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RECENT TRENDS IN INCOME INEQUALITY: EMPHASIS ON THE FINNISH AND THE SWISS CASES

THE KUZNETS HYPOTHESIS UNDER PRESSURE

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ABSTRACT

This paper is concerned with the evolution of within-country income inequality between individuals or households, with an emphasis on the Finnish and Swiss cases. One will see which trends or episodes in income inequality these two countries experienced, and which explanations have been given for these trends or episodes. However, in order to include this in a broader perspective, the paper starts by looking at the celebrated Kuznets hypothesis.

In his 1954 Presidential Address to the American Economic Association, Simon Kuznets made the hypothesis that in a growing economy, income inequality first increases and then decreases. It became known as the inverted U-shaped Kuznets Curve. If Kuznets mostly linked the evolution of income distribution to the process of industrialization, many different explanations were proposed, including imperfection in capital market, shift in demand for skilled labour and institutional change due to democratization.

During the two following decades, this hypothesis was widely considered as an unavoidable economic law. However, since the 1980s, Kuznets hypothesis lost its prestige, for various reasons, including a renewed increase in income inequality, observed first in Anglo-Saxon countries since the late 1970s. In short, the most usual alternative explanations for the renewed inequality increase are a skill-biased technological change, the impact of globalization, institutional changes such as a decrease in the minimum wage, a decline in unionization and a fall in the tax progressivity, or finally changes which may be linked to an ideological change due to the surge of the neo-liberal paradigm.

Increase in income inequality has also been experienced in Finland during the 1990s. It has been mostly linked to a deep economic recession with rising unemployment, as well as to a fall in the generosity of the social security system and to the introduction of a dual income tax. As for Switzerland, it is a rather peculiar case. First, Switzerland did not experience a decrease in income inequality during the first half of the 20th century, because it was spared by the big shocks from the Word Wars and the Great Depression and never had a highly progressive tax system. More recently, Switzerland experienced episodes of slight increases and decreases in income inequality, but so far few explanations are given. The available studies mostly considered structural changes as regards to population variables, such as age, education level, nationality and gender.

FIGURES

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1. INTRODUCTION

Inequality is a sensible issue, especially in a time of economic crisis. When more and more people lose their jobs, have difficulties to pay their rents or their health insurance, are indebted and need social assistance, the fact that on the other hand few people have so much money that they literally do not know what to do with may be seen as quite disturbing. This is a political issue which may pit people against another and lead to social unrest and political extremism. Very high salaries for CEO, which were more or less accepted some ten years ago, are more widely seen as unfair and insulting. Politicians from left and right call for changes, ask the rich to be more responsible, or call for law limiting excess in high pay. It seems that there is a need for moral. On their side, economists such as A.B. Atkinson or A. Sen argue that the assessment of economic performance for a given country should not rely only on efficiency, using indicators such as gross domestic product (GDP), gross national income (GNI), or GDP per capita and GNI per capita. Equity also matters, and more focus should be given to the repartition of incomes among individuals. For instance, Sen proposed already in 1977 a distributionally adjusted real income measure: mean income times (one minus the Gini coefficient) (Atkinson, 1997: 302).

In this paper, one will focus on the evolution of within-country income inequality between individuals or households. The evolution of between-countries inequality will not be considered. Our objectives are to analyze recent trends in income inequality in two developed countries, Finland and Switzerland, and to see what explanations may be given for these observed trends. However, this will be included in a broader perspective, so as to connect these recent trends with the hypothetical inverted U-shaped Kuznets Curve and the controversies it stirred, especially due to a renewed increase in income inequality observed in several advanced economies. At this level, emphases will be placed on the case of the United States. The evolution of income inequality in developing countries will not be considered, even though income inequality may be seen as a more important problem for poorer countries.

However, some preliminary considerations may be useful before addressing the core issue. First, it will be briefly highlighted that income is not the only space which matters when economic inequality is considered. Second, a discussion will be proposed on the fairness of income inequality.

Arguments will be presented in order to show that if too much inequality can be bad for the society, perfect equality is nevertheless not desirable.

Thus, our first preliminary consideration suggests that income is not all what matters. Economic inequality is a much broader concept. As argued by Amartya Sen in his 1997's paper called "*Inequality, unemployment and contemporary Europe*", economic inequality covers a wider space than only income inequality. Income distribution is, of course, important for assessing the standard of living between individuals or households, but it is not the only space that matters. There are many other factors than income that influence people's well-being, or freedom, or quality of life. Amartya Sen mentioned shortly health inequality and inequality in political participation as two alternative factors that can influence people's quality of life.

Sen discussed also more in detail the importance of unemployment as an important issue of inequality. If unemployment has dramatically increased in most European countries, it has not been the case in the United States, at least before the financial crisis that we are experiencing nowadays. If European citizen would difficultly tolerate the high level of income inequality experienced by the United-States, American citizen would find quite intolerable the double-digit levels of unemployment, which is common in Europe. If it is true that unemployment benefits usual in Europe make unemployment not too harmful in terms of income inequality, unemployment remains nevertheless an important cause of inequality in other spaces. For unemployed individuals, unemployment can lead to loss of freedom, social exclusion, loss of skills, loss of confidence, psychological suffering, loss of motivation, loss of human relations, and so on (Sen, 1997: 6-10). Therefore, even if the level of income inequality is lower in many European countries than in the United Sates, the high level of unemployment should not be forgotten when trying to assess economic inequality.

As for our second preliminary consideration, when only income inequality is considered, it should be mentioned that if too much inequality is bad for the society, perfect equality is nevertheless not optimal. There are appealing arguments against income inequality, but also against perfect income equality. On the one hand, some people tend to see income inequality as fundamentally bad. Different arguments may be given in order to defend this opinion. Without trying to be exhaustive, some of these arguments will be mentioned here.

First, it may be argued that with income inequality the total utility enjoyed by society as a whole is not maximised. According to the theory of the diminishing marginal utility, one additional dollar for a poor man is worth more than for a rich man. Therefore, some redistribution from the rich man to the poor would improve total utility (Carole E. Scott, 2002). In this sense, income inequality is seen as bad because it is inefficient.

