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Waldenström, Daniel

2009

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*Citation for published version (APA):*

Waldenström, D. (2009). *Lifting All Boats? The Evolution of Income and Wealth Inequality over the Path of Development*. [Doctoral Thesis (compilation), Department of Economic History].

*Total number of authors:*

1

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## Lifting All Boats?

The Evolution of Income and Wealth Inequality  
over the Path of Development

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Media-Tryck, Lunds universitet, 2009

Distributed by:  
Media-Tryck, Lund University  
P.O. Box 117  
221 00 Lund  
Sweden

[bookorder@se.lu.se](mailto:bookorder@se.lu.se)

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ISSN 1400-4860  
ISBN 978-91-628-7924-2

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## Acknowledgements

My career as an economic historian began twelve years ago when entering the graduate program in economic history at the Stockholm School of Economics. After having defended my licentiate thesis in 2000, I switched to the graduate program in economics and gained my doctorate. Despite this switch, my subsequent academic research has predominantly dealt with historical matters. The step back to economic history in order to complete a new dissertation project was therefore not very large.

Writing this book would not have been possible without the support of a number of people. From the economic history department at Lund University, Christer Gunnarsson and Jonas Ljungberg provided excellent guidance in the finalization stages of the thesis.

Magnus Henrekson, director at my present workplace, the Research Institute of Industrial Economics (IFN), and my former supervisor at the Stockholm School of Economics, has been a constant source of academic inspiration and moral support without which this dissertation would not have existed.

Several of the chapters have been jointly written with other scholars. First and foremost, Jesper Roine at SITE at the Stockholm School of Economics, who has been my primary collaborator over the last few years. It is easy to see the importance of his contribution, when you note that he has co-authored five of the seven chapters!

I would also like to thank my three other co-authors, Henry Ohlsson at Uppsala University (Chapter 4), Jonas Vlachos at Stockholm University (Chapter 5) and Anders Björklund at SOFI, Stockholm University (Chapter 6). Having had the opportunity to work with—and learn from—these eminent scholars has been a true pleasure.

Håkan Lindgren supervised me in my first period as a graduate student in economic history at the Stockholm School of Economics. His scientific and personal insights gave me an excellent start as an economic historian.

Finally, I owe special thanks to my mother-in-law, Florica Constantinescu, for her support of our family. Without her help I would probably not have been able to write this thesis. I am also grateful for my family's patience and support. Nina, Johannes and Gillis are a great reason to get up every morning.

Daniel Waldenström, Täby, September, 2009



# Chapter 1

## Introduction

### 1.1 Inequality in historical perspective

In a famous quote attributed to John F. Kennedy, the question of the extent to which improvements in the general economy benefit everyone, is captured by the analogy of development being “A rising tide” that “lifts all boats”.<sup>1</sup> The study of this question, i.e., the study of the relationship between inequality and development, is central to economics and history. From fundamental issues about whether market forces have an innate tendency to increase or decrease differences in economic outcomes, to much debated questions about the effects of government policies, distributional concerns are always present. Inequality is a natural part of a functioning market economy, with economic outcomes reflecting the different efforts and talents of individuals. Yet, too high levels of dispersion of incomes and wealth could be detrimental to society through hampered growth rates and eroding social structures across different groups.

In order to understand the forces driving economic inequality as well as its long-run impact on society, we need to study trends in inequality over time. Most institutions that shape—and are shaped by—inequality evolve only slowly and hence a long-run perspective is crucial to detect the relationships of interest. For example, the spread of owner-occupied housing among the larger population in Sweden in the middle of the twentieth century, partly due to government-subsidized loans, had a first order impact on distribution of personal wealth.<sup>2</sup> Educational reforms aimed at raising human capital levels among low-educated groups have been found to equalize the distribution of incomes over the long run (see, e.g., Goldin and Katz, 2008).

Despite the strong case for studying long-term trends in economic inequality, a paucity of hard statistical evidence has since long constrained researchers from such pursuit. When commenting on the views on inequality expressed by nineteenth century hall-of-fame economists

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<sup>1</sup> I am not the first to use this quote in the context of academic studies dealing with economic inequality (see, e.g., Hines, Hoynes and Krueger, 1997, and Andrews, Jencks and Leigh, 2009). In passing, it can also be noted that Kennedy never used this sentence to explicitly address issues concerning taxation of the rich, as some people have subsequently argued (see further the discussion in Lazere, 2009).

<sup>2</sup> See further the analysis in Chapter 3 in this dissertation on this issue.

Robert Giffen and Alfred Marshall, the more recent economic historian Peter Lindert bluntly states the following: “They were bluffing, of course. None of them cited any serious size distributions of income or wealth, nor any believable average incomes or wealth holdings for major economic classes.” (Lindert, 1986).

In the early postwar era, improvements were made when a few economic historians and economists started putting together the strains of historical inequality estimates that were available from past works (see, e.g., Williamson and Lindert, 1980). The majority of inequality researchers during this period, however, turned their back on the historical sources and focused instead on the creation of new individual-level micro datasets, often based on large-scale surveys among the current population. Micro-based evidence offers detailed distributional information of the population as whole. Its opportunity for examining long-term inequality trends is, however, limited. Moreover, few micro-datasets have been collected and implemented in coordinated manners across time and countries, therefore offering a scattered picture of historical trends in income inequality. As Anthony Atkinson expressed it: “Figures collected at different dates are often not comparable and hence do not allow conclusions to be drawn about changes over time” (Atkinson, 1999).

The dissatisfaction with these scattered datasets as source for inequality trends recently inspired the French economist Thomas Piketty to construct new homogenous series of income and wealth concentration over most of the twentieth century (Piketty, 2001). Piketty adopted the basic approach of Simon Kuznets (1953, 1955), using compilations of personal tax returns as tabulated distributions that are available in most countries for long periods. Early on only people with high incomes were obliged to pay taxes and hence included in the tax statistics. Relating these top incomes to calculated reference totals for the whole population and its incomes, however, researchers have been able to construct top income shares over the entire twentieth century. While limited in their coverage of the population, the final series are sufficiently detailed and rich, not least in terms of income composition, to offer unique long trends in inequality as well as an opportunity to study the interactions between inequality and economic growth.

In passing, it should be noted that at the same time as Simon Kuznets made his contributions the Swedish economist Ragnar Bentzel (1953) independently published a study of the Swedish income distribution in the 1930s and 1940s, using almost the same approach as Kuznets did, i.e., relying on historical tax returns data and reference totals computed from national accounts. The studies of Swedish top incomes presented in this dissertation have benefitted greatly from Bentzel’s work.

The remainder of this introductory chapter is organized into five sections. The next section provides a motivation for why a specific focus on the top of the economic distribution is warranted. Then, the methodological approach and its problems are discussed. After that two thematic extensions are presented, one investigating the possible presence of a Swedish Kuznets Curve and the other examining how a financial crisis affects inequality. In the last section, I outline the subsequent contents and review the main findings of the thesis.

## 1.2 Why study the rich?

The historical evidence on economic inequality studied in this dissertation refers mainly to the top of the distribution. Focusing on the rich is not common in inequality research. Typically, researchers have preferred studying the lower ends and the particular welfare issues concerned with them. But as the English economic historian R. H. Tawney remarked, “What thoughtful rich people call the problem of poverty, thinking poor people call, with equal justice, the problem of riches” (Tawney, 1913, p. 10). There are, in fact, a number of reasons for why an enhanced knowledge about the relative status of the rich is motivated from a scientific viewpoint.

