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## **ABSTRACT**

### **Top Incomes in Sweden during Three-Quarters of a Century: A Micro Data Approach**

This paper aims to throw light on the development of top incomes in Sweden as well as the causes for change. Using household income data we show that since the first half of the 1980s, real income at the top of the distribution has developed more favourably than for other groups. This contrasts with the changes which occurred prior to the 1980s. Reasons for the rise in the top income share are several: the development of stock prices, the tax reform which made income taxes not progressive at the top of the scale, and the labour market change of top wages increasing more rapidly than others.

JEL Classification: D31, J31, N34

Keywords: income distribution, Sweden, tax reform

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## 1. Introduction

Since the publication of *Les hautes revenus en France au XX<sup>e</sup> siècle. Inégalités et redistributions 1901 – 1998* by Thomas Piketty (Piketty 2001), research to shed light on the development of top income during the 1990s has been made for many countries. In his monumental work, Piketty carefully reports on various stages of a research project that resulted in annual time series showing the development of economic inequality in France, and reasons for the changes.<sup>2</sup> The series shows the proportion of income accrued to the highest top decile and the highest centile, for example. The share of income earned by top-income earners declined during the first half of the 1900s, and fell particularly rapidly during the 1930s and World War II. Decreased importance of capital income in combination with increased taxation on top-income earners were the main channels of influence. Raising income taxes for top-income earners not only has an accounting effect on income but also makes high wages more costly for employers, counteracts capital accumulation among households and thereby reduces future capital income. However, during the second part of the 1900s the share of income accruing to top earners in France did not show a trend.

The work of Piketty is an interesting example of how an existing research method is rediscovered and inspires new research. The hypothesis that economic development and income inequality is related as an inverted U became widely accepted after the presidential address Simon Kuznets delivered at the annual meeting of the American Economic Association in 1954 (Kuznets 1955). However, his extensive empirical study of the development of top-income earners in the USA (Kuznets 1953) did not have any ambitious follow-up until the work of Piketty. Research questions as well as research method were rediscovered; the method combines information from national accounts and from the process

of income taxation.<sup>3</sup> This sort of material is readily available for many countries and for periods going back to the beginning of the 1900s when general income taxation was introduced.

Results from new studies of the development of top-income earnings indicate a period of compression for many countries for the first part of the 1900s. In contrast, the picture of the development during the second part of the last century is more mixed. Clear indications of increased income shares for top-income earners have been reported from the USA (Piketty and Saez 2003), the United Kingdom (Atkinson 2005a), Australia and New Zealand (Atkinson and Leight 2004), Canada (Saez 2005) and India (Banerjee and Piketty 2005). However, such indications are missing not only for France, but also the Netherlands (Atkinson and Selverda 2005), Japan (Moriguchi and Saez 2005) and Germany and Switzerland (Dell 2005).<sup>4</sup>

The new research on top-income earners has led to new knowledge on the distribution of income in two different ways. First, it has thrown light on long-run development. In the 1960s and the 1970s many OECD countries started to conduct repeated sample surveys enabling the monitoring and analysis of changes in the distribution of income at the household level. As a consequence much has been written on the development of income inequality during the most recent decades, while the picture of changes during earlier periods has remained fragmented.

The other way the new research has increased knowledge is its focus on the top of the income distribution. Earlier a large body of applied literature has used inequality indices, among which the Gini coefficient has been probably the single most applied. Parallel to this, the same surveys have made it possible to throw light on the less privileged, the poor. In contrast, the

top of the income distribution has not been in focus. On one hand, concentrating on top-income earners (as in the work of Kuznets, Piketty and their colleagues) can be seen to be caused by necessity. When income taxes were first introduced they were directed towards high-income earners while persons and households with low incomes were exempted and thereby remained undocumented. Thus the method of combining national accounts and tax data has been limited to the study of the top of the distribution. However, to emphasise the more affluent in a distribution study can also have a deeper motivation. The risk for “elite separation”, i.e., that a small exclusive group earns so much that they can diverge from the rest of society motivates the study of the changes in top earnings (Björklund 2003).

This paper aims to contribute to the new literature on top-income earnings by providing new results for Sweden. It differs from almost all other studies of top-income earners through its use of micro data.<sup>5</sup> This difference in method has certain advantages. First, following what is now common practice when analysing income distribution data, we use the household as the income receiving unit, adjust the income by an equivalence scale and then assign this value to each individual in the household. The most common method of studying top-incomes has been to rely on published tables where the income receiving unit (the tax unit) can be less defensible, defined from a welfare point of view, and individuals are not the unit of analysis. Second, in our approach there is no need to make interpolations from published tables, as one can compute tax rates and disposable income directly from the data. One disadvantage with our approach is that for the first part of the period studied we have access to micro data for selected years only. Another limitation with our approach is that data for the early sub-period covers only one location in Sweden, the city of Göteborg.<sup>6</sup>

This paper provides the following description of the evolution of income and income share of top-income earners in Sweden: Since the first half of the 1980s, real income for the highest income earners has developed more favourably than for others in the population. This is in stark contrast to the development during much of the 1900s when real income at the top of the income distribution did not increase, in contrast to the development at the bottom. Such a period of compression has previously been found for many countries. Sweden holds a middle position regarding how rapidly the income share of top income earners increased during the later decades of the Twentieth Century.

This paper also aims to shed light on reasons for the changes in top income shares by analysing income components. We find that the development of stock prices had a large effect on the income share earned by top-income earners during later decades. It can be argued that in Sweden, the distributional norm changed during the late 1900s. This became apparent in the political sphere when income taxes lost the property of being progressive at the top of the income distribution. The salaries of members of parliament have also reflected the change, as they have increased more rapidly than average real wages have. In the labour market, top wages increased more rapidly than other wages.

