission of the European Communities use different turnover ”thresholds”, when collecting and reporting the number of enterprises, e.g. for Germany firms with a turnover less than DM 20,000 are excluded.[27] They may also have similar problems concerning the coverage of sole-proprietorships. Since there are many more small than large firms, this has a great impact on the reported number of micro enterprises and thus also on the total number of enterprises in the different countries and in Europe as a

[24]The same conclusion is made in Commission of the European Community (1994, p. 226).
[25] For example, in 1990 Eurostat reports about 150 000 firms in the 0-19 size class, all sectors, while CFAR reports close to 400 000 firms in the same size class, all sectors (primary sectors excluded).
[26]Commission of the European Communities (1994, vol. II, p. 40).
[27]Ibid, p. 11.

whole. The large differences suggest that the reported total number of enterprises and the reported number of micro enterprises for a single country, as well for Europe as a whole, is most uncertain. This implies that all comparisons of the total number of enterprises and the number of micro enterprises between countries are hardly meaningful. This conclusion must in part also be true when calculating and using different measures of relations, e.g. the relation of micro and large enterprises or the average size of enterprises. Exclusion of firms according to different turnover-thresholds should be no problem in larger size classes.

The discussion so far reveals that there are serious statistical problems. To improve the reliability of our study, we have therefore done the following. First, we have excluded Greece, Ireland, the Netherlands, Austria, Liechtenstein, Switzerland, and Iceland from the analysis, either because they do not use enterprise as the reporting unit or because they have bad coverage of size classes, sectors or years. That leaves us with a total of 12 European countries, which are included in the study. (For Denmark, the 1980 and 1985 observations are excluded in the analysis of all sectors.) Second, for Sweden, the data in CFAR are used instead of EFA, since CFAR has a better coverage of enterprises and size classes. This exaggerates the total number of enterprises in Sweden compared to the total number of enterprises in the other countries, since enterprises active in non-market services and public administration are included in the Swedish data. There are no data published on the number of these firms, but a rough estimation is the number of state-owned enterprises in ISIC 9. Among other things, county councils and municipalities are registered in ISIC 9. In Table 17, the relation between the number of state-owned enterprises in ISIC 9 and the total number of enterprises in all sectors has been calculated, using the data set described in Section 3 above.

Table 17 Enterprises active in non-market services and public administration (%)

Size class	*Small*	*Medium*	*Large*
1984	2.29	8.25	37.94
1993	3.69	10.06	42.41

Note: This is an estimate using the number of state-owned enterprises in ISIC 9.
Source: Statistics Sweden and own calculations.

According to the estimation, the share of enterprises active in non-market services and public administration is almost negligible in the small size class, small in the medium size class, but substantial in the large size class. Therefore, the number of Swedish firms in the large size class, all sectors is reduced by 40%. Third, micro enterprises are excluded from the data, since the number reported probably are highly affected, and thereby most uncertain, for two reasons. First, different thresholds (size of turnover) are used in different countries when excluding

enterprises from the statistics. Second, for several countries, the enterprises in the 0 size class are excluded.

It is obvious that the interpretation of all results below must be made cautiously, even though some data are better than other. For example, the statistics for the industrial sector is more reliable than the statistics for the service sector.[28] In spite of this, the data can be used to get a first approximation and a starting point for further research.

4.2. The Number of Small, Medium and Large-sized Enterprises

Below, the number of enterprises/1,000,000 inhabitants in the small (10-99 employees), medium (100-499 employees) and large (500+ employees) size classes have been calculated. We have then ranked the countries according to the average number of enterprises in the different size classes. The analysis has been carried out for all sectors and for the industrial sector separately. Industry includes NACE 1-4 (Commission of the European Communities, 1990), i.e. extraction, manufacturing and energy, where manufacturing is dominating.[29]

4.2.1 Small-sized enterprises, all sectors

In the small size class, the average number of firms per 1,000,000 inhabitants in our 12 European countries was about 3,150 (see Table 18). Luxembourg reported the highest average number of enterprises/1,000,000 inhabitants (4,232) and France the lowest (2,260). On average, Luxembourg, Denmark, and Germany were the three countries with most small enterprises per capita. Sweden ended up as number 7, with an average of 2,928 small enterprises per 1,000,000 inhabitants.

[28]Commission of the European Communities (1990, p. vi).
[29]For Sweden, ISIC 2-4 (mining, manufacturing and electricity) are included in the industrial sector.

Table 18 The number of small-sized enterprises/1,000,000 inhabitants, all sectors

Country	1983	1986	1988	1989	1990	1991	Average	Rank
Germany	3946	3976	4070		3925		3979	3
France	2238	2151	2238		2412		2260	12
The United Kingdom	3298	3365	2818	2841	3158	3084	3094	6
Sweden	2665	2800	2918	3012	3101	3074	2928	7
Italy	5179	5041	2235	2289			3686	4
Spain	2270	2278	2681	2984	2802	2828	2641	10
Belgium	2235	2226	2460	2582	2328	2408	2373	11
Portugal		2598			3257	3507	3121	5
Denmark			5220	5182	3005	2934	4085	2
Luxembourg	3329	3532	4286		4808	5207	4232	1
Finland			2830	2920	2896	2549	2799	9
Norway					2854		2854	8
Total	25159	27968	31757	21810	34546	25590		
Average	3145	3108	3176	3116	3141	3199	3147	

Note: In the last two observations for Italy, NACE 9, other services is excluded.
The geographical coverage for Germany is the former Federal Republic of Germany.
Belgium and Denmark have other reporting units than enterprise, e.g. establishments.
The data for Belgium, Denmark, Spain, Italy and Luxembourg are produced using other sources of information in 1983 and 1986 than in the other years.
Primary sectors are excluded.
Source: Eurostat, Statistics Sweden and own calculations.

4.2.2 Medium-sized enterprises, all sectors

In the medium size class, the average number of enterprises/1,000,000 inhabitants was about 240 (see Table 19). Luxembourg, the United Kingdom, and Germany had most enterprises per capita in this size class. Again, Luxembourg was number one and was a real ”outlier”, with more than 30% more medium-sized firms than the second ranked country. The other countries were more clustered. Sweden had a better rank than in the small-firm class (number four). Italy had the lowest number of enterprises in this size class (121).

Table 19 The number of medium-sized enterprises/1,000,000 inhabitants, all sectors

Country	1983	1986	1988	1989	1990	1991	Average	Rank
Germany	282	283	276		274		279	3
France	182	175	172		190		180	10
The United Kingdom	321	380	264	269	287	279	300	2
Sweden	239	245	261	268	273	272	260	4
Italy	139	130	104	111			121	12
Spain	140	139	178	192	137	139	154	11
Belgium	218	202	207	213	177	181	200	8
Portugal		198			234	253	228	6
Denmark			289	301	199	199	247	5
Luxembourg	327	312	411		496	525	414	1
Finland			223	230	233	215	225	7
Norway					198		198	9
Total	1848	2065	2383	1585	2698	2062		
Average	231	229	238	226	245	258	238	

Note: See Table 18.
Source: Eurostat, Statistics Sweden and own calculations.