To begin with, the rich are doubtlessly an important group in society. They constitute a significant tax base, they hold considerable shares of ownership of the corporate sector and through these channels typically enjoy a disproportionate influence on the economic and political agenda. In other words, if we wish to fully understand what forces drive economic and political change we need to keep track of the status of those with the highest incomes and fortunes.

From a purely fiscal perspective, the rich are important since that is where the money is. In the year 2006, the highest paid tenth of all Swedes earned one third of all before-tax incomes and paid almost four tenths of all taxes. The top wealth decile in Sweden owned the same year over half of all personal wealth in the country. Such concentration of resources is not unique for Sweden. Quite the contrary, in fact. For example, the richest decile in the United States earned about half of all incomes (Piketty and Saez, 2003) and owned two thirds of all wealth (Wolff, 2002). Given the fiscal needs of government, studying the rich as tax objects is therefore highly relevant.

Another, more pragmatic, reason for studying the rich relates to the unique availability of historical data on the income and wealth top. Inequality estimates based on top income or top wealth shares can hence span considerably longer time periods than any other of the common ine-



quality measures used.<sup>3</sup> Given the right adjustments they are also homogenous and comparable over time as well as across countries. Furthermore, the long-run trends presented here are not confined to only depicting the status of the rich. In fact, top income shares are highly correlated with other broader measures of income inequality, e.g., the Gini coefficient (see Leigh, 2007, 2009 and section 1.3 below).

Furthermore, recent findings in the top income literature suggest that the rich are not all alike but rather a quite heterogeneous group in society.<sup>4</sup> Both in terms of the size and structure of their income and wealth, the differences between the lower and upper parts of the top decile are huge. Such detailed knowledge about the top is crucial for distinguishing between different explanations of what drives inequality. For example, to differentiate between theories which, on the one hand, focus on changes in the relative wages of skilled and unskilled workers and, on the other hand, theories that stress the importance of savings and capital formation we must have details about top incomes.

## 1.3 Measuring inequality: Methodological issues

### 1.3.1 Estimating top income shares

As has already been noted, much of the traditional research on trends in inequality has been based on observations drawn from scattered and disparate data sources. Peter Lindert emphasizes how this literature has been confined to studying under the light of lamp-posts, “illuminating some aspects but leaving others in the dark” (Lindert, 2000). For example, researchers have blended wage and income series, which is conceptually wrong since (labor) incomes are the product of the wage and the amount of labor exerted. When surveying the landed classes, estimates of land rents or bank interest rates have been spliced with distributional measures based on estate or wealth tax data. These erroneous measures results in a lack of homogeneity in the final inequality series, and renders huge problems in drawing robust conclusions about the actual historical trends.

The project launched by Piketty (2001a) was aimed at solving specifically this kind of data-related problems. Piketty’s approach, as already

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<sup>3</sup> In fact, it was the dissatisfaction with the scattered data points in most inequality datasets that spurred Thomas Piketty to write his book on French inequality (Piketty, 2001) which started this new wave of research.

<sup>4</sup> As an example of just how different the rich are from each other, *Wall Street Journal* reporter Robert Frank describes in his book *Richistan* (Frank, 2007b) how the millionaires in today’s U.S. can be divided into four different social classes based on where in “Richistan” they live: “lower”, “middle”, and “upper Richistanis”, and, finally, the richest living in Billionaireville.

mentioned, built on the seminal contributions of Simon Kuznets (1953, 1955) using historical time series of tax return data available in a large number of countries for most of the twentieth century. The calculation of top income shares starts by collecting data from income statements in personal tax returns reported for different income classes.<sup>5</sup> Incomes in these sources are typically reported as gross total income, which includes income from labor, business and capital (and sometimes realized capital gains) before taxes and transfers. While being comprehensive in the coverage of income sources and reasonably well in reflecting market outcomes, the total income concept may not be the best to represent dimensions of personal welfare. For such considerations, disposable income, which is income after *after* taxes and transfers preferably at the household level (with adjustment for the number of adults and children) is arguably more appropriate.

Top income shares are computed by dividing the observed sums of incomes in different top fractiles by the sum of all incomes earned by the entire (tax) population, had everyone filed a personal tax return. Assuming that top incomes are approximately Pareto distributed, standard inter- and extrapolation techniques can be used to calculate the income shares for various top fractiles, such as the top 10 percent (P90–100), the top 1 percent (P99–100) or the top 0.01 percent (P99.99–100). In most countries only a minority of the people filed taxes before World War II and the computation of reference totals for income regularly include both tax statistics and various estimates from the national accounts.

### 1.3.2 *Estimating top wealth shares*

It is fair to say that the majority of past scholarship in economic inequality and mobility has been centered on incomes. Much less attention has been given to the role of wealth. Neglecting wealth issues is problematic for several reasons. While there are indeed numerous situations where incomes represent the natural unit of observation, in many cases the significance of wealth is overlooked.

Personal wealth is an important component of the well-being of families and closely linked to central aspects of economic inequality and mobility. For example, wealth is important as it, together with income, determines the possibilities for individual consumption. According to the classical Haig-Simons definition, income should ideally be measured as the value of consumption plus the change in real wealth. In other words, income is that which we can consume while keeping our real wealth intact and the distribution of wealth is hence an important part in determin-

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<sup>5</sup> For a more detailed treatment of the construction of top income shares, see Chapters 2 and 5 in this thesis.

ing our welfare. Furthermore, wealth acts as self-insurance against negative income shocks and is also a means of smoothing consumption over the life-cycle. Additionally wealth is arguably important for social status and possibly also for (political) influence in society. This means that the wealth distribution is central to the study of individual well-being.

To studies of historical inequality paying attention to the wealth distribution has a specific meaning because of its role in economic development. Wealth holdings are central for the possibilities individuals have to pursue different occupations, especially in the presence of credit constraints. Assets can serve both as collateral and as a means of financing entrepreneurial undertakings, and the distribution of wealth is, therefore, an important determinant for the path of development. Consequently, the interplay between the distribution of wealth and development is central to many theories attempting to explain the cross-country differences in long term development.

When measuring the concentration of wealth, approximately the same methodology is used as when measuring top income shares. That is, observed top wealth holdings for fractiles in the top are divided by the reference total for all personal wealth. There are, however, some important differences between estimates of income and wealth inequality. First, the sources for personal wealth data are not as straightforward as the income distribution data are and they also pose a different set of methodological challenges. In particular, older wealth sources are mostly based on either wealth tax returns or estate tax returns, but for more recent periods researchers also use survey data. None of these sources are typically available on a regular basis and for many countries they are not available at all. For this reason, they are less reliable in terms of determining the true trends and variability of wealth inequality than is the case for incomes.