The rest of the paper is laid out as follows: In the next section we describe data and report the time series derived. Section 3 presents an analysis of the role played by capital income and taxation while Section 4 reports changes in earning shares for top income earners. Finally Section 5 summarises the findings of the study.

## 2. The development

The basis for our time series of top-income earners for the years 1975, 1978, 1980 and each subsequent year is the annual income distribution survey (HINK, more recently known as HEK) conducted by Statistics Sweden. In this survey all income information is obtained from tax registers and registers of transfers received. We base the computations on the variable “equivalent disposable income”, meaning that we relate the disposable income of a family unit to its expenditure needs as indicated by the number of members and ages of each child. We assign the same value to each family member and make the computations with individual as unit of analysis.<sup>7</sup>

Earlier years are covered by a database obtained by coding archive information for the equally spaced years 1925, 1936, 1947 and 1958 and refer to households residing in the city of Göteborg, the second largest city in Sweden. These samples were drawn in a similar manner for each year under study, and income information came from tax-registers. Gustafsson and Johansson (2003) describe this database in more detail.

As we work with samples, it follows that sample errors for various estimates occur. The number of persons included in HINK / HEK ranges from 29 277 to 41 615 persons when computing equivalent disposable income and between 6 642 and 11 796 when computing earnings for the full-time and full-year employed. Therefore the smallest number of observations used for basing estimates for the top 1 percent of the wage earners is 292 alternatively 66 persons. The total number of persons in the data for Göteborg ranges from 6 845 to 9 934 persons.



/Figure 1 and Figure 2 about here/

Figure 1 shows the income shares accrued to the two lowest and the two highest deciles of the population in Sweden 1975 to 2004. There are some fairly clear indications of decreasing income shares of the two lowest deciles since the first half of the 1980s. However, the large changes are found among the highest deciles for which income shares started to increase during the first half of the 1980s, with “spikes” for some years (1994, 1997 and 2000). Thus it is mainly the increased income share for top-income earners that lies behind the previously reported tendencies for the Gini coefficient to increase for the same period. In Figure 2 when we disaggregate the highest decile into four sub-categories, we see that the most rapid increase is highest up in the distribution for the highest centile. It can also be seen that the spikes are almost entirely located to the highest centile.

/Table 1 about here/

With this background we now inspect the development during three-quarters of the 1900s in Table 1. A compression (from the first measurement year 1925 and several decades forward) took place with real income for the highest decile remaining at the level it had already reached. Most notably, the highest decile in 1978 in Sweden did not enjoy a higher real income than the corresponding decile did in Göteborg in 1925. This lack of change occurred during a period when the mean value for the other nine deciles of the population more than doubled. Thus up until the end of the 1970s, a large compression of the income distribution took place. The growth of the welfare state coincided with a period of pro-poor growth while real income of the income elite came to a halt. This aspect of the economic history of Sweden has scarcely received the attention it deserves.

In contrast to the long period of no –change, there was one period during the 1980s when real income of top-income earners increased rapidly; more rapidly than for others in the population. From the low activity year 1983 until the latter part of the business cycle in 1990, real income increased for the top decile by 31 percent, which is to be compared with 18 percent for the rest of the population. From the rather low activity year of 1993, to 2004 the last year of observation, real income of the lowest nine deciles increased by 15 percent; for the top decile the increase was as high as 39 percent and still higher incomes were reached in 1999 and 2000.<sup>8</sup> Note that the rapid income growth for the top-income earners during the 1990s means that their income share had come to resemble the corresponding income share observed for the city of Göteborg during the middle of the 1900s.

Table 1 indicates that since the first half of the 1980s, the Swedish income elite has become more income separated from the rest of the population. It is interesting that this has parallels in results from sociological research on people's attitudes to the welfare state. Results from surveys often indicate that the income of the respondent is positively related to acceptance of large income differences in the society. In addition, Svallfors (1998) reports that the small number of respondents belonging to the elite group in surveys made for various years have begun to have a more negative attitude to collective funding and to harbour more suspicions of abuse of benefits and services than other respondents.<sup>9</sup>

/Table 2 about here /

How does the development of the income share for top income earners during the last decades of the 1900s appear from an international comparative perspective? Table 2a is constructed to

answer this question.<sup>10</sup> We have used available time series on gross income for the top centile, the top five percent and the top decile for 1975 forward and have estimated simple linear time trends for each country. Thus the table shows separate regressions for each country with time as the independent variable, and the estimated coefficients show changes in the income share for top income earners.<sup>11</sup> All three trends for Sweden are positive and similar to what is observed for Canada, Finland and (for the top 1-percent) Ireland. This data shows rates of increase considerably lower than for the United States and Great Britain and lower than for Australia, but also that they differ from the lack of distinct increases noted for Japan, the Netherlands, Spain and France.<sup>12</sup>

### **3. The importance of capital income and income taxes.**

Why did the income share of top income earners first decrease and then increase? Possible causes have probably interacted. Our discussion will use three channels of influence: capital income, income taxes and the labour market (wages).

Gustafsson and Johansson (2003) show that the changes in capital income provided an important explanation for why the income share of top-income earners in the city of Göteborg decreased between 1925 (the first year under study) and 1936 (the second year under study). The real value of capital income for the highest decile more than halved between those two years. In contrast, the continued decrease in income share for the income elite up to 1947 (the third year under investigation) was linked to rapidly increased income taxes. Although the top decile earned higher gross incomes in 1947 than in 1936, the rate of income tax increases kept disposable income unchanged. The average tax rate for the top decile (13.8 percent in 1925), increased to 17.6 percent in 1936, increased more rapidly to 28.8 percent in 1947, and

continued more slowly up to 31.9 percent in 1958. From this it follows that the decreased importance of capital income in combination with increased income taxes caused the rapid fall in income shares for top-income earners in Sweden during the first part of the last century. The reasons for the compression were thus the same as those Piketty indicated were in force in France during the same period.