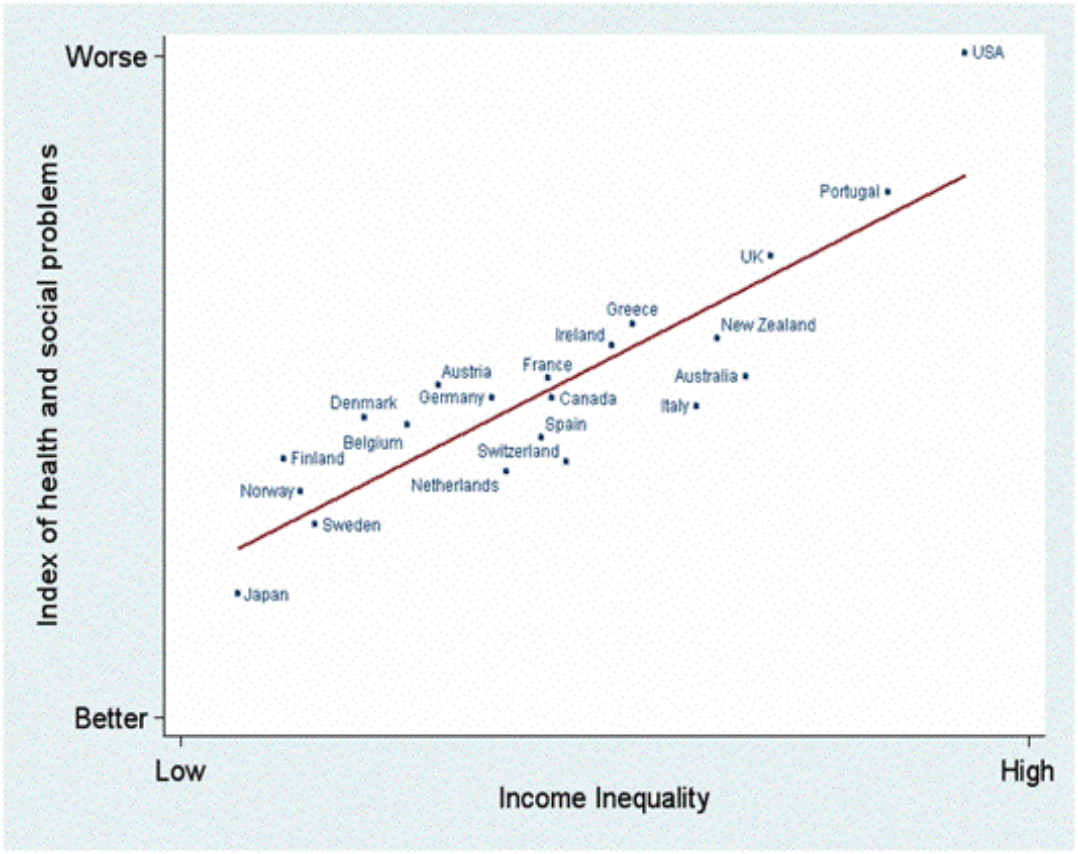
Second, it has been postulated that "crimes, riots and other disruptive activities" are motivated by inequality. These activities are not good for productivity and economic growth, because they threaten property rights, discourage investments, force to waste resources in order to protect potential victims and seek criminals instead to spend that time, that money and that energy in productive efforts (Barro, 2000: 7). Here again, inequalities are seen as bad because they may lead to inefficiencies.

Third, it has been argued that there is a link between corruption and inequality. For instance, Jong-sung and Khagram (2005: 136) wrote the following: "The wealthy have both greater motivation and more opportunity to engage in corruption, whereas the poor are more vulnerable to extortion and less able to monitor and hold the rich and powerful accountable as inequality increases. Inequality also adversely affects social norms about corruption and people's beliefs about the legitimacy of rules and institutions, thereby making it easier for them to tolerate corruption as acceptable behavior." Therefore, in countries where income inequality is high, some high-income groups may try to "interfere with the political process and democratic governance in order to protect their economic interests". They may try to promote anti-competitive measures so that their economic activities remain profitable. If they succeed, this will create distortions, higher prices and a reduction in the consumer welfare, as well as it may delay the introduction of new technologies, which would be detrimental for the economic growth (WWR, 2008: 24). Once again, inequalities are seen as bad because they may lead to inefficiencies.

Fourth, according to a study from Richard Wilkinson and Kate Pickett (2009), a range of societal problems are linked not with the mean income or the global level of wealth in a society, but with the level of income inequality. In an inter-country comparison, they found correlations and established regression between income inequality and various parameters, including confidence, infant mortality, obesity and life expectancy, the share of the population affected by mental illness or the UNICEF indicator of children's well-being. Even though correlations do not imply causality, their main result is that health and social problems are worse in more unequal societies (Damon,

2009). This idea is represented in Figure 1.1 below, which proposes a linear regression between income inequality and a broad index for health and social problems.

Figure 1.1: Income inequality versus health and social problems (Damon 2009)



Finally, income inequality can be seen as unfair when it results from luck, and illegitimate when it results from discrimination. As long as it is not due to their effort, but to luck, higher pay for people who are naturally more gifted than others for mathematics, foreign languages, sport or music may be perceived as unfair. However, some people argue that "we cannot correct for luck", because counteractive measures "inevitably violate people's sense of property right" (Curzon Price, 2006: 119). Additionally, when for an identical work, with the same education level and the same experience, wages are higher for men than for women, for whites than for blacks, or for natives than for foreigners, one speaks about economic discrimination (Lambelet, 2003: 6-7). This is widely seen as illegitimate, even though some people tend to see that as the freedom of the employer.

On the other hand, it is often argued that income inequality has not to be seen as such a bad thing. In certain circumstances, it may be perfectly legitimate for people to receive different incomes. Three arguments defending these views are presented here.