4.2.3 Large-sized enterprises, all sectors

Table 20 shows that the average number of enterprises/1,000,000 inhabitants was about 45 in the large size class. Here, Sweden had the highest rank, followed by the United Kingdom, Germany and Luxembourg. Sweden reported 59 enterprises/1,000,000 inhabitants on average, and Italy 19 (rank 12).

Table 20 The number of large-sized enterprises/1,000,000 inhabitants, all sectors

Country	1983	1986	1988	1989	1990	1991	Average	Rank
Germany	50	52	55		56		53	3
France	45	38	36		37		39	8
The United Kingdom	59	68	55	56	49	48	56	2
Sweden	54	60	61	61	60	58	59	1
Italy	21	21	16	17			19	12
Spain	18	19	27	28	22	22	23	11
Belgium	50	47	45	47	37	39	44	6
Portugal		28			32	36	32	10
Denmark			53	50	33	34	43	7
Luxembourg	36	36	63		66	65	53	4
Finland			51	52	55	51	52	5
Norway					34		34	9
Total	334	369	462	312	479	353		
Average	42	41	46	45	44	44	44	

Note: See Table 18.
Source: Eurostat, Statistics Sweden and own calculations.

4.2.4 Small-sized enterprises, industry

The average number of small enterprises/1,000,000 inhabitants in industry was about 900 (see Table 21). Italy, Portugal, and Denmark reported the largest number of enterprises per capita in this size class and Luxembourg, France and the United Kingdom the smallest. Sweden ranked as number 8.

Table 21 The number of small-sized enterprises/1,000,000 inhabitants, industry

Country	1983	1986	1988	1989	1990	1991	Average	Rank
Germany	1005	994	1203		1170		1093	4
France	670	646	649		689		663	10
The United Kingdom	590	613	688	672	637	603	634	11
Sweden	750	775	782	784	785	746	770	8
Italy	1651	1374	1341	1390			1439	1
Spain	958	925	975	1042	1058	1145	1017	5
Belgium	713	703	663	687	678	684	688	9
Portugal		1084			1449	1559	1364	2
Denmark	1345	1516	1305	1295	971	955	1231	3
Luxembourg	495	546	638		669	698	609	12
Finland			803	832	800	711	787	7
Norway			977	933	775		895	6
Total	8177	9177	10024	7634	9681	7101		
Average	909	918	911	954	880	888	910	

Note: See Table 18.
Source: Eurostat, Statistics Sweden and own calculations.

4.2.5 Medium-sized enterprises, industry

The average number of medium-sized enterprises/1,000,000 inhabitants in the industrial sector for our European countries was a bit more than 100 (see Table 22). Portugal reported the highest number of enterprises per 1,000,000 inhabitants (149) and Italy the lowest (73). Germany is ranked as number 2 and Sweden as number 5.

Table 22 The number of medium-sized enterprises/1,000,000 inhabitants, industry

Country	1983	1986	1988	1989	1990	1991	Average	Rank
Germany	145	142	144		145		144	2
France	94	88	81		87		87	9
The United Kingdom	87	149	75	78	75	71	89	8
Sweden	102	108	110	113	114	109	109	5
Italy	70	70	75	79			73	12
Spain	78	75	74	77	67	79	75	11
Belgium	112	107	89	90	94	93	97	7
Portugal		125			155	167	149	1
Denmark	146	174	132	140	111	111	136	4
Luxembourg	140	139	142		139	142	140	3
Finland			101	103	103	99	101	6
Norway			84	76	98		86	10
Total	973	1177	1108	756	1187	871		
Average	108	118	101	95	108	109	106	

Note: See Table 18.
Source: Eurostat, Statistics Sweden and own calculations.

4.2.6 Large-sized enterprises, industry

The average number of large industrial enterprises/1,000,000 inhabitants in our European countries was a bit more than 20. Germany and Sweden had most large enterprises per capita, while Spain had the least.

Table 23 The number of large-sized enterprises/1,000,000 inhabitants, industry

Country	1983	1986	1988	1989	1990	1991	Average	Rank
Germany	35	36	33		34		35	1
France	22	20	18		19		20	10
The United Kingdom	28	34	21	22	22	21	25	5
Sweden	32	33	35	36	34	33	34	2
Italy	10	11	11	12			11	11
Spain	10	11	10	10	10	10	10	12
Belgium	31	29	21	21	21	21	24	6
Portugal		18			21	22	20	8
Denmark	19	21	24	22	18	18	20	9
Luxembourg	22	25	25		26	26	25	4
Finland			26	27	29	27	27	3
Norway					21		21	7
Total	209	237	225	150	256	177		
Average	23	24	22	21	23	22	23	

Note: See Table 18.
Source: Eurostat, Statistics Sweden and own calculations.

To sum up, the rank of the countries are summarised in Table 24.

Table 24 Summary of ranking

	All sectors			Industry		
Country	Small	Medium	Large	Small	Medium	Large
Germany	3	3	3	4	2	1
France	12	10	8	10	9	10
The United Kingdom	6	2	2	11	8	5
Sweden	7	4	1	8	5	2
Italy	4	12	12	1	12	12
Spain	10	11	11	5	11	11
Belgium	11	8	6	9	7	6
Portugal	5	6	10	2	1	8
Denmark	2	5	7	3	4	9
Luxembourg	1	1	4	12	3	4
Finland	9	7	5	7	6	3
Norway	8	9	9	6	10	7

Source: Eurostat, Statistics Sweden and own calculations.

4.3 The Size Distribution of Firms

In Table 25, the average number of enterprises is used to calculate the size distribution of firms in all sectors and industry. The absolutely majority of firms, more than 90%, are small. The medium-sized firms make up to about 7%, and large firms to about 1%, of the total number of firms. There are more medium-sized and large firms in industry, about 10% and 2%, respectively.

If we look at small enterprises, Italy, Spain, and Denmark report the largest shares, while the United Kingdom, Luxembourg and Sweden report the smallest shares. In the medium size class, Luxembourg, the United Kingdom, and Sweden have the highest rank while Italy and Spain have the lowest. Sweden, Finland and Belgium have the largest shares of large companies, while Italy and Spain have the smallest.

The ranking in industry is similar to that in all sectors. Italy and Spain have the largest shares of small firms, and Luxembourg and Sweden have the smallest shares. Sweden is now ranked as number 11 (10 in all sectors). In the medium size class, Luxembourg, Belgium and Sweden report the largest shares of firm. Sweden has the largest share of large industrial firms, followed by the United Kingdom and Luxembourg. Italy and Spain report the smallest shares of medium and large-sized industrial enterprises.