What does the data tell us of the importance of capital income for top-income earnings during later decades in Sweden? First we need to remember that capital incomes are of different types. There is interest and dividend income relatively equally distributed across the population, that in the aggregate only changes slowly from one year to the next. In addition there are realised capital gains from sales of for example real estate sales and stocks. Capital gains are typically concentrated to high-income earners and as an aggregate can change rapidly from one year to the next. In Sweden, as in many other countries, stock prices increased very rapidly during most of the 1990s and then fell. We study the importance of stock prices for the share of top-income earners by estimating simple regression models when the income share accrued to top-income earners is related to the variable of the general stock index on the Stockholm stock exchange (deflated by GDP) and a time variable.<sup>13</sup> Table 2b shows the expected result; the income share accrued to top-income earners has followed the stock index. Note that when this variable is included in the model, the time variable has no independent explanatory power.<sup>14</sup>

The Swedish tax system has changed several times during the previous two decades. The reform in the beginning of the 1990s had many components and had far-reaching consequences. (See Agell et al, 1998) The tax basis was broadened. A two-base system was introduced meaning that capital income was taxed independently from work earnings using a

proportional rate. The tax schedules for work earnings were simplified, and the progressivity at the highest brackets was initially reduced. A so-called break-point was introduced; income above this level was subject to tax to the central government while households with lower incomes only had to pay the proportional local tax (typically 30 to 35 percent). However, shortly after the tax reform was initialised, the Swedish economy went into a deep recession, which made policy measures necessary for reducing the public deficit. Tax rates for persons with middle earnings and high earnings were increased and in 1998 a second break-point was introduced.<sup>15</sup>

We investigate tax shares computed from the Göteborg data and from HINK/HEK (selected years) calculated for deciles 1 to 9 of gross income, for the highest decile, and (for later decades) different parts of the highest decile.<sup>16</sup> Although the tax base is not defined identically for all years (for example, it increased rapidly when the large tax reform was introduced at the beginning of the 90s), this information can be of considerable interest.

/ Table 3 and Figure 3 about here/

Table 3 shows that tax rates rose rapidly until 1975, after which changes became smaller. For all years the tax rates for the top decile are higher than for the lower deciles, and in this sense the tax system has been progressive for all years. Until the large tax reform was implemented at the beginning of the 90s, there is a clear pattern for almost all years; within the top decile the tax rates were highest at the highest incomes, see also Figure 3. However, this progressivity has since been lost.<sup>17</sup> It follows that if the older tax system had been in force during the 1990s, a considerably larger proportion of capital gains earned by top-income

earners would have flowed into the public coffers and the share of top-income earners in the distribution of disposable income would have been lower. Another consequence of the tax reform is that the employer's costs for paying high net wages decreased, another reason for top income earners enjoying a more positive income development than other earners during the 1990s.

#### **4. The labour market and top wages**

/Figure 4 about here/

How have wages and salaries developed for those with the highest compensation for work? We investigate full-time and full-year employed persons, the core of the labour market.<sup>18</sup> Figure 4 shows the share of the total wage sum accrued to the two lowest and two highest deciles of the 2.3 to 2.5 million wage earners from 1975 to 2004. The shares accrued to the lowest deciles have remained constant during the period, which is also true for the ninth decile, while the share accrued to the highest decile decreased until 1983 and after that increased. Compared to Figure 1, the spikes are less pronounced. We also disaggregated the top decile into four subcategories; this shows that the increase for the top centile is not as rapid as for the top centile in the distribution of equivalent income reported in Section 2 and that the spikes are less pronounced.

/ Table 4 about here/

Table 4 shows mean values for the nine lowest deciles and the top decile (in constant prices). We find that from 1975 until 1983 real wages decreased for the top decile by as much as 18

percent, while the drop was only 5 percent for other wage earners. When we investigate the period 1983 to 1990 we find that the real value of the top decile increased slightly more rapidly than for the rest of the wage earners (22 percent compared to 17 percent, respectively). For the next period of rising economic activity, from 1993 to the end of the study period in 2004, the difference is somewhat larger (37 percent compared to 27 percent, respectively).

An important development on the Swedish labour market during the period studied is that larger proportions of women have come to work full-time during the entire year. The gender wage gap continues to command interest in political debate as well as in research. Albrecht et al (2003) draws attention to the fact that Sweden (as opposed to the United States) has a large gender wage gap at the top of the wage distribution. Booth (2006) finds that the situation is similar to Sweden's in most of the European countries she studied. We add to this knowledge by reporting information on the average gender wage gap and the wage gap at the top of the earnings distribution from HINK/HEK for the longer period of 1975 to 2004.<sup>19</sup> Figure 5 shows the disappointing result that for selected years, there is no indication of a trend for a decrease in the gender wage gap at the top of the earnings distribution.<sup>20</sup>

/Figure 5 about here/

This paper does not aim to provide a deep analysis of why top-wage earners have experienced a more positive development than others in Sweden since the first half of the 1980s. However, we would like to point towards changed distributional norms as potentially central to the development. We illustrate this line of thought by examining the political acceptance of wage differences through studying the salary development of members of parliament, and relating it to average wages and report results for selected years.<sup>21</sup>

/Table 5 about here/

Several interesting observations can be made in Table 5. The real value of parliament members' salaries fell by as much as 26 percent between 1975 and 1981, and the income gap towards the average full-time- and full-year employed person narrowed. However, during the growth years of the 1980s, parliament members' salaries increased more rapidly than wages. At that time salaries for members of parliament were linked to the development of wages among public servants and parliament members could not determine their salaries by themselves. This was changed in 1993. During the deep recession at the beginning of the 90s, the real value of the parliament members' salaries remained more or less constant. The increase from 1993 to 2004 was as high as 72 percent, an increase twice as high as the corresponding wage hike for the highest paid decile of wage earners (34 percent), and three times as high as for the average full-time and full-year wage earner (23 percent). The salaries of parliament members have been subject to income tax throughout the entire period under study here, and the lower tax has progressively benefited parliament members. Their living standards have thus come to become more separated from their electorate. Could it be more than a coincidence that during these same years public confidence for elected officials and their parties has steadily decreased? (Holmberg and Weibull 2005)

## **5. Conclusions**

In this paper we have introduced two new perspectives on the development of the Swedish income distribution. The long-run development and the top of the income distribution have been studied. Household data for the entire country for almost all years from 1975 to 2004



was used. The data was linked backwards by investigating the situation in the city of Göteborg for selected years.