A first approach to defend inequality is based on needs. It is argued that some people should get more income than other since their needs are greater. The disabled should receive more than others, "as a matter not of charity but of justice", because they need more. This would be consistent with "the principle of giving priority to the worst off" (Norman, 2001: 116 and 134). The idea according to which the 'right' distribution of income should be based on needs is recommended by the Weak Equity Axiom (Sen, 1973: 78). This equity-conscious axiom can be defined as follows: "Let person *i* have a lower level of welfare than person *j* for each level of individual income. Then in distributing a given total of income among *n* individuals including *i* and *j*, the optimal solution must give *i* a higher level of income than *j*" (Sen, 1973: 18). However, even though one may be seduced by the idea that people who need more, as for instance disabled or chronically ill people, should receive more income as a fair compensation, in practice, it is rather rare than income inequality favours the worst off.

A second approach to defend inequality is based on merit. Some people may deserve greater benefits because they make greater contribution, for instance by working more hours. Others may deserve higher wages because their jobs are especially unpleasant, dangerous or exhausting. They should be compensated for this additional burden. Other people may also deserve higher material rewards because they make a more vital contribution than most people in most jobs. For instance, as Norman (2001: 133) argued, "teachers and nurses meet vital needs for health and education, which are essential requirements for any civilised society". They therefore deserve more income. However, in practice, there are many people who do not really "meet vital needs" but nevertheless earn very huge incomes, such as, for instance, football stars.

According to a third approach, inequality should be tolerated on incentive grounds. Without unequal income, it would be hard to give incentives to work hard and well. "Higher pay is the necessary incentive to get enough qualified people to do certain job" (Norman, 2001: 133). Incentives are also needed in order to make people invest in human capital. Student would not undertake studies and sacrifice part of their immediate incomes without the incentive to get more

important remuneration in the future. In the same line of thought, it is often argued that some level of inequality promotes higher economic growth.

With the third approach, and part of the second, emerges the problem between efficiency and equity. It seems reasonable to say that if we forbid inequality, or at least if we reduce it too much, one can discourage people to work harder, to be more productive, to invest in education and training, or to innovate. As mentioned in the World of Work Report (2008: 2), "rising income inequality can be a good thing to the extent that it is crucial to reward work effort, talent and innovation – key engines of economic growth and wealth creation". Therefore it is often argued that the "optimal redistribution asks for a certain degree of inequality" (Lambelet, 2003: 5).

However, this last sentence may sound like a truism. If it tells us that perfect equality is not the optimal solution, it does not indicate precisely how much income inequality is too much. The answer to such a question is probably no more an issue for economists, but rather for politicians or philosophers. The right acceptable level of inequality is probably variable according to the society which is considered. It may depend on inequality aversion among the citizen, which itself may depend on the level of economic development. Some would argue that inequality aversion increase when mean or median income rises (see for instance Atkinson, 1970: 251). When a country is richer, the people living in it are less prone to accepting high inequalities, because the country seems to have the means to redistribute more fairly wealth. Others would on the opposite argue that inequalities are especially unacceptable in poor countries, because the result is more detrimental for the more deprived who could be in a situation where they do not have "the capabilities to lead the life they have reason to value", according to Sen's terminology. Furthermore, the acceptable level of inequality may depend on the sources of these inequalities. Higher inequality may be tolerated if they are based on needs, merits, or incentive's grounds than if they result from luck or discrimination.

The structure of this paper is as follow. Section 2 will quite naturally present the famous trend pattern which was theoretically conceived in 1954 by Simon Kuznets. It was suggested that after an increasing pattern in inequality during the late 19th and the early 20th century, the inequality in income distribution decreased. Kuznets (1955: 19) talked about a "long secular swing in income inequality", which was related to the process of industrialization. This will be represented graphically by an inverted U-shape curve, famously known as the Kuznets curve. One will see

different explanations, from Kuznets and other scholars, for the hypothetical existence of such a relationship between income inequality and per capita income.

In Section 3 one will see that a renewed increase in income inequality has been experienced since the 1980's in several developed countries. Focusing on the case of the United States, different explanations given by economists for this new trend will be presented. Some of these explanations are well focused on an economic perspective, talking about supply and demand, technological change or trade. Others enlarge the perspective, including institutions, social norms and ideology.

Section 4 summarizes the evidence about income inequality in Finland which dramatically increased during the 1990s. This unprecedented increase begin when Finland was hit by a severe economic recession, but the income inequality went on increasing, and actually even increased faster when the Finnish economy was recovering. Different explanations for these observed trends will be considered.

Section 5 will focus on the evolution of income inequality in Switzerland. It will be first shown that income inequality as measured by top income shares was rather stable during the 20th century. No important decrease has been experienced, contrarily both to what hypothesised Kuznets and to what happens in most other advanced countries. Then other studies will show an increase in income inequality between the early 1980s and the early 1990s, as well as between 1999 and 2006. Using decomposition by subgroups according to age, gender, nationality or formation level, it is argued that income inequality increased dramatically within some specific groups.

Section 6 concludes.