Furthermore, the different sources display the wealth distribution for different entities. While wealth tax data or surveys reflect the distribution of the living population, estate tax data and probate records reflect the distribution of the deceased. Since those who die during a year is not a representative sample of the living population (e.g., since the old are heavily overrepresented), these two distributions are not immediately comparable. The usual procedure used by researchers to make the comparable is by applying so-called *mortality multipliers*, which are inverse mortality rates for different age, sex or social status groups. In this

way, the distribution of estates can be transformed so as to reflect the wealth distribution among the living population.<sup>6</sup>

Another problem with estimating wealth distributions concerns the difficulties associated with valuating assets. Tax statistics mostly refer to tax assessed values of real and financial assets, despite the fact that it is the market values that are the most economically relevant. Fortunately, the computation of top wealth shares turn out to be fairly insensitive to the use of either tax assessed or market values, as long as the same kind is used in both the numerator and denominator. This is shown by the sensitivity analyses in Chapter 3 of this dissertation.

### *1.3.3 Measurement problems and comparability*

As has already been indicated, the data-related and methodological challenges arising along with the estimation of long-run trends in economic inequality are manifold. Some are due to the fact that tax data were originally not assembled for the purpose of future research on distribution, but rather as part of an administrative process spelled out by tax laws and bureaucratic needs. Because of this, much of the efforts embedded in the current top income literature have focused on ways to deal with these challenges.

One important source of problems with tax-based income and wealth data come from tax avoidance and tax evasion behavior among taxpayers. Arguably, taxes provide people with incentives to minimize their taxable income or wealth, and this can potentially influence the amounts reported on tax returns. More importantly, if avoidance varies over time, countries and the distribution, serious measurement errors may arise. The role of tax avoidance has been given special treatment because of its potentially large impact on the final series. In some instances the extent of avoidance appears to have been notable such as the case of the largely tax-driven capital flight from Sweden in the 1980s and 1990s (see in Chapter 3). In many cases, however, researchers have found the impact of avoidance and evasion on both level and long-run trends in inequality to be modest. One intuitive explanation for this robustness is that the top income data series are based on reported incomes *before taxes*, i.e., incomes to a large extent unaffected by tax minimizing behavior.

Other data problems relate to the structure of the underlying data, meaning the way data were originally collected and reported by various statistical and tax agencies. In the countries covered in this literature so far, there are several shifts in the definition of income or wealth or the tax

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<sup>6</sup> The most common technique is based on mortality multipliers, where the sex, age and often social status of the diseased is used (see further Atkinson and Harrison, 1978, ch. 3).

units required to report these. Mostly, these changes are products of changes in policies for data collection routines and tax legislation. For the early periods, moreover, there are often missing years during which data were not collected or reported at all. This causes breaks in the time series and renders difficulties in determining correct trends and degree of variability in incomes and wealth.

Many, but far from all, of the measurement problems have been alleviated through adjustments and consistency checks presented in the past top income literature. For example, many changes concern one-time shifts, which can fairly easily be controlled for through applying multipliers to either pre- or post-break series. Overall there is little evidence suggesting large systematic errors in the reported series.<sup>7</sup>

The validity of top income shares can also be checked by comparing them with other measures of income inequality. In particular, how well do top income shares correlate with the widely used Gini coefficient? This is in fact not only a consistency check, since it also relates to the usefulness of top shares as proxy for overall income inequality. Many of the theoretical models relating inequality and economic development do not specifically apply to the status of the rich, but if their relative standings correlate with the overall income or wealth dispersion this may still be a relevant analytical tool for evaluating these theories.

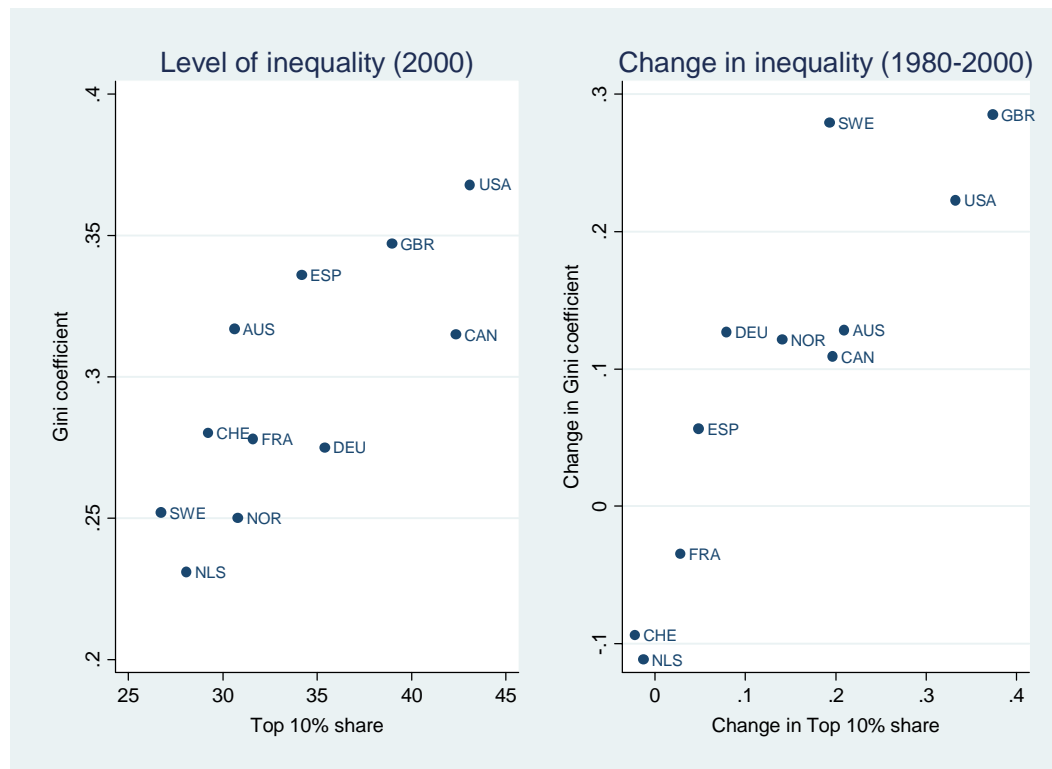
Figure 1.1 displays the cross-country relation between Gini coefficients and top income decile shares for eleven industrialized countries.<sup>8</sup> In the left panel, levels in 2000 (or years close to it) are related, indicating a strongly positive correlation of 0.78. In the right panel, changes in inequality between years around 1980 and 2000 are shown, again indicating a strong positive relationship with a correlation of 0.89. In a similar comparative analysis of top income shares and other measures of inequality, Leigh (2007, 2009) finds clear correlations, suggesting good external validity of top income shares.

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<sup>7</sup> For an extensive account of the different kinds of adjustments and robustness checks made by researchers in the top income literature to make their series homogenous and comparable, see Leigh (2009).

<sup>8</sup> Data on Gini come from the Luxembourg Income Study (2009), and use net of tax incomes. Data on top income shares come from chapter 5 and are gross of tax.

Figure 1.1: Gini and top income deciles in 11 countries.