Since the beginning of the 1980s, top-income earners have experienced positive income development, more positive than for others in the population, although the development for the top centile has been notably bumpy. This period is in sharp contrast to what occurred during the beginning and middle of the 1990s, a period where the welfare state appeared and grew. During that epoch income growth took place at the lower and middle parts of the income distribution, while real income for top-income earners remained stable.

An important reason for the changing income share for top-income earners is the development of capital income. For later years we found that the boom and subsequent burst on the stock exchange clearly affected the income share earned at the top of the income distribution. However, reasons for the changed share accrued to the top of the income distribution are not limited to the changing role of capital income. Changes in the tax system are of importance as well. Increased taxes lie behind the compression that occurred when the welfare state developed. However, since the beginning of the 1990s, Sweden has a tax system in which marginal tax rates over the highest break-point are constant. In addition, different types of capital income, often concentrated to high-income earners, are taxed at a relatively low rate. The introduction of such a system indicates changed distributional norms and increased tolerance for top incomes.

A third channel for increased income shares for top-income earners since the first half of the 1980s comes from the labour market. During the years of high economic activity in the 1980s and 1990s, top wages increased more rapidly than other wages. We note that the gender wage

gap in Sweden is highest at the top of the earnings distributions, and could not find a trend for a change since 1975. Since the end of the deep recession at the beginning of the 90s, salaries for members of parliament have increased much more rapidly than for the typical worker. Once again this indicates an increased tolerance for top incomes.

Until now, new research has pointed towards the first part of the last century as being a period of decreasing shares for top-income earners in almost all countries investigated. The long period of compression in Sweden is in no sense unique. However, research also shows that the development during the 1980s and 1990s differs across countries. Sweden, together with Canada and Finland, retains a middle position. On one hand, the advancement of top-income earners in Sweden has not been as rapid as in the United States and Great Britain, for example. On the other hand, it has been difficult to show increases in the Netherlands, France and Germany. To find reasons for the development varying so greatly across countries should be an important task for future research.

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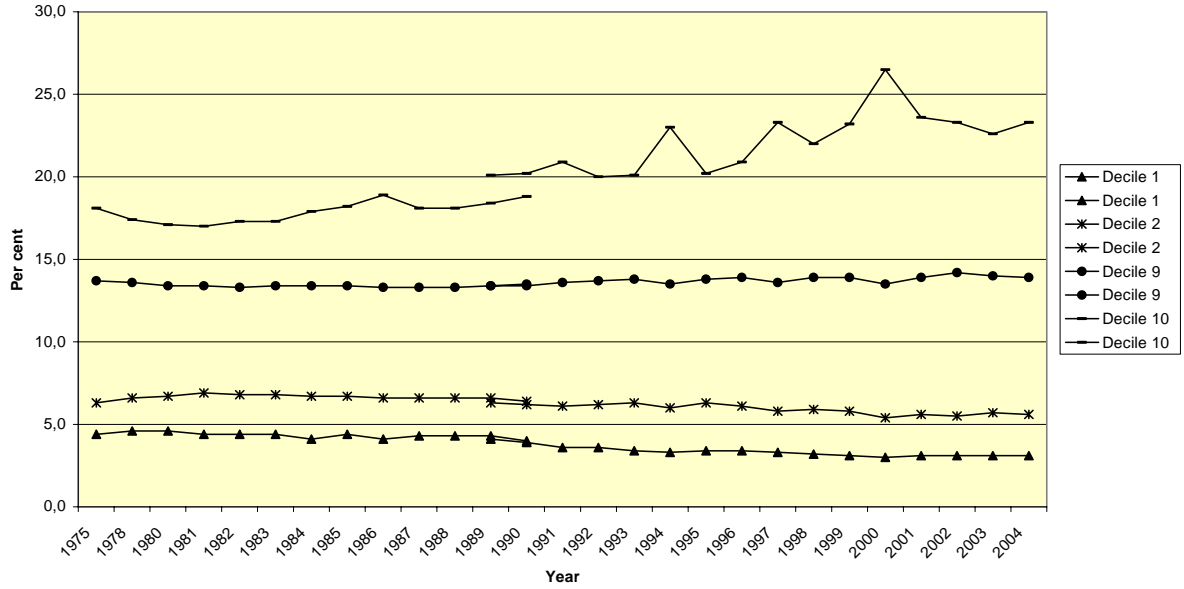
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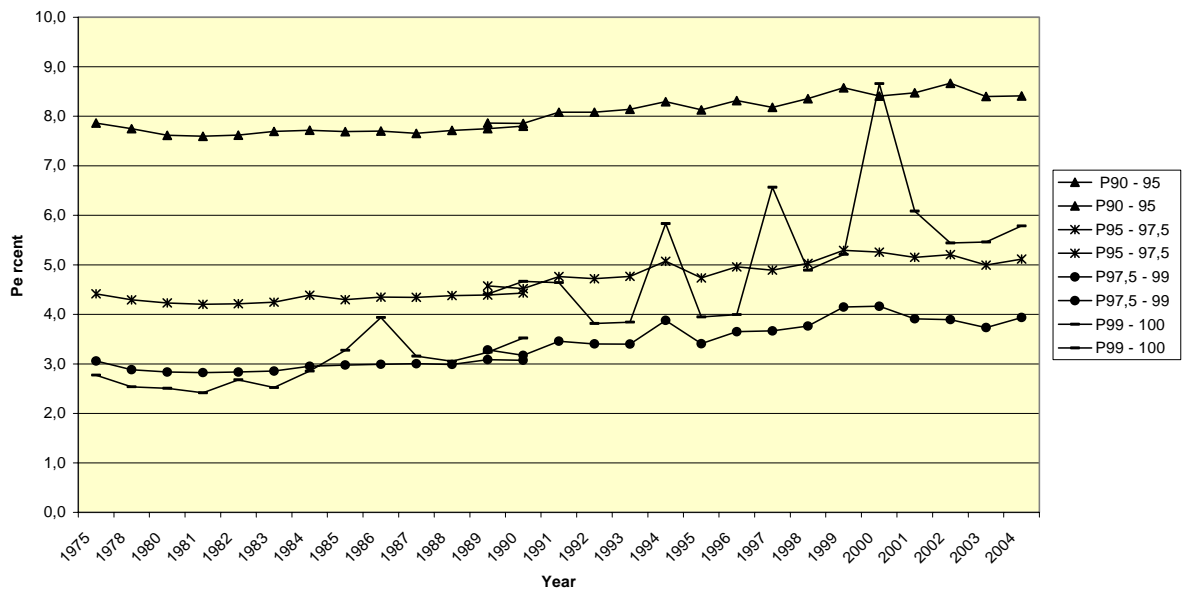
# Figurs