Table 25 The size distribution of firms (%)

	All sectors				Industry			
Country	Small	Medium	Large	Tot	Small	Medium	Large	Tot
Germany	92.3 (5)	6.5 (8)	1.2 (6)	100	86.0 (7)	11.3 (6)	2.7 (6)	100
France	91.2 (7)	7.3 (6)	1.6 (5)	100	86.1 (6)	11.3 (5)	2.6 (7)	100
UK	89.7 (12)	8.7 (2)	1.6 (4)	100	84.8 (10)	11.9 (4)	3.3 (2)	100
Sweden	90.2 (10)	8.0 (3)	1.8 (1)	100	84.3 (11)	12.0 (3)	3.7 (1)	100
Italy	96.3 (1)	3.2 (12)	0.5 (12)	100	94.5 (1)	4.8 (12)	0.7 (12)	100
Spain	93.7 (2)	5.5 (11)	0.8 (11)	100	92.2 (2)	6.8 (11)	0.9 (11)	100
Belgium	90.7 (9)	7.6 (4)	1.7 (3)	100	85.0 (9)	12.0 (2)	3.0 (5)	100
Portugal	92.3 (6)	6.8 (7)	0.9 (10)	100	89.0 (4)	9.7 (9)	1.3 (10)	100
Denmark	93.4 (3)	5.7 (10)	1.0 (9)	100	88.7 (5)	9.8 (8)	1.5 (9)	100
Luxembourg	90.1 (11)	8.8 (1)	1.1 (7)	100	78.7 (12)	18.1 (1)	3.2 (3)	100
Finland	91.0 (8)	7.3 (5)	1.7 (2)	100	86.0 (8)	11.1 (7)	3.0 (4)	100
Norway	92.5 (4)	6.4 (9)	1.1 (8)	100	89.3 (3)	8.6 (10)	2.1 (8)	100
Average	91.8	6.9	1.3	100	87.6	10.2	2.2	100

Note: Rank in parenthesis.
Source: Eurostat, Statistics Sweden and own calculations.

4.4 Discussion and Conclusions

We have found large differences in the number of enterprises per capita and in the size distribution of firms in the 12 European countries included in this study. This is in line with previous research (see e.g. Keeble and Wever, 1986, Davidsson et al., 1994a,b and The European Observatory for SMEs, 1995). Germany seems to have among the largest number of enterprises/inhabitant in all three size classes, both in all sectors and in industry. The differences between Germany and Sweden seem to be quite large - about 40% more industrial firms per capita in the small size class, and one third more in the medium size class. A very

rough calculation suggests that this corresponds to about 140,000 jobs in small industrial enterprises and 85,000 jobs in medium enterprises, altogether more than 200,000 jobs.[30]

If Germany is characterised by many enterprises in the different size classes, France shows the opposite picture. In our sample, France has a low number of enterprises in all size classes, both in the economy as a whole, as well as in the industrial sector. The results indicate that the size of a country is not a major determinant of the number or size distribution of firms.

Northern European countries have both relatively more and relatively larger firms per capita than Southern European countries. This result would probably have been strengthened if micro enterprises had been included in the analysis.

It is sometimes claimed that Sweden has fewer small and medium-sized enterprises per capita than other European countries and that large enterprises play a relatively more dominating role in Sweden. For instance, in SOU 1992:19 (p. 308), it is reported that large firms accounted for more than 60% of employment in Sweden in 1986. Sweden was compared to Germany, France, the United Kingdom, the Netherlands and Denmark. The large enterprises' share of employment in these countries was reported to be 35.8, 39.6, 30.0, 41.3 and 17.6 percent, respectively. Thus, according to that study, the share of employment in large enterprises was almost twice as large in Sweden as in Germany. In The European Observatory for SMEs (1995) Sweden is reported to have the highest average enterprise size of all countries (see Table 26).

[30]Average number of employees in a small (10-99 employees) enterprise = 54.5
Average number of employees in a medium (100-499 employees) enterprise = 299.5
Approximate population in Sweden 8,500,000 inhabitants.
Average number of small sized industrial enterprises/ 1,000,000 = 770
Average number of medium sized industrial enterprises/ 1,000,000 inhabitants = 109
Approximate difference between Germany and Sweden in the average number of small sized firms in the industrial sector = 40%.
Approximate difference between Germany and Sweden in the average number of medium sized firms in the industrial sector = 30%
A rough calculation of how many jobs the difference corresponds to in the Swedish industrial sector, small firms: 54.5*770*8.5*0.4 = 140,000
A rough calculation of how many jobs the difference corresponds to in the Swedish industrial sector, medium firms: 299.5*109*8.5*0.3 = 85,000

Table 26 Size-class structure by country, 1990

	Enterprise (x 1,000)	Average Enterprise size	Size-class dominance	SMEs relative labour productivity
Belgium	490	6	SME	108
Denmark	170	9	SME	100
France	1,980	7	SME	90
Germany	2,290	9	SME	102
Greece	690	3	Micro	94
Ireland	130	8	SME	91
Italy	3,920	4	Micro	90
Luxembourg	15	10	SME	94
Netherlands	420	10	SME	99
Portugal	600	5	SME	88
Spain	2,460	4	Micro	92
United Kingdom	2,630	8	SME	83
EU-12	15,780	6	SME	91
Austria	180	12	SME	79
Finland	110	12	SME	98
Norway	130	10	SME	102
Sweden	150	13	SME	95
EFTA-4	570	12	SME	93
Europe-16	16,350	6	SME	92

Source: The European Observatory for SMEs (1995, p. 47).

Opposite results are reported in NUTEK (1994a); the average enterprise size is reported to be among the lowest in the European Union and the large enterprises' share of employment in Sweden is reported to be less than the average in the European Union (see Table 27).

Table 27 Company Structure in EU and Sweden

Country	Number of enterprises (1000)	Enterprises/ 1000 inhabitants	Average size of enterprise	Share of employment in different size classes			
				0-9	10-99	100-499	500
Sweden	420	48	5	30.1	26.8	15.9	27.2
EU, total	15840	49	6	31.8	24.9	14.9	28.1
Belgium	532	54	5	28.0	24.2	16.7	31.1
Denmark	168	33	9	31.2	32.9	16.2	19.6
France	1976	35	7	28.1	25.9	15.0	31.1
Germany	2291	37	9	18.8	26.8	16.9	37.5
Greece	690	69	3	60.5	20.1	10.4	9.0
Ireland	138	39	6	33.8	30.6	18.5	17.0
Italy	3917	68	4	51.0	22.4	9.9	16.5
Luxembourg	15	41	10	18.5	32.3	24.7	24.4
Holland	419	28	10	27.9	25.8	18.8	27.5
Portugal	603	59	5	33.8	30.9	17.0	18.2
Spain	2461	63	4	43.2	26.6	12.5	17.8
The United Kingdom	2630	46	8	26.9	22.0	17.1	34.0

Note: Private enterprises, primary sectors excluded.
Source: NUTEK (1994a, p. 23).