2. THE KUZNETS CURVE

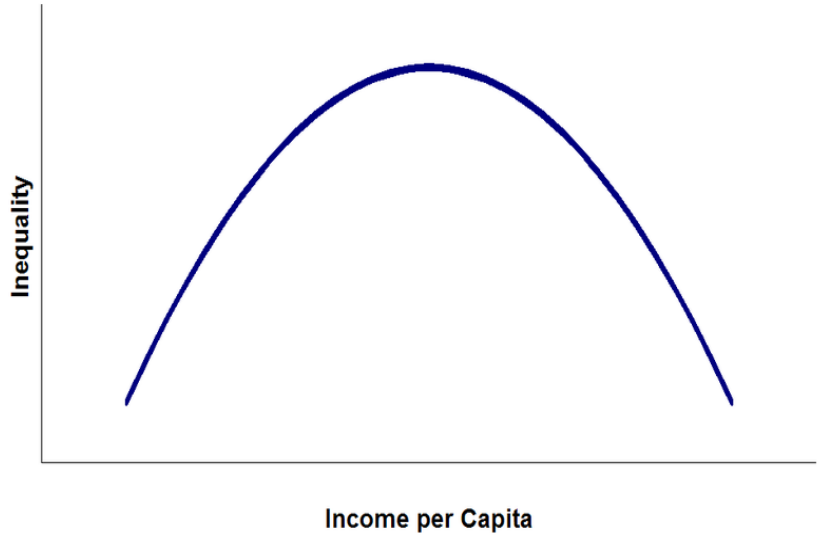
2.1. Kuznets' hypothesis

In his 1954 Presidential Address to the American Economic Association, Simon Kuznets made "one of the most famous hypotheses in all of economics" (Fields, 2001: 35), "one of the most enduring and remarkable arguments in the history of the social sciences", "one of the most significant and consequential propositions in development academics and policy" (Moran, 2005: 209). This hypothesis will be published in 1955 under the title *Economic Growth and Income Inequality*. With this hypothesis, Kuznets made a link between economic growth and the evolution of income inequality. Using both cross-country and time series data, in particular for the United States, England and Germany, Kuznets argued that there is a historical relationship between income inequality and the level of per capita income. As countries developed, income inequality first increased, peaked, and then decreased. Kuznets hypothesized the following:

> "One might thus assume a long swing in the inequality characterizing the secular income structure: widening in the early phases of economic growth when the transition from the pre-industrial to the industrial civilization was most rapid; becoming stabilized for a while; and then narrowing in the later phases" (Kuznets, 1955: 18).

This phenomenon has later been represented graphically in a diagram with per capita incomes on the X axis and inequality on the Y axis, as shown in the figure 2.1 above, and is known as the inverted U-shaped Kuznets Curve, or the inverted U-Curve hypothesis. Sometimes, per capita incomes are replaced by consumption per capita, economic development or even by time. As for inequality, it is often measured by the Gini coefficient, but many other inequality measures have been used, such as incomes shares of richest 5%, 10% or 20%, as well as generalized entropy measures.

Figure 2.1: the Kuznets'Curve



2.2. Evidence and controversies

Kuznets found some historical evidences that appear to be consistent with his hypothesis. Although adequate empirical evidences lacked to check its argument and to date precisely the phases of rising and falling income inequality, Kuznets made some conjectures for the three considered countries – the United States, England and Germany. Thus, income inequality in England might have been widening from about 1780 to 1850, while it might have been narrowing in the last quarter of the 19th century. Similarly, for the United States and Germany, the increasing phase might have taken place from the 1840s to the 1890s, while the decreasing phase for these two countries might have begun with the First World War (Kuznets, 1955: 19). Kuznets observed during his lifetime this period of decline.

It should be noticed that Kuznets' argument rests on a very limited amount of empirical observations, because in 1955 data on distribution were still rather rare. For the United States, Kuznets mainly based his argument on the 1913-1948 series on U.S. top income shares that he had just constructed and published in 1953. He had "no data prior to the creation of the federal income tax in 1913, but the general presumption was that inequality had been rising during the 19th century" (Piketty, 2006: 3).

His measure of income inequality was based on shares either at the top or at the bottom of the income distribution. For the United States and the United Kingdom, the figures given by Kuznets only highlight the decreasing phase of income inequality – between 1929 and 1950 for the United States, between 1886 and 1947 for the United Kingdom, while the figures related to Germany only highlight the stabilizing phase of income inequality – between 1875 and 1913, 1880 and 1913 for Prussia and Saxony relatively. If one considers more in detail the United States' case, Kuznets mentions only 6 figures related to only two time periods : first the year 1929, second the years after the Second World War, the figures being an average of 1944, 1946, 1947 and 1950. Thus, from the first to the second period, the share of the lowest two quintiles raised from 13.5 to 18 per cent, while the share of the top quintile declined from 55 to 44 per cent and that of the top 5 per cent from 31 to 20 per cent (Kuznets, 1955: 4).

Kuznets deliberately recognised "the limitations of both the available data and his theoretical ventures" (Moran, 2005: 213). It's worth mentioning his concluding statements: "The paper is perhaps 5 per cent empirical information and 95 per cent speculation, some of it possibly tainted by wishful thinking" (Kuznets, 1955: 26). Kuznets was thus rather intellectually cautious when he formulated his inverted U-Curve hypothesis, and, according to Moran (2005: 234), he insisted that it was "not a forecast that the general pattern will be present wherever industrialization processes occur, or whenever they take place".

In the following years and decades, his hypothesis gave rise to many investigations by different economists. In the 1960s and 1970s his speculative hypothesis was transformed into "an inevitable and unavoidable socioeconomic "law"", or even, as written by Srinivasan, it became "some sort of 'iron law' of development" (Moran, 2005: 209). During this period, many cross-sectional studies were undertaken – Gary S. Fields established a list of about 40 cross-sectional studies between 1960 and 1999. By looking different countries from low to high income per capita in approximately the same point in time, nearly all these studies lead to an inverted U-Curve (Fields, 2001: 36-39).

Nevertheless in the 1980s this unanimity began to face a wide challenge. Scholars began to criticize "the reliability of the cross-section data", due to "intercountry variation in data-collection methods" and "possible measurement errors" (Moran, 2005: 224). It was also argued that cross-sectional studies were not appropriate in order to assess the effects of growth on inequality. It should rather be looked "at changes in inequality within countries as they grow over time".

Longitudinal studies were therefore undertaken, and the results were "strinkingly different" (Fields, 2001: 41). The time series data were for the wide majority of countries unsupportive of the inverted U-Curve (Fields, 2001: 47). The "iron law of development" turned to be "a contentious hypothesis associated with contradictory findings and ambiguous conclusions" (Moran, 2005: 220).

The controversy also focused on the specific case of Britain that Kuznets had considered. If it is more or less accepted that from 1856 onwards inequality declined in the long term (Allen, 2005: 3), there is still place for debate as for what happened before 1856. A new reinterpretation based on Feinstein's work on the real wage, the capital stock and the GDP show a situation more complex than predicted by Kuznets hypothesis: a fall in inequality in the late eighteen century, followed by a sharp rise in inequality between 1800 and 1840 (Allen, 2005: 4).