**Figure 1. Income shares for deciles 1, 2, 9 and 10. 1975 to 2004. (Disposable income)**



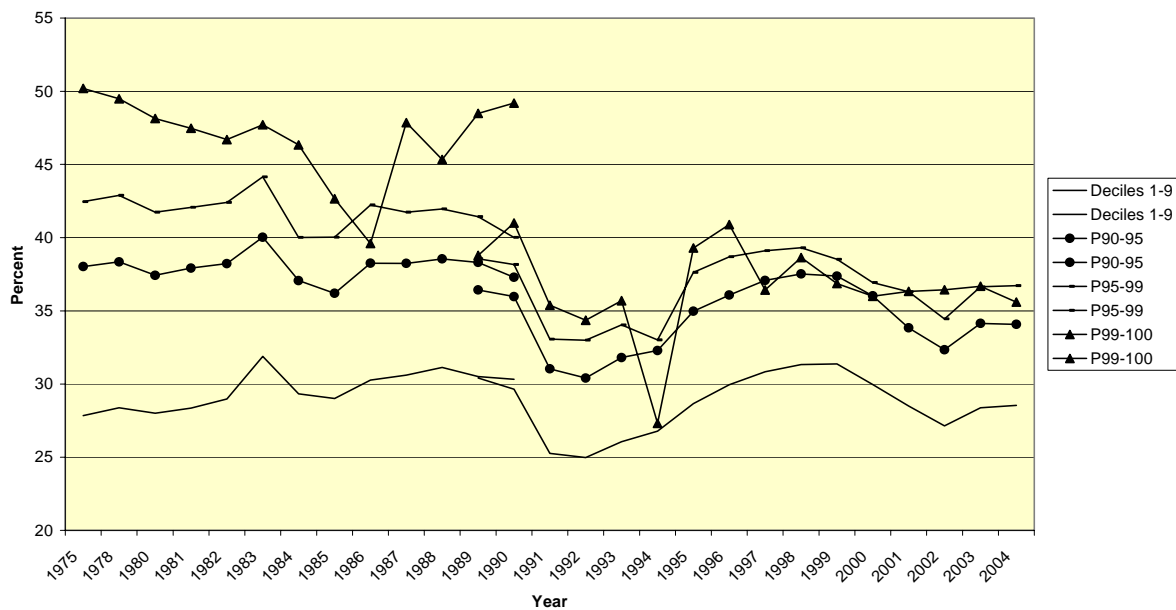
Source: HINK/HEK

**Figure 2. Income share for decile 10 divided in groups. 1975 to 2004. (Disposable income)**



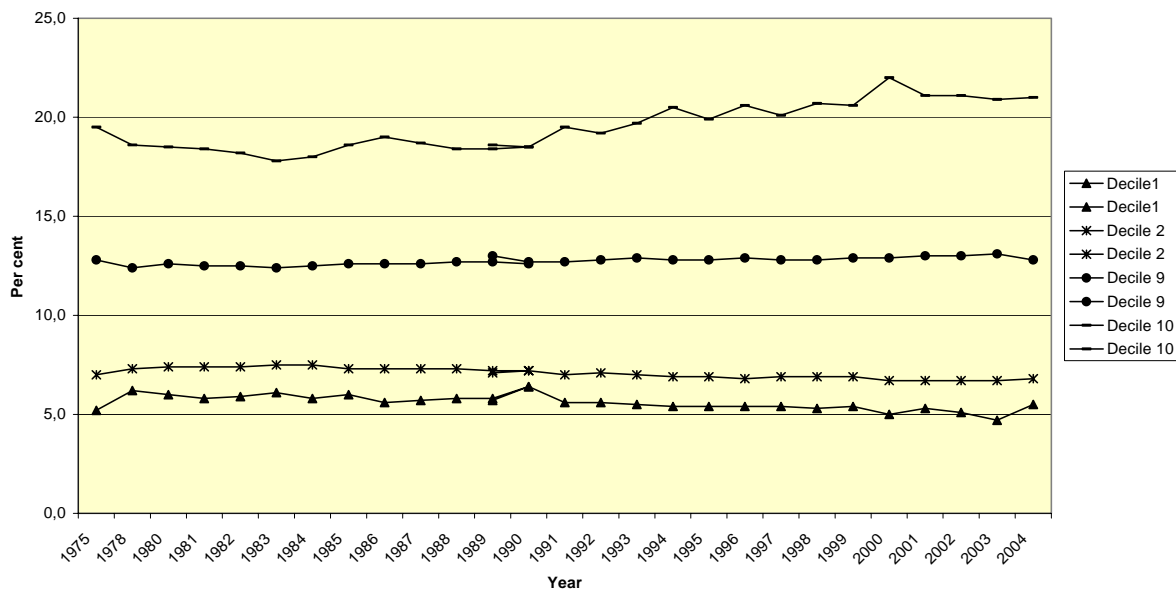
Source: HINK/HEK

Figure 3. Tax shares at various levels of the distribution of income.  
1975 to 2004.