The reason for the contradictory results about Sweden is due to the fact that people have used different sources of information, which differ in coverage of enterprises, sectors etc. In SOU 1992:19, the share of employment in large enterprises are compared using data from Statistics Sweden (CFAR) for Sweden and data from Eurostat for the other countries. This overestimates large enterprises' share of employment in Sweden compared to other countries, since enterprises active in non-market services and public administration are included in the Swedish data, but not in the data for the other countries. Thus, it can be concluded that employment in Sweden according to large enterprises compared to other countries is overestimated in SOU 1992:19.

In The European Observatory for SMEs (1995), data provided by Eurostat were used. As discussed before in this paper, this data set underestimates the number of small firms in Sweden and, thus, overestimates the average Swedish enterprise size, since it omits a large number of small firms (sole-proprietorships). The European Observatory for SMEs (1995) reports a total number of 150,000 firms in Sweden and NUTEK (1994a) reports 420,000 private firms, primary sectors excluded. NUTEK (1994a), on the other hand, underestimates the average enterprise size and the share of employment in large firms in Sweden compared to other countries, since state-owned enterprises are excluded from their study.

Henrekson (1996) discusses and questions some of the results in NUTEK (1994a). For instance, he points out that the average enterprise size is reported to be 80% higher in Denmark than in Sweden. According to him, this result is not in line with other studies. The critique is an example of how difficult it is to make international comparisons. In particular, two factors that have large effects on the total number of enterprises (and thus on the average enterprise size) are pointed out in this study. First, there are different practices of including enterprises in the 0 size class. Second, different thresholds on turn-over are used in different countries for the inclusion of firms in the statistics. For Sweden, it is shown that both factors have great impact on the number of firms. Thus, international comparisons of the average enterprise size are most uncertain, perhaps it is preferable to avoid them.

Our analysis shows that Sweden does have many large-sized enterprises compared to other countries. Studying the number of firms in twelve European countries, Sweden has most enterprises per capita in the large size class (second most in industry). Looking at the size distribution of firms, Sweden has most large firms. However, Sweden does not seem to have fewer medium-sized enterprises than other European countries. Sweden is ranked above average, both when the number of enterprises and the distribution of enterprises are analysed. Sweden has somewhat less small enterprises than the average European country.

Finally, it should be noted that all results concerning the number of enterprises in different size classes, the importance of large firms etc. are biased in the sense that groups are not taken into consideration. This is not possible to do in international comparisons, since Sweden is the only country having a register of group companies (NUTEK, 1994a, Henrekson, 1996).

5. CONCLUDING REMARKS

This study examines the changes in the number and in the size distribution of Swedish firms since the end of the 1960s. It also compares the situation in Sweden with that in 11 other European countries. It is found that the number of firms in the size class 20-199 employees has grown more slowly in Sweden than the number of firms in smaller and larger size classes between 1968 and 1993. During that period, manufacturing lost in importance and was replaced by service industries. In manufacturing, the number of firms have declined in all size classes except in the smallest one. Particularly, in the size class 10-199 employees the decrease has been sharp, about 30%. Analysing the size distribution of firms, enterprises with 10-199 employees have decreased their share of the total number of firms. This change is observed irrespective of whether all enterprises, private enterprises, or private enterprises adjusted for groups are studied. However, the investigation also shows that the number of micro-sized firms (0-9 employees) in Sweden has not grown more slowly than the number of firms in the other size classes. In fact, between 1968 and 1993 the number of micro-sized firms were the most fast growing ones.

In our international comparison of firm size, large differences in the number of enterprises per capita are found in Europe. Generally, countries in Southern Europe have smaller firms than countries in Northern Europe.

Data indicate that Sweden has less small firms (10-99 employees) and more large firms (500+ employees) than other European countries.[31] Of our 12 European countries, Sweden had the largest number of large-sized enterprises per capita (the second largest looking only at industry). In the small size class, Sweden had fewer enterprises per capita than the average European country. However, we find no support for the standard claim that Sweden has fewer medium-sized enterprises than other European countries.

[31] Note that the small size class can be divided into the 10-19, 20-49 and 50-99 size classes. In the investigation of the Swedish development, the number of firms in these three size classes were found to have grown less than the number of firms in most other size classes.