The result of these controversies is probably that scholars should always remain cautious, following Kuznets by opposition to the Kuznetsians. Furthermore, it seems to be more reasonable to say with Moran (2005: 232) that "no systematic relationship exists between average income levels and/or subsequent growth and income inequality". However, the aim of this paper is not to make a review of all the debate concerning the existence or not of a Kuznets curve, during the industrialization in the 19th century for the advanced countries or during the 20th century for the developing countries. As argued by Williamson, "the issue is not so much whether the Kuznets curve exists in history, but rather to understand the forces which account for its presence *or* absence" (Moran, 2005: 234).

As it will be shown later, many developed countries have experienced a new increase in income inequality from the beginning of 1980s. In order to understand this new trend in income inequality and in which respect this diverges from Kuznets hypothesis, one will first look more closely to the attempt at explanation given by Kuznets himself and by other economists regarding the forces which lie behind this inversed U-shaped curve. Then, in chapter 3, one will look how is explained the new increasing income inequality trend.

2.3. Kuznets' explanations

In his 1955 classical text, Kuznets hypothesised a relationship between income inequality and the level of per capita income. Furthermore, he also developed a theoretical attempt to explain this

phenomenon. His ideas will first be summarized in few lines before going into further details. First, for the increasing part of the curve, Kuznets saw at least two groups of forces which contribute to the increasing income inequality: on the one hand, "the concentration of savings in the upper-income bracket"; on the other hand, "the shift away from agriculture, a process usually referred to as industrialization and urbanization". Second, he explained the decreasing part of the curve by the combination of different factors. There were on the one hand different factors which counteract the cumulative effect of the concentration of savings: legislative interference and political decision, demographic factors, technological change in a dynamic free economy and the growing importance of service income. There was on the other hand a growing political power in democratic societies for the urban lower-income groups, linked to the industrialization and urbanization, which allowed them to get "protective and supportive legislation" (Kuznets, 1955: 17). Thus, Kuznets developed two explanations, i.e., the concentration of savings and the process of industrialization and urbanization, both having counteracting forces, so that both the upswing and the downswing of the curve were explained. More details are now given for these two explanations.

2.3.1. The concentration of savings

The first explanation given by Kuznets for his inverted U-shaped curve was the concentration of savings in the upper-income bracket. According to studies of his time, Kuznets stated that almost only upper-income groups saved. "For example, the top 5 per cent of units in the United States appear to account for almost two-thirds of individuals savings; and the top decile comes close to accounting for all of it" (Kuznets, 1955: 7). Such inequality in savings induced that an increasing proportion of income-yielding assets will be concentrated in the hands of the upper groups, and consequently these groups and their descendants will have larger and larger income shares. This cumulative effect of the concentration of savings explained the upward part of the Kuznets curve: income inequality increased because the inequality in the distribution of savings caused the increase of top income shares.

There were nevertheless some factors which counteracted the concentration of savings and may therefore explain the downward part of the curve. Kuznets mentioned first legislative interference and "political" decisions. For instance, the introduction of an inheritance tax limited the accumulation of property, while the permission of a certain level of inflation reduced "economic value of accumulated wealth in fixed-price securities or other properties not fully responsive to

price changes" (Kuznets, 1955: 9). It is interesting to note that for Kuznets these legislative interference and political decisions are an important feature of democratic societies. They reflect the view of society on income inequality. In Kuznets view, as a country "moves to higher economic levels" due to the process of growth, there will be an "increasing pressure of legal and political decision on upper-income shares" (Kuznets, 1955: 9). In other word, aversion for income inequality is not independent of the society average income level. It increases in parallel with the economic level of the society, and leads to more pressure on top income groups.

Then Kuznets turned to three other groups of factors counteracting the concentration of savings. First, he mentioned demographic factors. The proportion of the rich was progressively diminishing for two reasons. First, the rich had a lower fertility rate than the poor, because of "family control" which had first spread to them (Kuznets, 1955: 10). Additionally, high immigration rate in the United States also played a role in this decline, because immigrants were more poor than rich. The consequence was a reduction of the cumulative effect of savings "on the relative share of a *fixed* top proportion of the population" (Kuznets, 1955: 10).

Second, Kuznets saw "the very nature of a dynamic economy with relative freedom of individual opportunity" as a good force for counteracting the concentration of savings. With this argument, Kuznets highlighted the importance of competition through innovation in our developed society. It was hard for descendants of high income groups to stay on top. They had to compete with new entrants by constantly innovating. They had to find new more profitable opportunities for their property holdings. It was therefore difficult to remain in high income groups from generation to generation. Like Kuznets wrote: "the successful great entrepreneurs of today are rarely sons of great and successful entrepreneur of yesterday" (Kuznets, 1955: 10).

Third, Kuznets mentioned the growing importance of service income – professional and entrepreneurial earnings – as a part of total income in developed societies. Service income represented actually most part of the upper income. The rise of the upper incomes due to this source was more limited than for lower incomes for two reasons. First, these high levels of service income were due to individual excellence, and therefore there were "less incentive and possibility of keeping such income at continued high relative levels" (Kuznets, 1955: 10). Second, lower-income groups had more opportunity to shift toward better paid occupations that people already well paid. In other words, individuals who were already in high-income groups had narrower possibilities to

increase their income than individuals in less paid occupations, more prone to benefiting from "interindustry shift", according to Kuznets terminology (Kuznets, 1955: 10).

Nevertheless, Kuznets remained cautious. He was not absolutely certain that these offsetting forces were sufficient to counteract the trend of increasing upper income shares due to the concentration of savings. Another attempt at explanation was therefore needed in order to better explain both the increasing part and the decreasing part of the so-called Kuznets curve.

2.3.2. The process of industrialization and urbanization

Kuznets himself actually proposed another explanation, the centrepiece of which lay in a shift of labour from the agricultural to the industrial sector during the process of industrialization and urbanization. First, the income distribution of the total population can be seen as a combination of the income distributions of the rural and the urban population. Thus, looking at data available in his time, Kuznets made two observations: on the one hand, "the average per capita income of the rural population is usually lower than that of the urban population"; on the other hand, "inequality in the percentage shares within the distribution for the rural population is somewhat narrower than in that for the urban population" (Kuznets, 1955: 7). The urban population had therefore both higher average per capita income and higher income inequality. Furthermore, the difference in per capita income between rural and urban population may have widened in the process of economic growth, because per capita productivity in industrial sectors increased more rapidly than in agriculture (Kuznets, 1955: 8).