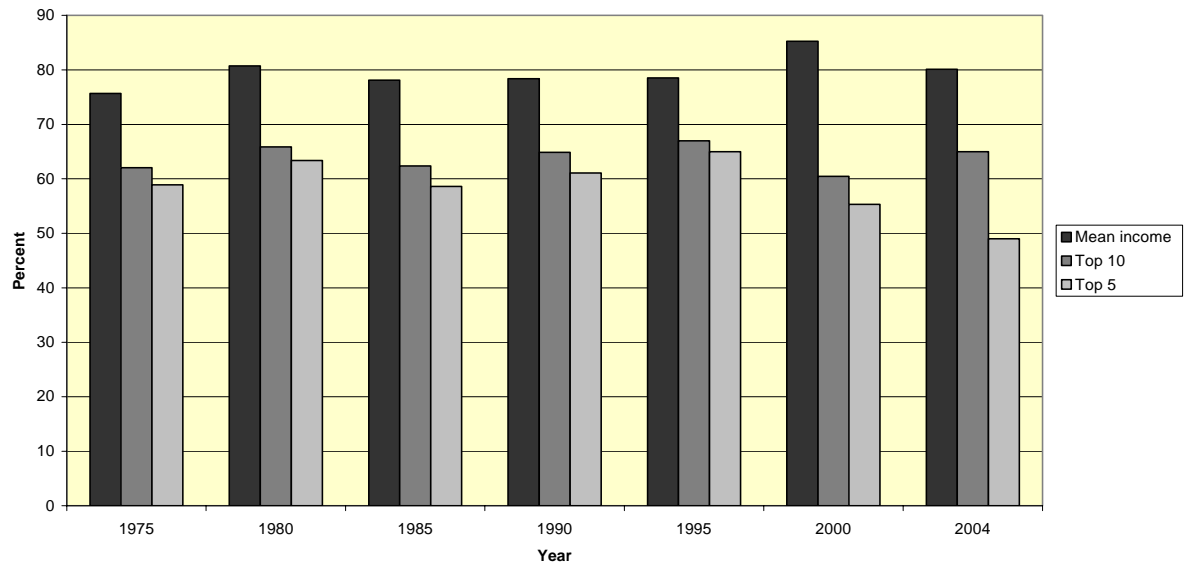
Source:HINK/HEK

Figure 4. Income share for deciles 1, 2, 9, and 10. 1975 - 2004.  
(Wage income)



Source:HINK/HEK

Figure 5. Female wages in per cent of male wages.  
Full-time and full year workers  
(Wage income) Selected years.



Source: HINK/HEK



## Tables

<b>Table 1. Development of real income (SEK) and income shares (disposable income) 1975 – 2004.</b>												
<b>Year</b>	Real income in 2002-prices deciles 1 – 9 (mean value)		Real income in 2002-prices decile 10 (mean value)		% of income for decile 10	% of income for P 90 – 95		% of income for P95 - 99		% of income for P99 – 100		
<b>Göteborg</b>												
1925	40 800		170 900		31,7							
1936	51 400		174 400		27,4							
1947	61 300		174 000		24,0							
1958	71 600		173 200		21,2							
<b>Sweden</b>												
1975	88 500		176 000		18,1		7,9		7,5		2,8	
1978	93 000		177 100		17,4		7,7		7,2		2,5	
1980	100 300		187 400		17,1		7,6		7,1		2,5	
1981	99 900		184 500		17,0		7,6		7,0		2,4	
1982	96 900		183 000		17,3		7,6		7,1		2,7	
1983	94 900		179 000		17,3		7,7		7,1		2,5	
1984	95 600		187 600		17,9		7,7		7,3		2,9	
1985	100 400		201 500		18,2		7,7		7,3		3,3	
1986	100 300		211 300		18,9		7,7		7,3		3,9	
1987	102 200		204 000		18,1		7,7		7,3		3,2	
1988	104 800		208 900		18,1		7,7		7,4		3,1	
1989	109 300	114 500	222 800	259 800	18,4	20,1	7,7	7,9	7,5	7,9	3,2	4,4
1990	112 200	116 000	234 200	264 500	18,8	20,2	7,8	7,9	7,5	7,7	3,5	4,7
1991		116 500		277 700		20,9		8,1		8,2		4,6
1992		115 000		259 100		20,0		8,1		8,1		3,8
1993		107 400		243 900		20,1		8,1		8,2		3,8
1994		106 800		288 400		23,0		8,3		9,0		5,8
1995		102 000		232 700		20,2		8,1		8,1		3,9
1996		102 300		243 600		20,9		8,3		8,6		4,0
1997		102 800		281 000		23,3		8,2		8,6		6,6
1998		104 500		265 800		22,0		8,4		8,8		4,9
1999		108 900		296 600		23,2		8,6		9,4		5,2
2000		114 500		371 300		26,5		8,4		9,4		8,7
2001		120 400		335 100		23,6		8,5		9,1		6,1
2002		124 400		338 300		23,3		8,7		9,1		5,4
2003		123 000		323 100		22,6		8,4		8,7		5,5
2004		123 900		337 900		23,3		8,4		9,1		5,8

Source: HINK/HEK and Gustafsson & Johansson (2003)