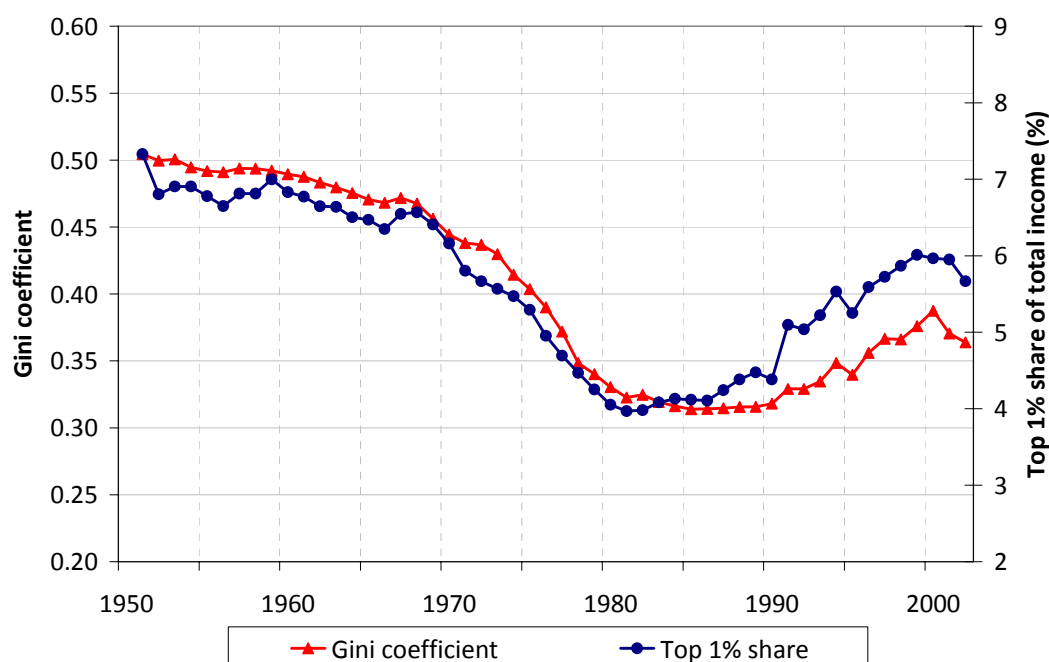


*Note:* The top income shares are based on gross-incomes and the Gini coefficients (from the Luxembourg Income Study project) on net incomes.

Turning to the intertemporal (time series) correlation between the Gini coefficient and top income shares, one cannot do a similar cross-country analysis due a lack of data. Instead, I confine myself to examining one single country during the postwar period: Sweden. Figure 1.2 depicts the gross of tax Gini coefficient and top income percentile in between 1951 and 2002. Well in line with the cross-country analysis, the time series correlation also appears to be strongly positive between the Gini and the top income shares. Having said this, one should not rule out the possibility that top shares and Gini coefficients could well diverge specific time periods.<sup>9</sup>

<sup>9</sup> For example, Prados de la Escosura (2008) provides examples of period when the Gini coefficient and the top 0.01 percentile income share diverged strongly, e.g., during the 1950s. It should be noted, however, that his Gini series is computed from broad aggregates of wages and land rents and not, as the top income shares, from actual distributional income sources.

Figure 1.2: Gini and top income percentile in Sweden, 1951–2002.



*Note and sources:* Both series use gross total income including realized capital gains. Gini data are from Johansson (2006) and top income data from Chapter 2, this thesis.

Overall, there are a number of measurement problems that plague the historical series on top income and wealth shares. Although some of these are difficult to fully account for, a multitude of consistency checks suggest that the final series are quite robust in terms of both levels of and trends in inequality. This impression is underlined by the remarkable similarities in inequality patterns between top income shares and Gini coefficients. In other words, the data on income and wealth concentration analyzed in this dissertation indeed appear to be valid indicators of inequality, useful for further analyses.

#### 1.3.4 *Inequality of outcome or opportunity?*

Up until this point the type of inequality dealt with has been one of annual cross-sections in the income or wealth distributions. Such representation of inequality corresponds to the inequality of outcomes.<sup>10</sup> When thinking more deeply about the notion of inequality, however, it becomes obvious that a purely static and outcome-oriented measure cannot address all relevant aspects of inequality. *The Economist* wrote on June 15, 2006: “Who cares if the boss earns 300 times more than the average working stiff, if the stiff knows he can become the boss?”. The message of this

<sup>10</sup> Note that the type of “outcome” considered here predominantly expressed as total income before taxes and transfers, hence without any of society’s measures to redistribute resources to dampen the effect of pure market outcomes.

sentence is that our views of economic inequality does not solely rely on how much more income the top person earns relative to some average person, but also how this top person came to earn such a high salary in the first place. In other words, our views and interpretations of inequality do not only include the static notion but also a dynamic perspective on inequality. Such a dynamic perspective means putting more weight on the *mobility* in the income and wealth distributions. What are the possibilities that people have to move up or down the economic ladder? Such a view refers to inequality of opportunities in society. Questions about fairness and efficiency—two words with outmost policy relevance—are directly linked to such a view. As hunched by the Economist quote above, the distribution of outcomes is interpreted differently depending on how have actually people reached their position in society, e.g., if they have become successful because of their own efforts or thanks to a certain family background. Close links between parents and offspring in terms of economic status usually indicate high inequality of opportunity.

Questions about inequality of opportunity are hence closely related to aspects of economic mobility. Yet, it is not the case that more mobility automatically implies more equality of opportunity. There are, in fact, a number of parental influences that can still be in play without influencing what people normally think of as equality of opportunity. The political philosophers John Roemer argues that there is a hierarchy of sources of parental influence, which can be ranked according to their degree of social acceptance (Roemer, 2004). These four are, from the least to the most socially accepted: social connections leading to better outcomes in education and wealth; family culture and investments influencing beliefs and skills; genetic transmission of ability; the influence of preferences and motivation to hard work. While parents' social connections is regarded as a force reducing equality of opportunity, parents' role in shaping work ethics or saving motives is not. Hence, equality of opportunity does not imply zero correlation between outcomes across generations.

When assessing socio-economic mobility empirically researchers typically address two different kinds of mobility. One is the study of mobility of individuals or households within a career or lifetime, hence tracking peoples' relative status between time periods (see, e.g., Kopczuk, Saez and Song, 2009 on U.S. postwar earnings mobility). The other approach is to associate the economic status of a generation with the equivalent status of its parent generation. Such intergenerational linkage allows researchers to identify the role of initial conditions for subsequent success. For example, when explaining the persistence in income or earnings status from parents to their offspring, researchers have not only studied the role of income and earnings as such, but also the contributions of edu-



cational choice, social traits and even intelligence (see Bowles and Gintis, 2003).

In the past research dealing with intergenerational economic mobility, most of the attention has been paid the broad picture for the population as a whole. Questions have then mainly concerned the size of the average level of mobility for a specific country at a specific point in time. Less attention has been paid to specific issues concerning mobility in the top of the distribution. In particular, no one has answered questions such as who becomes rich and why? What institutional factors matter in this process and are there any policies that assist people to realize their innate abilities? Is it easier to succeed in economies with relatively small income dispersion or is rather it the other way around? In chapter 6 of this dissertation, some of these specific questions are addressed by studying the relationship between economic successes among Swedish men born in the 1960s and their fathers.

## 1.4 Further perspectives on the rich

### 1.4.1 *Is there a Swedish Kuznets Curve?*

In his presidential address at the American Economic Association in 1954, Simon Kuznets presented a theory—or a “collection of hunches” as he referred to it—for why inequality changes during economic development. Kuznets suggested that increases in inequality during early stages of industrialization reflected increasing productivity gaps between the industrial and agrarian sectors. As labor started flowing from low-wage agriculture to high-wage industry, the gaps gradually shrunk and finally vanished. Income inequality hence follows an inverse-U pattern over the path of industrialization, a pattern later been named *the Kuznets Curve*. As pointed out by Atkinson (2005), however, Kuznets (1955) also emphasized a second mechanism causing widening inequality over the path of development namely the increased concentration of capital.