Therefore, if we assume these patterns to be correct, during the early stage of economic development, when people moved from rural to urban areas – or from agricultural to non-agricultural sectors – the increase in the non-agricultural sectors' weights made income inequality to increase. Income inequality will be minimal in a situation where 100 per cent of the working population is employed in agriculture. Then, when people migrate from agricultural to industrial sectors – with higher income and higher within sector's income inequality – income inequality for the whole society increased. It went on increasing at least as long as 50 per cent of the working population was employed in the industrial sector. Beyond this point, income inequality may decrease because a growing part of the working population earned the higher industrial income (Van Zanden, 1995: 655).

2.3.3. Political power and the role of taxation

Kuznets went on mentioning another reason for the decreasing part of his inverted U-shaped curve. The political power of the lower-income groups within the urban population increased after the early stage of industrialization. More and more people of the lower-income groups within the urban population were "natives", in the sense than they were no more immigrants from rural areas, but they were born in cities. They consequently were more able to take advantage of the possibilities of a city life. They were close to each other and became aware of their fate. They had better chance for organizing themselves and fighting for their rights. As their political power grew, they could get protective and supporting legislations (Kuznets, 1955: 17).

To be complete, Kuznets also mentioned the role of public and social policy in narrowing income inequality. Direct taxes and government benefits also played a role in the downward phase of the curve. However, the progressivity of income taxes was quite a recent feature in developed countries in 1955. It did not appear at the early stage of industrialization, but "characterize only the more recent phase of development of the presently developed countries" (Kuznets, 1955: 19). This might be linked either with the growing political power of the lower-income groups or with a change in social preferences regarding income inequality, according to the previously seen assumption which argues that when average income rises people tend to place greater emphasis on equality.

As can be seen with these last two paragraphs, Kuznets did not only mention economic factors when attempting to explain his hypothetical trend in income inequality. He also briefly mentions the role of both collective action and public policies, especially with inheritance taxes and progressive income taxes. If a deterministic view was for a large part behind this U-inverted curve, some other more political factors were also considered.

2.4. Alternative explanations from other scholars

Other economists tried to find alternative explanations for the existence of an inverted U-shaped curve between income inequality and per capita income. If Kuznets mainly explained it by structural change during the early stage of urban and industrial development, many other theoretical

explanations, probably more relevant for post-industrial societies, have been proposed. Some of those theories will be presented here. While the first one explains the existence of the Kuznets curve by differences in investment opportunities between the rich and the poor due to imperfections in the capital market, the second one focuses more on differences in human capital investments. The third one connects the first two and adds the demographic transition. Differences in fertility among the rich and the poor contribute to the existence of the Kuznets curve. A fourth theory explains the increasing inequality by a shift in the demand of skilled labour, which might have been caused either by a skill-biased technological change or by the trade openness. In a second phase, a shift in the supply of skilled labour should lead to more equality. A fifth theory focuses on institutional changes and assumes that the decrease in inequality may be associated with the process of democratization. More details will be now given for each of these five theories.

2.4.1. Imperfection in capital market

The first theory is based on imperfections in the capital market. This model was developed for instance by Aghion and Bolton in 1994. It is assumed that opportunities to borrow capital and invest depend on one's income level. At the early stage of growth, rate of interest were too high for the poor. They had therefore no access to loans. Only the rich benefited from loans. They could invest and get richer, while the poor remained poor. It resulted in an increase of inequality. It was the upward part of the Kuznets curve.

However, in the process of economic growth, the capital accumulated by the rich became higher and higher. This accumulation induced a decline of the rate of interest, which improved the requirements for risky loans. Galor (1996: 105) argue that at some point requirements were "improved sufficiently to allow the poor to obtain loans and to participate in more fruitful ventures". The poor would be thus allowed to invest and catch up, so that their wealth eventually would converge to that of the rich. Inequality would decrease; it would be the downward part of the Kuznets curve.

2.4.2. Investment in human capital

The second theory is based on investment in human capital. This model was developed for instance by Galor and Tsiddon. They assume that there are two dynasties: the first one is composed

by families with high level of human capital, while the second one is composed by families with low level of human capital. Parental level of human capital will affect child level of human capital. Families have to borrow capital at the market interest rate in order to invest in the formation of human capital (Galor, 1996: 104). A child who belongs to the first dynasty will benefit from higher investment in human capital and will have more facilities in learning at school. According to this model, in the first phase, only the families with high level of human capital will borrow capital at the market interest rate and increase their investment in human capital. They will benefit from the high rate of return on these investments, and the income inequality between the two dynasties will widen.

However, parents with high human capital contribute to increase the whole society level of human capital, "which in turn affects the magnitude of the labor augmenting technological progress in the next period" (Galor, 1997: 94). The technical progress in production will allow the lower segments of society to benefit from the accumulated knowledge. This will increase the rate of return of investment in human capital, and thus gives incentive to invest more in human capital for the next generation. Therefore, in the second phase, the technological progress will increase the return to education such that it will give incentives to families with low level of human capital to increase their investment in education. This may eventually end up with a decline in income inequality.

We can make a link between this theory and the first one about the imperfections in capital market. Here again, the high interest rate in the capital market are part of the explanations for the increase in inequality. Only families with high level of human capital find it profitable to invest more in education during the first phase. However, in this theory it is not the decrease in interest rate which explains the decline in income inequality, but the higher return to education due to technological progress which makes possible for families with low level of human capital to invest more in their children's education.

2.4.3. Demographic transition

This model was proposed for instance by Dahan and Tsiddon in 1998, and can be seen as a prolongation of the two previous models. Capital markets are always imperfect, and there is always

investment in human capital. However, a third dimension is added: the demographic transition. It is assumed that the fertility of the poor is higher than the fertility of the rich. This is so first because the rich are assumed to have higher level of human capital, and second because it is additionally assumed that fertility is negatively correlated with the education level. To sum up, the rich are better educated and have therefore lower fertility than the poor.