<b>Table 2a. Development of top income in selected countries, 1975 – 1998. (gross income). Regressions.</b>						
<b>Country</b>	<b>Top1</b>	<b>Top 5</b>	<b>Top 10</b>	<b>Source</b>		
<b>USA</b>	0,322	0,441	0,461	Piketty, T and Saez, E (2003)		
<b>UK</b>	0,304	0,489	0,581	Atkinson, A.B and Salverda, W (2005)		
<b>New Zealand</b>	0,168	0,169	0,200	Atkinson. AB and Leigh A (2005)		
<b>India</b>	0,156			Banerjee A and Piketty T (2003)		
<b>Canada</b>	0,148	0,148	0,123	Saez, E and Veall, M R (2003)		
<b>Australia</b>	0,146	0,219		Atkinson. AB and Leigh A (2004)		
<b>Finland</b>	0,070	0,118	0,141	Riihlä M et al (2005)		
<b>Sweden</b>	0,068	0,106	0,124	HINK/HEK own calculation		
<b>Ireland</b>	0,063			Nolan B (2004)		
<b>Spain</b>	<i>0,035</i>	<i>0,022</i>	<i>0,026</i>	Alvaredo F and Saez E (2006)		
<b>Japan</b>	0,024	0,104		Moriguchi C and Saez E (2005)		
<b>France</b>	<i>-0,005</i>	<i>0,013</i>	<i>0,043</i>	Piketty, T (2003)		
<b>Netherlands</b>	<i>-0,036</i>	<i>-0,014</i>	0,027	Atkinson, A.B and Salverda, W (2005)		
<b>Table 2b. Development of top income in Sweden 1978 - 1998. Gross income.</b>						
	<b>Time trend</b>			<b>Stock index</b>		
	Top 10	Top 5	Top 1	Top 10	Top 5	Top 1
	<i>0,001</i>	<i>0,053</i>	<i>-0,017</i>	0,681	0,437	0,385

Italic font = Not significantly different from zero at the 5-percent level. The underlying time series are incomplete in some cases: For UK information for 1980 is missing; for Finland information for 1975, 1977-79, 1981-84 and 1986-1989 is missing; for Netherlands information for 1976, 1978 – 80, 1982-84 and 1986-88 is missing; for Sweden information for 1976, 1977 and 1979 is missing; for Ireland information for 1986 is missing. For Spain the series starts in 1981.

**Table 3 Gross income (thousand SEK); 2002 prices and tax rates (percent).  
Selected years.**

Year	Decile 1-9		Decile 10		P 90 - 95		P 95 - 99		P 99 -100	
	Gross Income	Tax rate	Gross Income	Tax rate	Gross Income	Tax rate	Gross Income	Tax rate	Gross Income	Tax rate
<b>Göteborg</b>										
1925	43	6	198	14						
1936	56	8	212	18						
1947	72	15	244	29						
1958	89	20	253	32						
<b>Sweden</b>										
1975	123	28	304	42	247	38	316	42	541	50
1980	139	28	317	41	265	37	330	42	526	48
1985	141	29	330	39	266	36	335	40	631	43
1990	165	30	427	38	321	36	407	38	1 035	41
1995	143	29	369	37	288	35	376	38	748	39
2000	163	30	583	36	368	36	524	37	1 896	36
2004	173	29	524	35	371	34	520	37	1 305	36

Sources: Gustafsson and Johansson (2003) and HINK/HEK.

**Table 4. Development of real wage (SEK) and wage shares for full-time and full-year employed. 1975 – 2004.**

Year	Wage income (Mean value) decile 1 – 9	Wage income (Mean value) decile 10	% of wage income for decile 10	% of wage income for 90 – 95	% of wage income for 95 - 99	% of wage income for 99 – 100						
<b>Sweden</b>												
1975	168 800	367 500	19,5	7,8	8,1	3,6						
1978	174 900	358 700	18,6	7,5	7,8	3,3						
1980	167 700	343 600	18,5	7,6	7,8	3,2						
1981	161 900	328 900	18,4	7,5	7,7	3,2						
1982	160 300	321 200	18,2	7,4	7,6	3,1						
1983	160 000	311 000	17,8	7,3	7,4	3,0						
1984	160 100	316 500	18,0	7,4	7,5	3,1						
1985	159 800	328 300	18,6	7,5	7,9	3,2						
1986	165 100	348 300	19,0	7,5	8,0	3,5						
1987	169 900	350 700	18,6	7,5	7,8	3,3						
1988	173 500	351 400	18,4	7,5	7,8	3,0						
1989	179 000	184 600	363 400	380 500	18,4	18,6	7,6	7,8	7,8	7,9	3,0	3,0
1990	186 500	189 900	380 300	388 600	18,4	18,5	7,5	7,5	7,8	7,8	3,2	3,2
1991		176 600		385 200		19,5		7,7		8,2		3,6
1992		176 800		379 200		19,2		7,8		8,2		3,3
1993		175 200		387 000		19,7		7,8		8,2		3,7
1994		178 500		414 200		20,5		7,9		8,5		4,1
1995		175 500		392 900		19,9		7,9		8,4		3,7
1996		185 600		432 300		20,6		8,0		8,4		4,1
1997		190 400		431 700		20,1		8,0		8,4		3,8
1998		208 700		464 000		19,8		7,7		8,2		3,9
1999		203 300		475 700		20,6		8,1		8,7		3,8
2000		208 300		528 400		22,0		8,1		8,8		5,1
2001		211 800		509 100		21,1		8,1		8,6		4,4
2002		215 600		518 100		21,1		8,0		8,8		4,2
2003		213 100		508 100		20,9		8,1		8,7		4,1
2004		222 200		530 500		21,0		7,9		8,5		4,6

Not: The variable is defined in the text and not no. 2. The tax reform in the beginning of 1990s increased the tax base and the calculated income.