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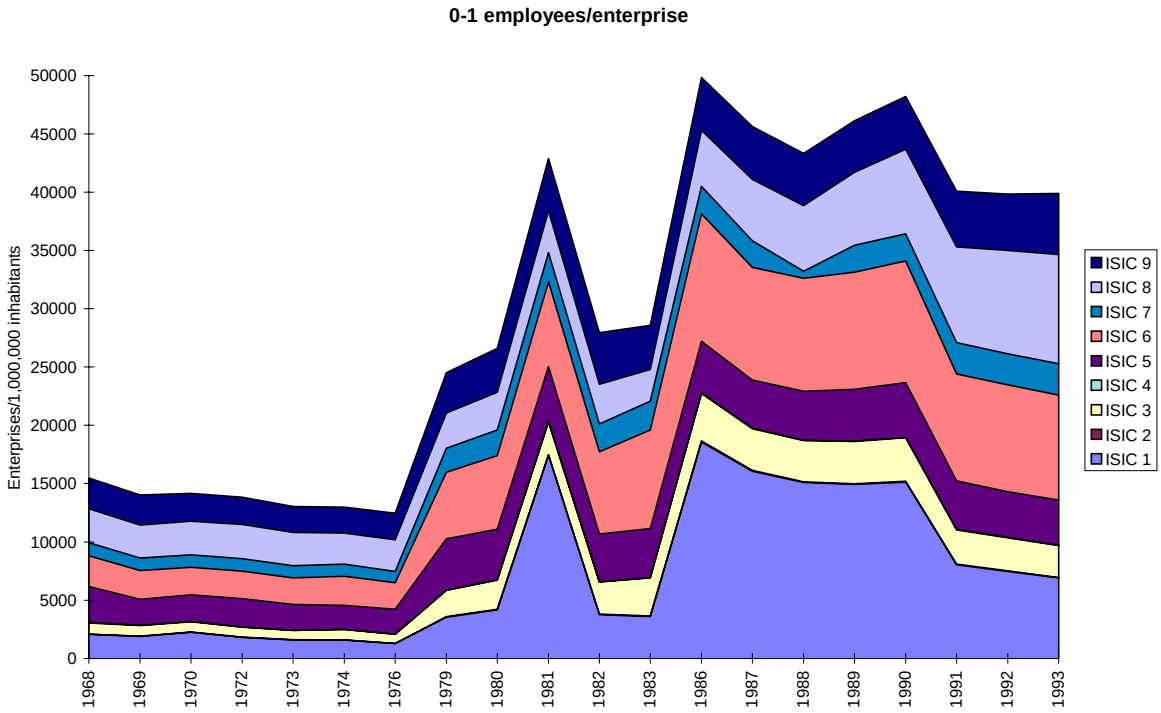
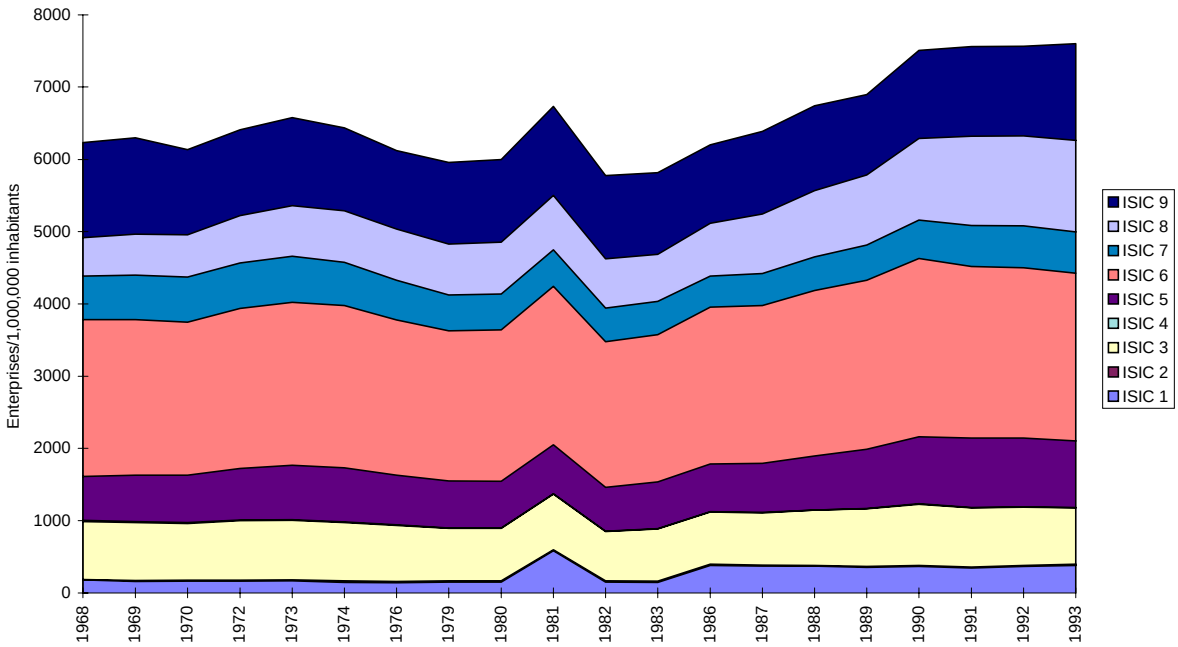
APPENDIXES

APPENDIX 1. THE NUMBER OF ENTERPRISES IN SWEDEN 1968-1993, ALL SECTORS

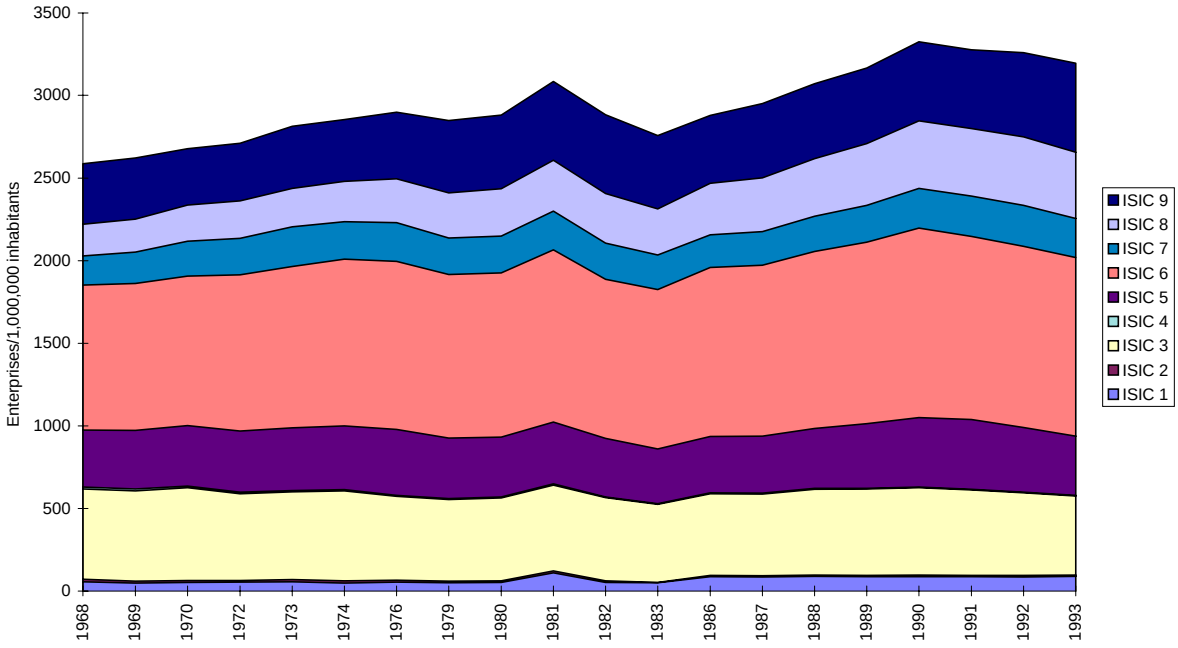
Note: After 1979, county councils and municipalities are included in the data (in ISIC 9). The data concerning the 0-1 size class are uncertain, due to ,among other things, changes in the limit on turnover for including firms into the statistics (see section 2.1).
Due to the small number of enterprises in ISIC 2 and ISIC 4, these divisions are difficult to distinguish in the figures.
Source: Statistics Sweden and own calculations.