During the first stage of economic growth, due to imperfections in capital market, the rich can borrow easily in order to invest in their children's human capital, whereas the poor do not find it productive and remain therefore unskilled. As they remain unskilled with a low level of education, their fertility consequently remains high. The poor become more numerous. On the other side, the rich increase their level of education, which leads their fertility to decline. The rich become less numerous. Therefore, the supply of poor unskilled people increases while the supply of rich and skilled people decreases. As a consequence, according to the law of supply and demand, the wage of the poor declines, whereas the wage of the rich increase. "An ever-diminishing proportion of the population grows richer and richer. Thus, throughout this phase income distribution becomes less and less equal." (Dahan, 1998: 44).

However, through this process, wages of educated people become higher and higher. There is more and more incentives to invest in human capital. This leads to the second stage of economic growth, when the return to education is high enough so that the poor change their decision about investment in skills. Some of them choose to invest in human capital. As they become more educated, their fertility will decline. This induces both a decline in the supply of the unskilled and an increase in the supply of the skilled. This shift leads as a matter of fact to an increase of the wages of the unskilled, and a decrease of the wages of the skilled. "Demographic transition therefore coincides with the point in time at which the trend of inequality is reversed: when fertility declines, so does inequality." (Dahan, 1998: 44)

To sum up, by increasing the wages of the rich, or more precisely, by increasing the return to education, the rise of the fertility of the poor occurring during the first stage make possible the fertility decrease which takes place in the second stage. These changes in fertility affect the wages' gap between skilled and unskilled workers via changes in the supply of skilled and unskilled labour.

"In the first stage fertility increases and income inequality widens, whereas in the second stage fertility declines and income become more equally distributed" (Dahan, 1998: 29).

2.4.4. Shift in demand for skilled labour

This fourth theory takes a different view by considering the demand side for skilled and unskilled labour. According to this theory, during the first stage of economic growth, there is a shift in demand for skilled labour. In the literature, two causes are often cited to explain this shift: either a skill-biased technological change or trade openness. This gave rise to a controversy between two schools of thought among economists. However, this controversy will not be presented here, but in a later chapter (3.3.2.) outlining the various proposed causes for the new observed increase in income inequality since the 1980s. Here, the two theoretical versions of this fourth theory will be briefly presented.

2.4.4.1. Skill-biased technological change

It is assumed here that the shift in demand of skilled labour is caused by skill-biased technological change. The increasing part of the Kuznets curve during the 19th century in Britain may be explained by the fact that the first phase of modern economic growth was accompanied by a rapid growth in demand for certain types of skilled labour. This is caused by the introduction of a new technology which is complementary with skilled labour. This leads to an increase of the skill premium, which is the difference in pay between unskilled and skilled labour. That explains the increase in income inequality.

To explain the downward part of the Kuznets curve, one needs to assume that the rise in the skill premium gives incentives to the expansion of education. As a result the supply of skilled labour will increase. Furthermore, changes in the production process, such as the introduction of new technologies, may induce a relative decline in demand for skilled labour. All in all, according to the law of supply and demand, the skill premium begins to fall, and income inequality diminishes (Van Zanden, 1995: 658).

2.4.4.2. Trade openness

This theory is based on the standard Hecksher-Ohlin two-factor, two good trade model (Higgins, 1999: 5). Open economies specialise according to their international competitive advantages, determined by cross-country differences in relative factor endowments, such as the ratio of skilled to unskilled labour. The more abundant is a factor in a country, the lower its price will be relatively to the less abundant factor. International trade raises the relative demand for goods that intensively use the abundant factor. Each country will have comparative advantage in producing goods which used the relatively more abundant factor. The relative price of this factor will rise. Developed countries, where high-skilled workers are relatively more abundant, will have an advantage in producing good using intensively high-skilled labour. This implies that in the first stage, the demand for high-skilled workers will increase, while the demand for low skilled workers will decrease. High-skilled workers' wages will increase, and the opposite for low-skilled workers. The consequence is straightforward: income inequality will first increase as a result of trade openness. This explains the upward part of the Kuznets curve.

To explain the downward part of the Kuznets curve, some further assumptions have to be maid. Again, we can assume that the increase in high-skilled workers' wage gives incentives to more and more people to get a better education, so that the supply of high-skilled workers will increase. More people will benefit from trade openness. Possibly, if the increase in the supply of high-skilled workers is big enough, high-skilled workers' wages may even decrease. All in all, this will finally result in a decrease in income inequality.

2.4.5. Institutional change

The fifth theory is based on institutional change. This may be seen more as a political than an economical explanation. This theory is largely due to Acemoglu and Robinson. These authors agreed with the idea that the process of industrialization and urbanization increased income inequality, as already suggested by Kuznets in 1955. But from this starting point, their theory of the Kuznets curve is that "capitalist industrialization tends to increase inequality, but this inequality contains the seeds of its own destruction, because it induces a change in the political regime toward a more redistributive system" (Acemoglu, 2002: 184).

In their view, economic development does not lead unavoidably to a decline in inequality. This decline has more to be seen as the outcome of political changes forced by the mobilization of the masses. As long as political power is monopolized by small elite, most policies are favourable to this elite and redistribution of income remains limited. But with industrialization and urbanization, the poor segments of the society were concentrated in urban areas and factories. This concentration helps them to become aware of their situation of misery, and makes easier to organize them. Labour unions become stronger and more effective. Their threat to the stability of the social system becomes more credible. Living and working together, the urban masses have more leeway to spontaneously engage in mass demonstrations or outbursts of violence. This leads to increased political unrest, or even to threat of revolution. As previously seen, these ideas were already partly suggested by Kuznets.