There are few theories in economics that can match the Kuznets hypothesis of structural change in terms of the number of times it has been empirically evaluated. Overall, it is fair to say that consensus is not reached regarding its validity. The case of Sweden is possibly an exception. Several previous scholars have in fact suggested Sweden to display support of the Kuznets hypothesis. In his survey of cross-country evidence on inequality, Christian Morrison stated that “Sweden offers a clear example of Kuznets’ curve between 1750 and 1970” (Morrison, 2000, p. 227). In his study of salaries across sectors, Söderberg (1991) found that wage differences between skilled and unskilled workers increased from

1870 to 1914, dropped sharply during World War I, increased again between 1920 and 1930 before it turned down for the rest of the studied period until 1950. As industrialization in Sweden started around 1870 and peaked around the turn of the century, the increase in wage inequality between 1870 and 1914 and the declining thereafter, has been interpreted as an example of Kuznets' curve.<sup>11</sup>

Can the recent series with top income shares add any value to this discussion about the explanatory power of the Kuznets curve? Perhaps. On the one hand, the structure of the tax-based income data underlying these top shares is not optimal for investigating the validity of Kuznets' theory. Specifically, there is no sectoral separation and neither are there good information on wages or wage gaps as functions of, e.g., education or vocational training. On the other hand, Kuznets himself used precisely these data to create his theory in the first place. As I have already tried to argue, moreover, when it comes to represent long-run trends in income inequality there are few alternatives that can match the historical consistency of top income shares.

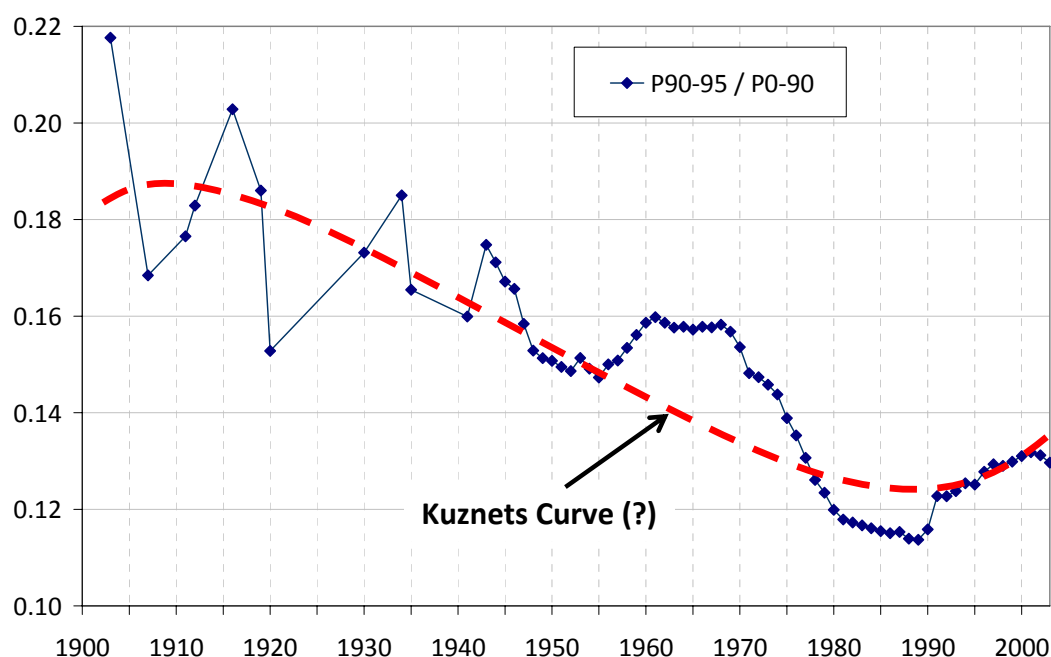
According to Piketty (2001a), a general conclusion from the top income literature is that the forces driving twentieth century inequality are not those described by Kuznets. The case of Sweden may, however, be different. A main finding in chapter 2 is that drops in top capital income and the rise of progressive taxation were important for the development of inequality in Sweden. Do these findings contradict Kuznets' structural change hypothesis, which rather focuses on changing wage differentials across workers with differing skill composition? Not necessarily. Using the fact that wages constitute almost all of the incomes going to the high-income groups just below the absolute top, e.g., P90–95, this group is likely to represent the highly skilled workers in Kuznets' model. By relating their incomes to the rest of the (mainly) wage earning population, i.e., P0–90, Figure 1.3 displays a relationship that could be interpreted as support for a Kuznets curve. Specifically, it shows the ratio between the income shares of P90–95 and P0–90 and the downward sloping pattern seems to be in line with what has previously been found by Söderberg (1991).<sup>12</sup>

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<sup>11</sup> Jungenfelt (1966) is another example of a study offering support of Kuznets' hypothesis in the Swedish context.

<sup>12</sup> The data in the figure is excluding capital gains (we will study series when including capital gains for the other countries below). The pattern is similar when we instead look at the ratio between average income in P90–95 and that of P0–90 as well as when calculate this ratio using earned income only.

Figure 1.3: Is there a Swedish Kuznets Curve?



*Note:* The figure shows the ratio of P90–95 to P0–90.

The Swedish wealth distribution suggests the opposite as wealth concentration decreases at least over the first 80 years of the twentieth century. But this cannot be taken as direct evidence against Kuznets hypothesis. Much of the change in wealth concentration is due to a rise in popular wealth and hence has not necessarily changed what concerned Kuznets namely the distribution of “income-yielding assets” (Kuznets, 1955, p 7). However, assuming that changes in the income share from capital reflects changes in the concentration of such capital this has also decreased for all top groups except the in very top.

With respect to the Kuznets’ structural change hypothesis for Sweden, hence, the tax-based income and wealth data suggest two things. First, if capital owners at the top of the distribution are excluded, and focus is put on the ratio between two groups whose income mainly consists of wages—those with the highest wages and the rest—a pattern emerges that is consistent with previous findings in support for the Kuznets curve. Second, however, these changes are not the main explanation behind the secular decline of inequality in Sweden. Even though we do see movement in what approximately constitute the ratio of income shares of high skilled and low skilled workers, the changes at the very top of the distribution are quantitatively much more important in explaining income equalization.

### 1.4.2 Financial crises and the rich

The world is currently undergoing a severe financial and economic crisis. Its impact on the welfare of citizens will be profound, but we still do not know exactly how this impact will affect different groups in society. Will the poor lose relative to the better endowed? Or will capital owners take the biggest hits?

Theory provides limited guidance to the distributional effects of a financial crisis. One likely effect of a crisis is that it causes a “credit crunch” in the economy, meaning that the amounts of credits are reduced. If this happens, the crisis will be especially punitive on the financially constrained in society who needs loans for their current activities, e.g., penniless entrepreneurs. Such credit crunch-effects will therefore increase income inequality. On the other hand, the poor are typically workers earning their income from relatively fixed wage contracts. Crisis-related income shocks would hence hurt them primarily through the risk of unemployment rather than through wage cuts, and if they go into unemployment they are typically sheltered by the social security system (in Western countries).<sup>13</sup> The rich are deeply involved with the financial sector, holding most of their assets in corporate stock and often being heavily indebted. Many of the top earners also get a disproportionate share of their incomes in the form of capital-based reimbursements (e.g., stocks or stock options).<sup>14</sup> A short-run effect of a financial turmoil would therefore be a substantial reduction of the value of both the wealth and the size of capital-based incomes accruing to the rich. As noted by Hoffman, Postel-Vinay and Rosenthal (2007), however, it is much less evident what the long-run effects on the rich will be. If the rich will lose half their wealth but the middle-class entrepreneurs will lose all, it may well be the case that the rich will stand to gain from the crisis over time thanks to a strengthened market position.