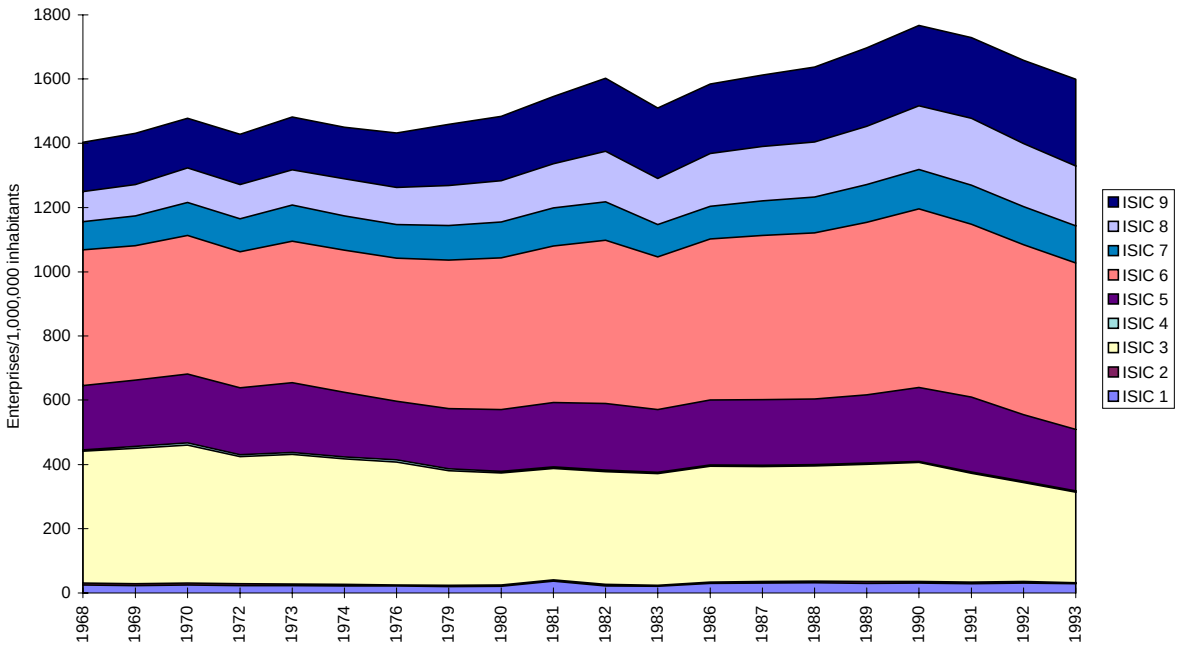
2-4 employees/enterprise



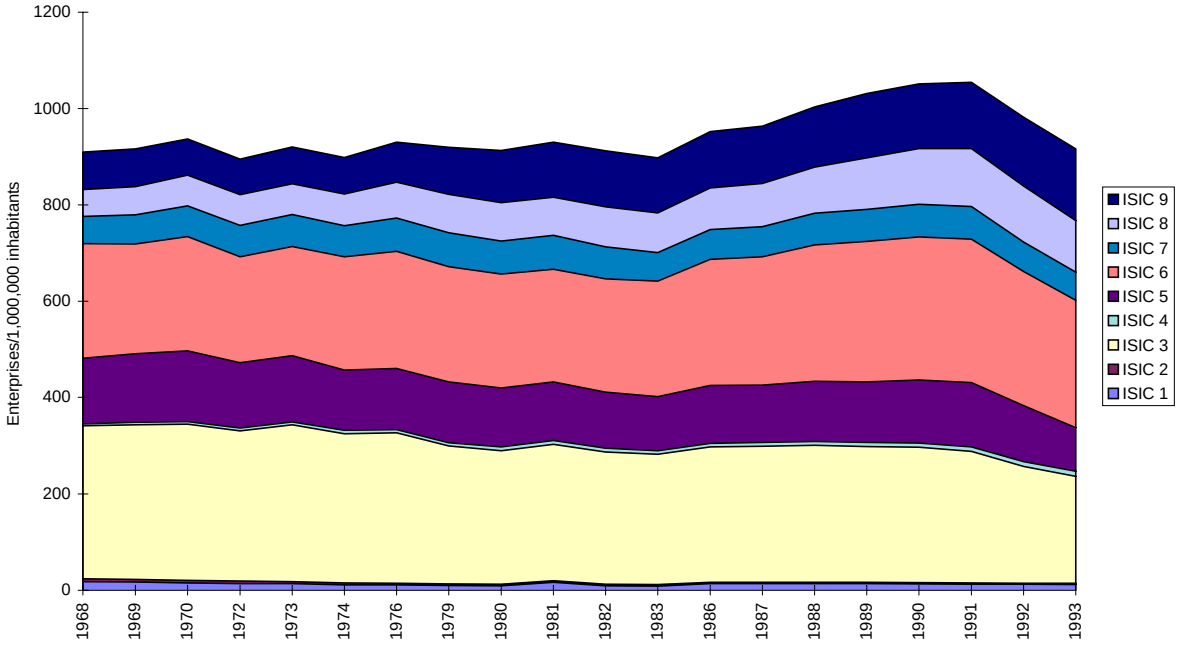
5-9 employees/enterprise



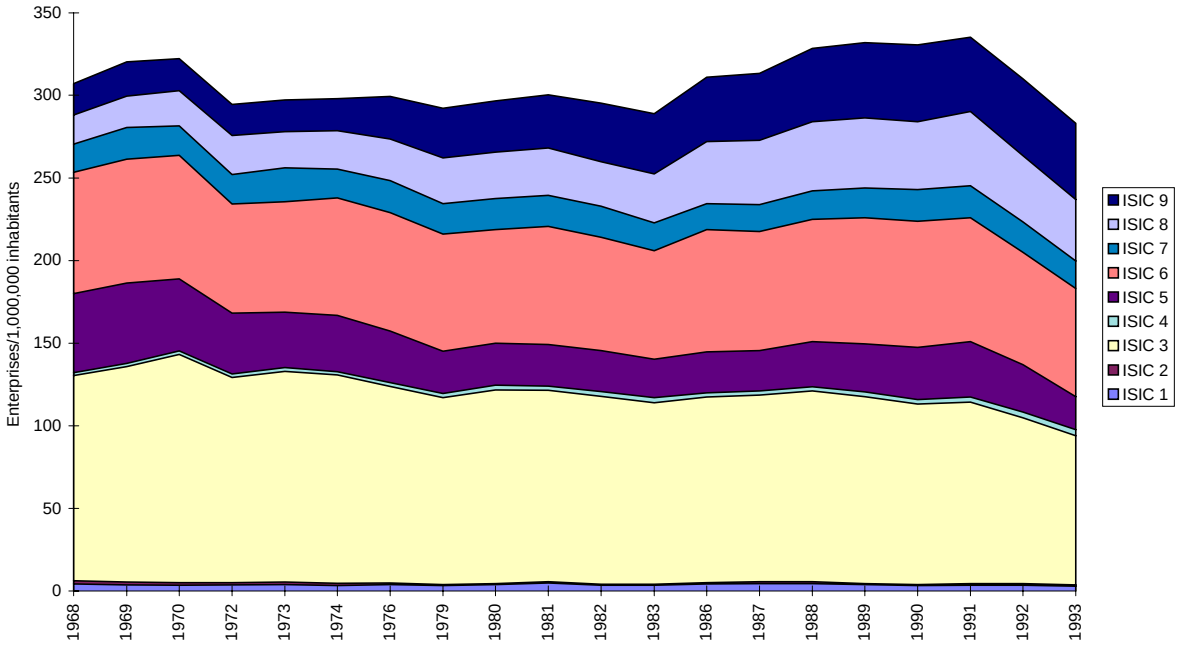
10-19 employees/enterprise



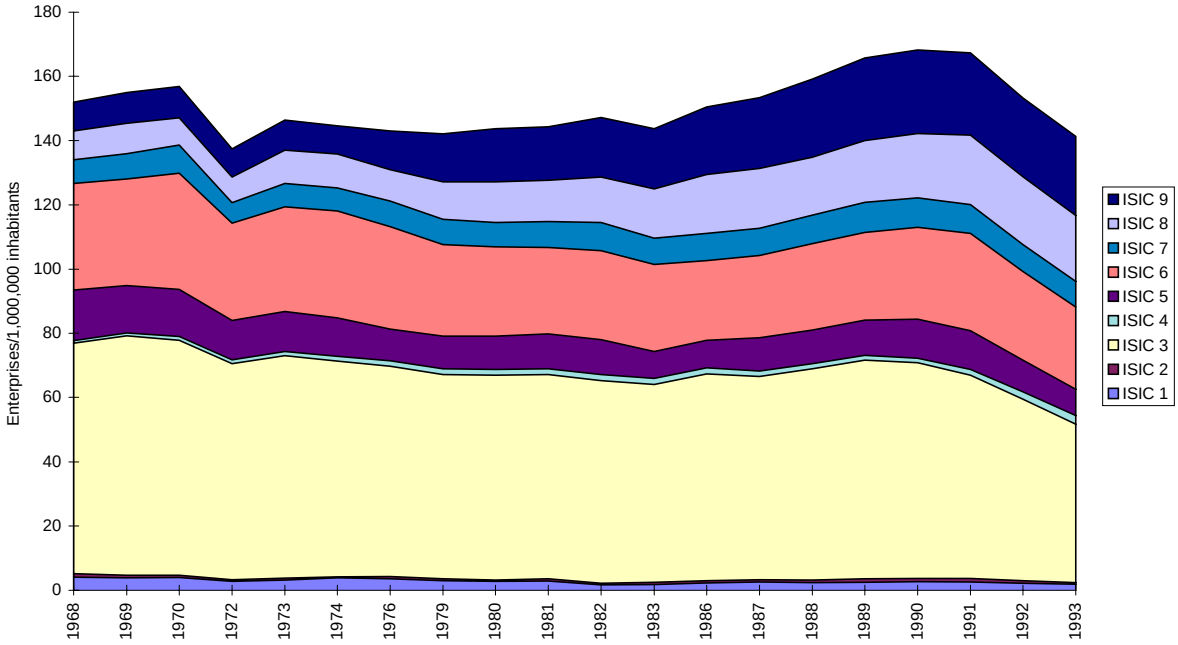
20-49 employees/enterprise



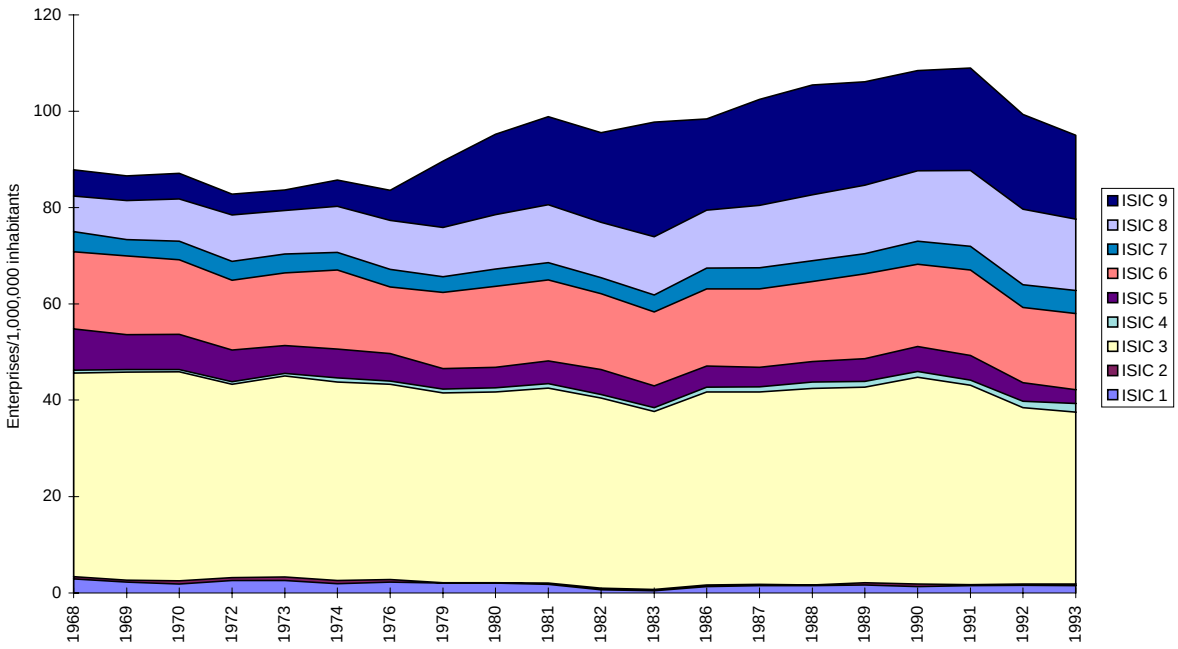
50-99 employees/enterprise



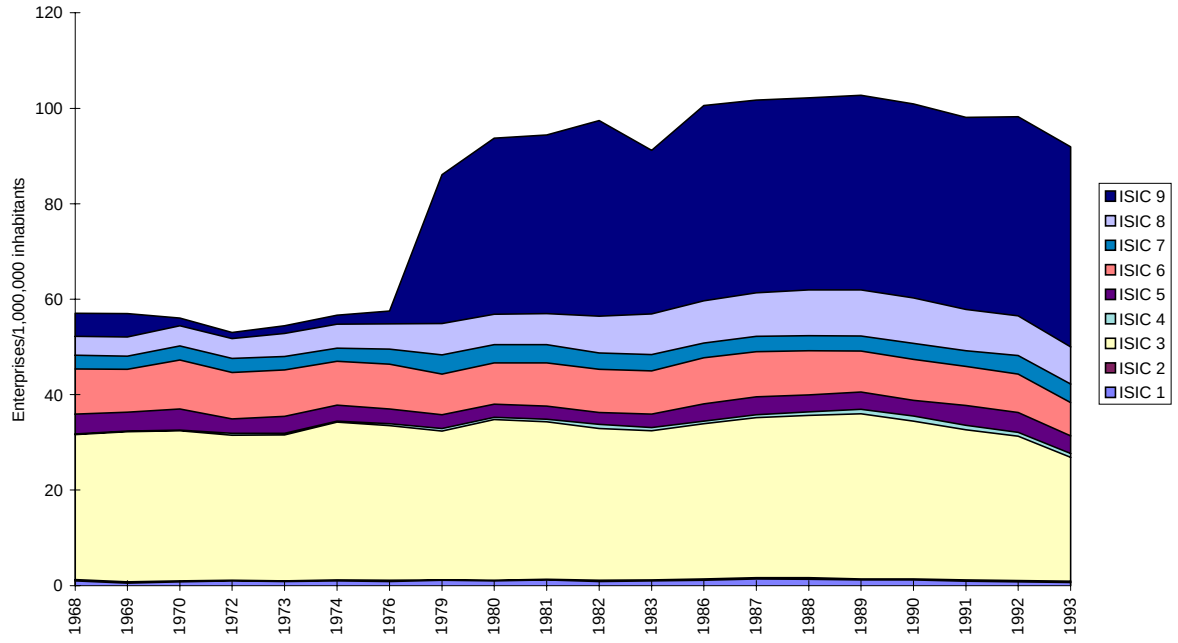
100-199 employees/enterprise



200-499 employees/enterprise



500+ employees/enterprise



APPENDIX 2. STATE-OWNED AND PRIVATE ENTERPRISES IN SWEDEN, ALL SECTORS

Table The number of state-owned and privately owned enterprises in Sweden

	1972				1984				1993			
ISIC	All	Private	S-O	S-O (%)	All	Private	S-O	S-O (%)	All	Private	S-O	S-O (%)
1 Agriculture etc.												
Enterprises	138854	138782	72	0.05	142803	142628	175	0.12	66983	66854	129	0.19
Employment	62.7	50.0	12.7	20.25	51.1	38.0	13.1	25.65	43.7	35.3	8.4	19.31
2 Mining												
Enterprises	805	796	9	1.12	970	956	14	1.44	623	604	19	3.05
Employment	18.0	11.8	6.2	34.54	12.2	7.6	4.6	37.44	10.1	6.9	3.2	31.35
3 Manufacturing												
Enterprises	39171	39106	65	0.17	48480	48283	197	0.41	41002	40854	148	0.36
Employment	972.8	942.7	30.1	3.09	826.9	736.2	90.7	10.97	691.1	659.8	31.3	4.52
4 Electricity												
Enterprises	757	656	101	13.34	536	388	148	27.61	711	436	275	38.68
Employment	19.7	6.9	12.8	64.80	26.4	6.6	19.8	75.07	24.1	3.5	20.6	85.58
5 Construction												
Enterprises	46709	46680	29	0.06	47057	47031	26	0.06	47476	47422	54	0.11
Employment	242.0	239.9	2.1	0.88	191.9	177.9	13.9	7.26	201.9	185.4	16.5	8.18
6 Wholesale trade etc.												
Enterprises	82754	82668	86	0.10	118730	118553	177	0.15	116502	116338	164	0.14
Employment	449.6	425.7	23.9	5.32	457.4	434.8	22.6	4.94	465.7	442.4	23.3	5.00
7 Transport etc.												
Enterprises	28811	28741	70	0.24	25838	25706	132	0.51	32594	32330	264	0.81
Employment	236.5	103.1	133.4	56.41	261.9	90.0	171.9	65.64	268.5	102.5	166.0	61.84