Source: HINK/HEK

<b>Table 5. Salaries for members of parliament (thousand SEK). Selected years. 2002-prices.</b>					
<b>Year</b>	<b>Median income</b>	<b>Salary for parliament</b>	<b>Decile 10</b>	<b>Salary for parliament in percent of median</b>	<b>Decile 10 in percent of median</b>
<b>1975</b>	172	365	367	212	213
<b>1981</b>	163	269	329	165	201
<b>1987</b>	172	334	351	195	204
<b>1993</b>	174	315	379	181	218
<b>1999</b>	202	456	466	226	231
<b>2004</b>	215	544	507	253	236

Source: Calculations from HINK/HEK and Riksdagsarvodet (1998, p 52), for year 1999, 2002, 2003 and 2004 information from the parliament's information service.

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<sup>2</sup> The book is summarised in Piketty (2003).

<sup>3</sup> One methodological problem is that "income" often is defined differently in national accounts and in tax statistics. Another methodological issue is that the information from taxation typically is reported in table form requiring interpolations requiring specific assumptions. Further, the tax legislation might change making comparisons across time more difficult.

<sup>4</sup> Some series, but not all, indicate that the share of top-income earners have increased in Spain during the later decades of the 1990s (Alvaredo and Saez 2005). In Finland the income share of top-income earners increased rapidly during the 1990s, while there are no clear signs of changes during the fifteen years preceding this; see Riihelä et al (2005).

<sup>5</sup> Riihelä et al (2005) use surveys to study top incomes in Finland. It uses 1966 (or for some series a later year) as starting point, thereby not covering the first half of the 1900s as we do.

<sup>6</sup> Roine and Waldenström (2005) present a time series for gross income for top-income earners in Sweden covering each year since 1942 as well as years prior to this based on published tax data and national accounts. When appropriate we compare our results with theirs. In the surveys we work with, realised capital gains are included in the variable disposable income. However, in many other countries this is not the case, making the micro data approach to studying top-income earners less attractive.

<sup>7</sup> Using the same variable, Gustafsson and Palmer (2002) report Gini coefficients for the period 1975 to 1998. In 1990 the tax basis was broadened (in order to include more compensations in kind and realized capital gains previously not subject to income tax). To facilitate comparisons both forward and backward over these years, Statistics Sweden has compiled data using both the old and new definition for 1989 and 1990. That is why our figures show two values for these years.

<sup>8</sup> Roine and Waldenström (2005) report decreased income shares for top-income earners from 1903 and increases from the beginning of the 1980s.

<sup>9</sup> The survey was made in 1986, 1992 and 1996. "Elite groups" were defined based on the respondents' occupations.

<sup>10</sup> For a discussion of methodological problems when comparing top-income shares across countries, see Atkinson (2005b).

<sup>11</sup> In order to make comparisons, our estimates are based on gross income; the sum of market or factor income and public transfers minus income taxes. There is a break in the Swedish

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series due to the tax reform at the beginning of the 90s. Therefore we link the time series using the two values that are available for 1989 and 1990.

<sup>12</sup> The positive coefficients for two out of three time trends for New Zealand are estimated with high t- statistics, and are stronger than for Sweden. For India, where the tax base is narrow, only a time series for the highest centile is available. As reported in Table 2 it indicates a more rapid increase than for Sweden. As we lack detailed information for Germany and Switzerland for the years under study, we have not estimated time trends for them.

<sup>13</sup> We obtained the stock index from Statistics Sweden, Statistical Year Book, and put the index to 1 in 1978.

<sup>14</sup> Roine and Waldenström (2005) report gross income for top-income earners including alternatively excluding capital gains. They find that while the former showed increased income shares for top income earners, this was not the case for the latter.

<sup>15</sup> In 2006 there is no central government tax on income between 0 and 313 000 SEK.

<sup>16</sup> All computations are made for the entire population, i.e., unrelated to whether or not the individuals are employed.

<sup>17</sup> We estimate tax rates for the various categories of income receivers reported in Figure 4 as a function of time (after linking the series). For deciles 1 – 9, and for p 99 – 100, the coefficients are not significantly different from zero at the five-percent level, while the opposite is true for the negative coefficients obtained for p 90 – 95 and p 95 – 99.

<sup>18</sup> The self-employed are excluded from the population under study. While the computations in the preceding sections refer to household income and the individual being the unit of analysis, in this section the individual is income unit as well as unit of analysis. Note that the sample under study in this section is smaller than in the preceding section. It varies between 6 642 persons and 11 769 persons meaning that estimates of the wage proportion for the top centile is based on 66 persons in 1975 and 117 persons in 2002.

<sup>19</sup> Albrecht et al (2003) analysed data from the Swedish Level of Living Surveys 1968, 1981 and 1991 as well as information from LINDA 1992 and 1998. For the years 1981 to 1998, Johansson et al (2005) have used HINK/HEK to study the average wage gap for men and women by estimating wage functions. Their decomposition method shows that some of the characteristics may explain a part, but not all, of the mean gender wage gap.

<sup>20</sup> Actually there is a decrease at the top 5-percent from 1995 to 2004, but this is based on a small number of observations. The conclusion of no long run trend is supported when we estimate the female wage as a proportion of male wage at top 10 and 5 percent using time as the explanatory variable, as the coefficient for the time variable is estimated with a low t- statistic. When a similar model is estimated for the average gender wage gap we find a negative coefficient that is significantly different from zero at the 7-percent level.

<sup>21</sup> We limit the study to the salary for parliament members, excluding, for example, living allowances. The procedure through which the salary is determined has changed during the

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period studied here. In the past, the intention was for the salary to match the average wage of a civil servant of a particular rank (for example a judge). This principle was abolished in 1994 and since then a council established for such purposes determines the salary, meaning that members of parliament decide their own salaries. See Riksdagsarvodet (1998, p 50). In Table 5 (as in Table 4), the individual is the income unit as well as the unit of analysis.