Financial development over the long run seems to disproportionately benefit the rich. The analysis in Chapter 5, using the compiled set of cross-country panel data on top income shares to study the determinants of inequality over the twentieth century, finds that finance increase top income shares. Banking crises appears to play a significant role in this process. Specifically, the analysis shows that the outbreak of banking cri-

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<sup>13</sup> I only discuss the effects from financial crises on inequality within the developed world. For treatments of the effects in developing countries, which are likely to be quite different in a number of ways, see, e.g., Ferreira and Ravallion (2008).

<sup>14</sup> On the predominance of stocks and options in today’s financial elite, see Jensen, Murphy and Wruck (2004).

ses is related to large negative effects on the income share of the rich but has no clear impact on the rest of the population.

We have less systematic evidence for the top of the wealth distribution in order to be able to say something similar regarding the impact of financial crises. Instead we must resort to anecdotal evidence. One such observation is the reductions in the largest fortunes documented for several countries during 2008 and 2009, which indicate that equalizing motions are in play during the current financial crisis.<sup>15</sup> Historically, there are two especially interesting country case studies for which this can be done: United States during the Great Depression and Sweden during the banking crisis of the early 1990s.<sup>16</sup>

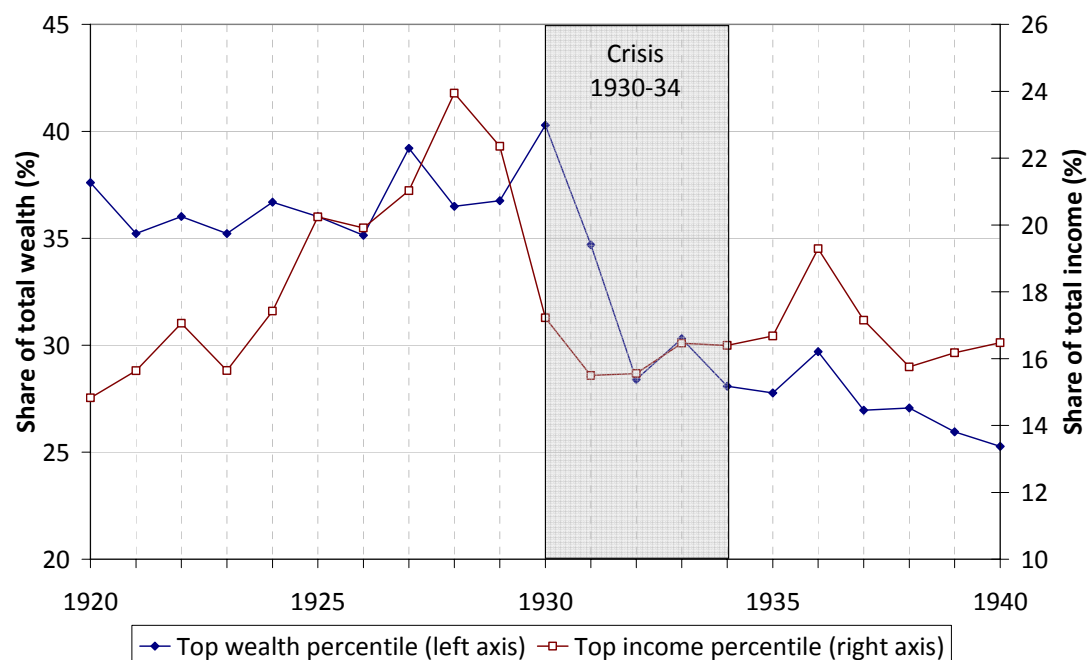
Figure 1.4 shows the top percentile in the U.S. wealth and income distributions between 1920 and 1940, i.e., a decade before and after the outbreak of the financial (and economic) crisis. It is clear from the figure that both income and wealth rich took substantial blows during the crisis, losing about a quarter of their shares to the rest of the population. This close connection between income and wealth is in line with what previous scholars have found, namely that the rich in pre-war U.S. were dominated by “coupon-clipping” rentiers (Piketty and Saez, 2003). To the extent that some of the top income earners were high paid executives, Frydman and Saks (2008) document that corporate executives had a large share of their compensation in the form stocks and options, but that these plummeted in the early 1930s.

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<sup>15</sup> For example, Sunday Times (2009) report that the thousand wealthiest people in Britain lost a third of their wealth during the 2008 stock market crash.

<sup>16</sup> While these crises have been extensively studied by other researchers, their effects on top wealth and income shares have, to my knowledge, not been analyzed before.

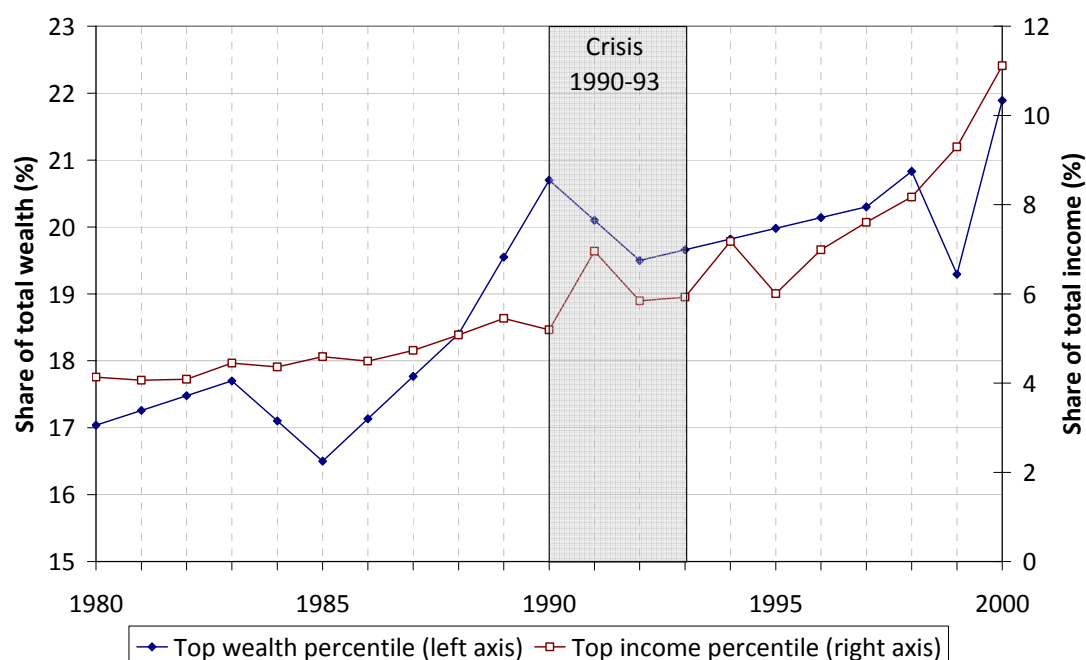
Figure 1.4: The rich during the U.S. financial crisis of 1930–1934.