8 Financing etc.												
Enterprises	34879	33770	1109	3.18	34402	33716	686	1.99	99454	98241	1213	1.22
Employment	143.1	115.7	27.4	19.12	240.5	172.4	68.1	28.33	329.0	251.6	77.4	23.53
9 Community services etc.												
Enterprises	46178	42470	3708	8.03	44616	41729	2887	6.47	67194	64944	2250	3.35
Employment	586.5	113.4	473.1	80.66	1181.5	158.2	1023.3	86.61	1430.6	209.3	1221.4	85.37
Total												
Enterprises	418918	413669	5249	1.25	463432	458990	4442	0.96	472539	468023	4516	0.96
Employment	2730.8	2009.2	721.6	26.43	3249.7	1821.7	1428.0	43.94	3464.7	1896.6	1568.1	45.26

Note: Employment in 1000:s. S-O denotes state-owned.
Source: Statistics Sweden and own calculations.

APPENDIX 3. SUMMARY TABLE OF DIVISIONS AND CLASSES OF THE NACE[32].

0 Agriculture, hunting, forestry and fishing

1 Energy and water

- 11 Extraction and briquetting of solid fuels
- 12 Coke ovens
- 13 Extraction of petroleum and natural gas
- 14 Mineral oil refining
- 15 Nuclear fuels industry
- 16 Production and distribution of electricity, gas, steam, and hot water
- 17 Water supply: collection, purification and distribution of water

2 Extraction and processing of non-energy-producing minerals and derived products; chemical industry

- 21 Extraction and preparation of metalliferous ores
- 22 Production and preliminary processing of metals
- 23 Extraction of minerals other than metalliferous and energy-producing minerals; peat extraction
- 24 Manufacture of non-metallic mineral products
- 25 Chemical Industry
- 26 Man-made fibres industry

3 Metal manufacture; mechanical, electrical and instrument engineering

- 31 Manufacture of metal articles (except for mechanical, electrical and instrument engineering and vehicles)
- 32 Mechanical engineering
- 33 Manufacture of office machinery and data processing machinery
- 34 Electrical engineering
- 35 Manufacture of motor vehicles and of motor vehicle parts and accessories
- 36 Manufacture of other means of transport
- 37 Instrument engineering

4 Other manufacturing industries

- 41/42 Food, drink and tobacco industry
- 43 Textile industry

[32]Nomenclature Générale Activités Economiques dans les Communautés Européennes.

44 Leather and leather goods industry

45 Footwear and clothing industry

46 Timber and wooden furniture industries

47 Manufacture of paper and paper products; printing and publishing

48 Processing of rubber and plastics

49 Other manufacturing industries

5 Building and civil engineering

6 Distributive trades, hotels, catering, repairs

7 Transport and communication

8 Banking and finance, insurance, business services, renting

9 Other services

APPENDIX 4. SUMMARY TABLE OF DIVISIONS AND CLASSES OF THE ISIC[33] .

1 Agriculture, hunting, forestry and fishing

2 Mining and quarrying

- 21 Coal mining
- 22 Crude petroleum and natural gas production
- 23 Metal ore mining
- 29 Other mining

3 Manufacturing

- 31 Manufacture of food, beverages and tobacco
- 32 Textile wearing, apparel and leather industries
- 33 Manufacture of wood and wood products, including furniture
- 34 Manufacture of paper and paper products, printing and publishing
- 35 Manufacture of chemicals and chemical, petroleum, coal, rubber and plastics products
- 36 Manufacture of non-metallic mineral products
- 37 Basic metal industries
- 38 Manufacture of fabricated metal products, machinery and equipment
- 39 Other manufacturing industries

4 Electricity, gas and water

- 41 Electricity, gas and steam
- 42 Water works and supply

5 Construction

6 Wholesale and retail trade and restaurants and hotels

7 Transport storage and communication

8 Financing, insurance, real estate and business services

9 Community, social and personal services

0 Activities not adequately defined

[33]International Standard Industrial Classification of all Economic Activities (1968).