Source: Incomes: Piketty and Saez (2007); Wealth: Kopczuk and Saez (2000).

Turning to the Swedish experiences in the 1990s, however, Figure 1.5 shows that the impact of financial crises is far from uniform. While top wealth holders lost ground to the rest of the population, no such pattern can be traced in the share of the top income percentile. As discussed at length in Chapters 2 and 3, there were both a number of far-reaching changes taking place during (and partly because of) the financial crisis, such as large drops in the tax progressivity, and large earnings in the corporate sector due to an export-led growth boom which resulted in a substantial value growth on the stock market (real stock returns went up 50 percent between end of 1990 and end of 1993).

Figure 1.5: The rich during the Swedish financial crisis of 1990–1993.



Source: Incomes: Chapter 2 (this thesis); Wealth: Chapter 3 (this thesis).

Altogether, there is considerable evidence on short-run equalizing effects of financial crises. Because of their large stakes in the financial sector and reliance on returns from their financial wealth, the rich is probably the single most vulnerable group during a financial turmoil. From the available historical evidence it is less clear, however, what the precise long-run effects of a financial crises are on overall economic inequality and more research is needed on this issue.

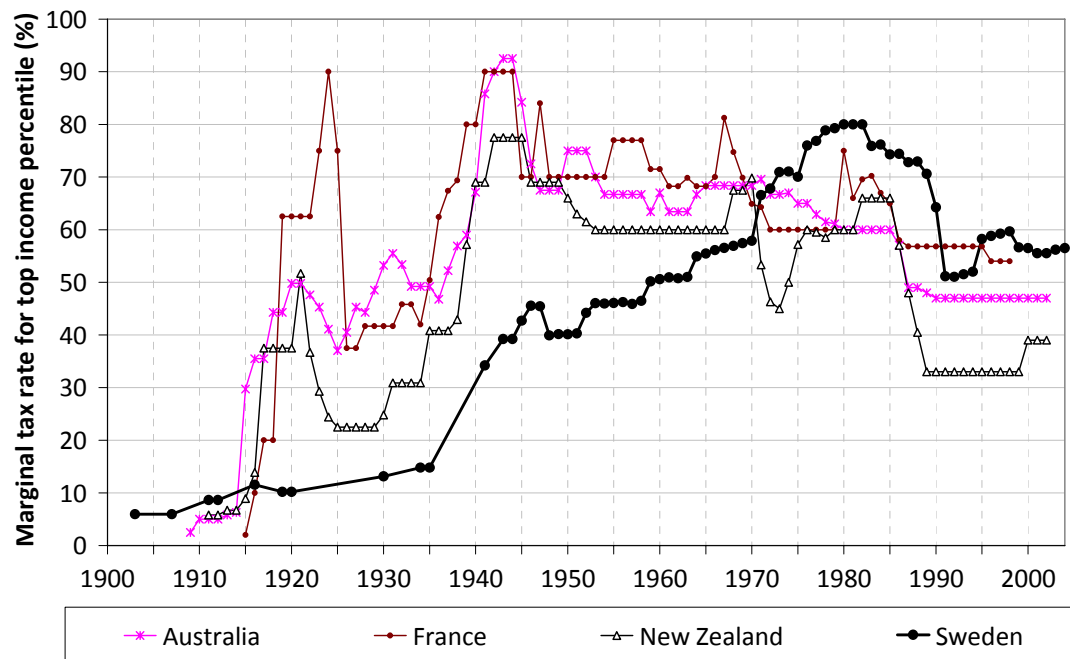
#### 1.4.3 Taxing the rich: Some critical issues

Taxes on income and wealth have existed for a long time, but their structure and importance have varied considerably. Before the industrial era, most of these taxes were proportional, taxing the rich and the poor at one and the same marginal rate. From the middle of the nineteenth century, more “modern” tax systems started emerging in Western Europe and North America. A common feature of these systems was the use of more economically viable tax bases. Instead of almost arbitrarily taxing only some particular income stream or asset value, governments started taxing broader aggregates of income coming from labor, business and capital (Aidt and Jensen, 2009).

The progressivity of income taxation was another new feature introduced in the twentieth century. Initially the difference in tax rates between incomes was quite modest, but as countries from the 1910s onwards extended franchise and increased public expenditures due to wars (Scheve and Stasavage, 2008) and welfare state expansions (Steinmo,

1993) the progressiveness increased rapidly. This general pattern of increasing progressivity is clearly visible in Figure 1.6, which shows the marginal tax rates paid by those with incomes around the 99th income percentile in four countries since 1900.

Figure 1.6: Marginal tax rate paid by the top income percentile (%).



Source: Chapter 5, variable *Margtax1*.

Increased progressivity of income taxes is not the only way in which society started taking out higher taxes of the rich in the early twentieth century. In Sweden, a wealth tax was introduced in 1910 and during World War I yet an additional wealth tax was levied. Governments began at this time to realize the fiscal potential of financial markets, where large values started being built up and transacted at a regular manner. From a redistributive viewpoint, moreover, the early financial markets were an arena for a very exclusive and wealthy elite. Germany introduced in 1896 a tax on stock market transactions, and several other countries followed suit and launched similar taxes in the years thereafter (Waldenström, 2002). Although the transaction tax was initially motivated by externality arguments such as reducing harmful speculation, its political significance as a means to redistribute wealth soon became obvious. In Chapter 7, I study the Swedish securities transactions tax regime and ask whether its practice was really in the public interest (i.e., being an efficient tax base, reducing the negative externalities of speculation) or in the private interest (i.e., whether those receiving tax revenues were more politically influential than those taxed). The analysis clearly shows that the Swedish stock



transfer tax was predominantly in place for political, rather than fiscal or economic, reasons.

After several decades into the postwar period with sustained levels of income tax progressivity, several countries in the Western world have experienced falling tax rates in recent years. In Figure 1.6, this pattern is obvious through the decline in top marginal income tax rates. Piketty and Saez (2006) also show that the fall in progressivity is not confined to income taxation only. When also considering the distributional elements of estate and property taxes, the rich pay today much lower taxes than they did in 1970. Sweden is no different in this respect. The tax reform in 1991 reduced top marginal rates from about 70 to 50 percent and capital income taxes were taxed at even lower rates.<sup>17</sup> The Swedish stock transfer tax was abolished in 1991 and in recent years, the taxation of the rich has been lowered even further; the inheritance tax was repealed in 2005 and since 2007 Sweden has no longer a wealth tax or a property tax (except for a very small local “housing fee”).

Is the drastic decrease in taxation of the rich economically viable? Naturally, this is a big question which cannot be fully answered here. Conventional economic analysis emphasizes that all taxes are associated with a trade-off between efficiency (higher taxes reduce incentives). In general, most taxes have redistributive features and give rise to behavioral responses in order to minimize tax payments (Slemrod, 2000).

Some researchers have started questioning the assumptions underlying this trade-off, in particular concerning the taxation of very rich people. For example, Frank (2000, 2007) argue that the neoclassical premise that people only care about absolute income or consumption increases is basically flawed. If one instead assumes that monetary rewards in the top depend both on relative and absolute pay criteria or that people care about relative on top of absolute consumption, it may well be that taxes to curb income accumulation are not associated with deadweight losses. In another line of critique, Goolsbee (2000) shows empirically that the sensitivity to paying taxes among top income earners has been overstated in previous research. The reason is that researchers have ignored the fact that top earners get much of their income from capital and that such income can be shifted in time to minimize taxation. Taking time shifting (and a few other) responses into account, Goolsbee shows that the efficiency losses associated with from high marginal tax levels are limited.

The taxation of the rich has undergone profound changes over the past century. As Western societies became increasingly industrialized and

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<sup>17</sup> Interests, dividends and capital gains on the sale of financial assets were taxed by 30 percent (with exception for the years 1991 and 1994, when the government extended substantial breaks on capital gains taxes). Capital gains on housing have generally been taxed at a lower rate, about 20–25 percent.

democratic, the rich were taxed at increasing rates. Up until some decades into the postwar era, top marginal income tax rates grew in most developed nations and supplementary taxes on the rich, such as wealth, property and inheritance taxes, were also on the rise. In recent decades, however, countervailing forces bounded the progressivity even turned the wheels around towards decreasing taxes on the rich. Perhaps the most important of these forces is technological development, which makes the rich into a mobile tax base as evidenced by the considerable inter-jurisdictional wealth mobility in recent years. Whether political forces will be able to coordinate and overcome this technological challenge and once again start raising taxes on the rich is an open, and highly intriguing, question.

## 1.5 Overview of the thesis: Does a rising tide lift all boats?

This dissertation consists of six self-contained studies presented in separate chapters. In the first two chapters, new evidence on the long-run evolution of income and wealth concentration in Sweden is presented. The following two chapters compile similar long-run trends in economic inequality from a number of countries, drawing on previous work by other scholars, and draw conclusions on general trends and driving forces. Several important findings come out of the analyses presented. A general result is that whereas nineteenth century industrialization had a mixed impact on inequality across the Western world the twentieth century experience, including a rapid growth of government, educational reforms and the introduction of progressive taxation, uniformly equalized societies. In Chapter 6, the degree of intergenerational income and earnings mobility in Sweden is studied, with specific attention paid to the patterns in the top of the distributions. Chapter 7, finally, examines financial market taxation and to what extent political or economic motives can explain their use in the past.

In the following a slightly more detailed overview of the chapters is provided. Chapter 2, *Top Incomes in Sweden over the Twentieth Century*, presents new homogenous series of top income shares in Sweden during 1903–2006. Starting from levels of inequality approximately equal to those in other Western countries at the time, the income share of the Swedish top decile drops sharply over the first eighty years of the twentieth century. Most of the decrease takes place before the expansion of the welfare state; by 1950 Swedish top income shares were already lower than in other countries. The fall is almost entirely due to a dramatic drop in the top percentile explained mostly by decreases in capital income, while the lower half of the top decile—consisting mainly of wage earn-

ers—experiences virtually no change over this period. In the past decades top income shares evolve very differently depending on whether capital gains are included or not. When included, Sweden’s experience resembles that in the U.S. and the U.K. with sharp increases in top incomes. Excluding capital gains, Sweden looks more like the continental European countries where top income shares have remained relatively constant. A possible interpretation of the results is that Sweden over the past 20 years has been a country where it is more important to make the right financial investments than to earn a lot to become rich.

Chapter 3, *Wealth Concentration over the Path of Development, Sweden 1873–2006*, presents new evidence on the Swedish wealth concentration from the beginning of industrialization in the late nineteenth century to the present. The series presented come from a wide array of new evidence from estate- and wealth tax data, estimates of foreign and domestic family firm-wealth and of pension and social security wealth. The Swedish wealth concentration was at a historically high level in the agrarian state and it did not change much during early industrialization. From World War I up until about 1950, the richest percentile lost ground to the rest of the top wealth decile where relatively income rich households accumulated new wealth. In the postwar period, the entire top decile lost out relative to the rest of the population. Around 1980, wealth compression stopped and inequality increased. The chapter also introduces new ways of approximating the effects of international flows and find that the recent increase in Swedish wealth inequality is likely to be larger than what official estimates suggest.

An international comparison on long-run wealth inequality trends is offered in chapter 4, *Long-Run Changes in the Concentration of Wealth: An Overview of Recent Findings*. The aim of this chapter is to distinguish between changes which seem to be country specific and characteristics shared by all countries. While a historical account of the evolution of the wealth distribution in developed countries is interesting in itself, it can also hold implications for countries that are currently in an early stage of development or in transition. The data used originate from the taxation of wealth and estates. First, recent constructions of new historical series of top wealth distribution for the US, France, the UK, and Switzerland are reviewed. Second, new corresponding data for Denmark, Norway, and Sweden are presented. Comparing Scandinavia to other Western countries is interesting for several reasons. Scandinavia was late to industrialize, and allows for a coverage of the whole period from pre-industrial society until today. The Scandinavian “mixed economies” are extremes in the spectrum of welfare states. Furthermore, Sweden and Switzerland did not take part in any of the World Wars. The first main result is that the wealth shares of the top percentiles decreased during the

1900s in all countries except Switzerland. Second, there are much less of common patterns during industrialization in the 1800s.

What determines long-run changes in income inequality? This question is asked in Chapter 5, *The Long-Run Determinants of Inequality: What Can We Learn from Top Income Data?*. Using a newly available panel dataset with 16 countries over the entire twentieth century, this chapter studies the role of economic, technological and political factors in explaining the evolution of income inequality. The analysis focuses on three groups of income earners: the rich (P99–100), the upper middle class (P90–99), and the rest of the population (P0–90). The results show that periods of high economic growth disproportionately increases the top percentile income share at the expense of the rest of the top decile. Financial development is also pro-rich and the outbreak of banking crises is associated with reduced income shares of the rich. Trade openness has no clear distributional impact (if anything openness reduces top shares). Government spending, however, is negative for the upper middle class and positive for the nine lowest deciles but does not seem to affect the rich. Finally, tax progressivity reduces top income shares and when accounting for real dynamic effects the impact can be important over time.

In chapter 6, *Intergenerational Top Income Mobility in Sweden – A Combination of Equal Opportunity and Capitalistic Dynasties*, the intergenerational mobility in the Swedish earnings and income distributions is analyzed. Specific attention to mobility into the very top is given. Using a large dataset of matched father-son pairs in Sweden it is possible to obtain results for fractions as small as 0.1 percent of the population. Overall, the results indicate that mobility is lower for incomes than for earnings. Second, mobility appears to decrease the higher up in the distribution one goes. In the case of total incomes, mobility decreases dramatically within the top percentile of the population. Our results suggest that Sweden, well-known for its egalitarian achievements, is a society where equality of opportunity for a large majority of wage earners coexists with capitalistic dynasties.

In the dissertation's final chapter, Chapter 7, *Why Are Securities Transactions Taxed? Evidence from Sweden, 1909–91*, questions concerning taxes on the rich are addressed. Specifically, the chapter aims to explain why a specific kind of financial market tax, the securities transaction tax, was practiced in Sweden throughout the twentieth century in spite of its obvious economic inefficiencies. The main focus is put on the political-economic determinants of this tax on the rich. By evaluating the explanatory power of the public-interest and private-interest theories in the context of the previous Swedish securities transactions tax policy, the private-interest theory of regulation is found to offer the most plausible framework overall.