To prevent revolution or political unrest, political elites have to undertake some actions. For that, they have several instruments at their disposal: violent repression, use of strike-breakers, interdiction of unionization, and so on. But it appears than in many industrialised countries, another way was chosen. Political elites undertook radical reform, with fundamental political change which made credible income redistribution. According to Accemoglu and Robinson, the fundamental political change consisted in an extension of the franchise. "Such democratization acts as a commitment to future redistribution and prevents social unrest" (Acemoglu, 2002: 184). Before the extension of the franchise, inequality was increasing. After the democratization, more redistributive efforts were undertaken, higher primary school enrolment rates were observed, health and unemployment insurance, as well as government financed pensions appeared. Finally, more progressive taxation became more common. All these radical shifts towards fiscal and social redistributive policies made possible the decrease in income inequality.

2.5. Concluding remarks

Chapter 2 presented the Kuznets theory linking economic growth and the evolution of income inequality. First, it has been shown that Kuznets theory was not an unavoidable economic law but a hypothesis based on very few data. Kuznets was rather cautious when he made his conjectures. This caution was nevertheless not always respected by Kuznets' followers. Second, Kuznets explanations for the hypothetical trend in income inequality rely not only on a deterministic economic perspective. Other factors such as political power, public policies, taxation or collective actions were also briefly mentioned. Finally, many alternative explanations were suggested for the U-shape Kuznets curve. Again, these explanations are not based only on purely economic arguments, such as shift in demand of skilled labour due to technological change or to globalization. Acemoglu has for instance developed another interesting perspective, highlighting the role of institutional changes and democratisation.

3. RECENT ANOMALIES TO KUZNET'S THEORY

All theoretical explanations seen previously give us some understandings about the hypothetical existence of the inverted U-shape Kuznets curve which has been observed by many economists for different countries during the 19th and 20th century, with a peak in income inequality in the 1920's or 1930's depending on the country taken into consideration, followed by a decrease in income inequality.

Nevertheless, as already mentioned earlier, a renewed positive relationship between income inequality and per capita income has been observed since the 1980's in many developed countries. Therefore, after a brief general presentation of this new trend, one will see different theories proposed in the literature to explain this new trend which puts under pressure the Kuznets' hypothesis.

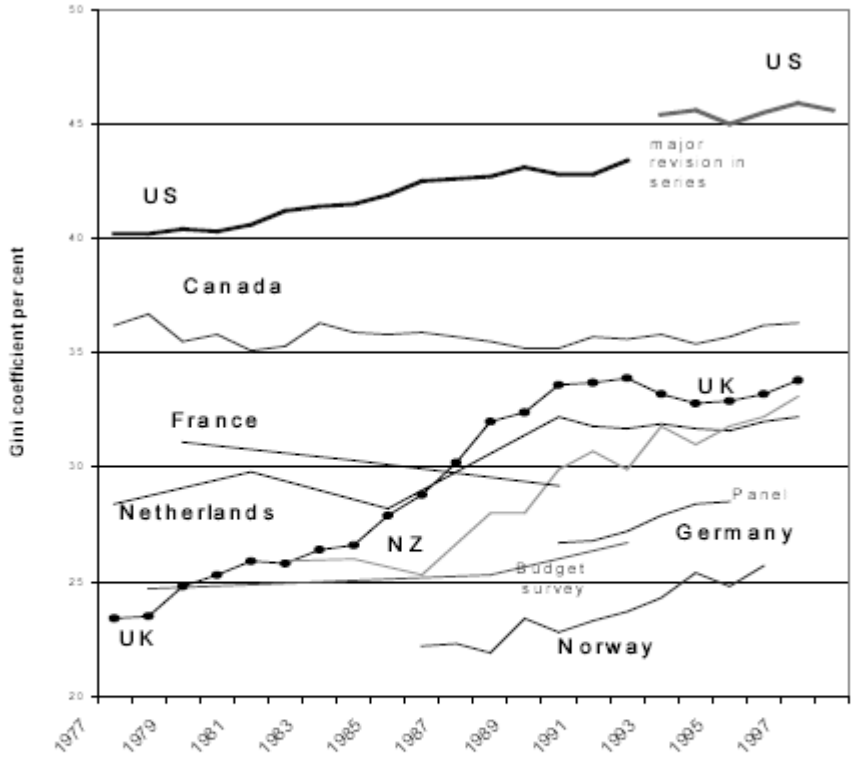
3.1. New trend in income inequality

Interestingly enough, since the beginning of 1980's divergences have occurred from the Kuznets curve. Many developed countries experienced a renewed increase in income inequality. It began in some Anglo-Saxon countries such as the United States and the United Kingdom, which experienced a large increase in top income shares in the early 80's. In other countries the largest increase occurred in the early 90s (e.g. Germany). Inequality increased both in countries with high initial inequality (e.g. the USA) and countries with smaller initial inequality (e.g. Sweden) (Ernst, 2000: 289).

Figure 3.1 below shows the evolution of inequality measured by the Gini coefficient from 1977 to 2000 for different developed countries: the United States, Canada, France, Netherlands, New-Zealand, the United Kingdom, Germany and Norway. The Gini coefficient ranges from 0 to 1, with 0 corresponding to perfect equality and 1 to perfect inequality. The figures represented here refer to the inequality of disposable household incomes. Inequality first increased in the United States and in the United Kingdom, with a larger increase in the latter case, where the Gini coefficient rose from around 23 per cent in 1977 to around 33 per cent in 1990. However, the experience is not uniform for all countries. In France, there was no increase during the 1980s. New-Zealand experienced a sharp increase from the end of the 1980s, while Norway experienced a more

modest one. In Germany, by piecing together the two series in Figure 3.1, the Gini coefficient has increased by some 3 per cent points since the 1970s (Atkinson, 1999: 3).

Figure 3.1: Changes in income inequality (Atkinson, 1999: 4)



Sources: Canada, Statistics Canada (1996: Text Table VI) and Statistics Canada (1999 Appendix Table III). France, (1975=100) Atkinson (1997b: Table FR2 Synthèses series). (West) Germany, (1978=100) Becker, (1996: Tabelle 1) and Hauser (1996: Tabelle 1) linked at 1993 using Becker (1998: Tabelle 4). Netherlands, supplied by Central Bureau of Statistics. New Zealand, Statistics New Zealand (1999). Norway, Epland (1998). United Kingdom, up to 1993 from Atkinson (1997b: Table UK3) series constructed by Goodman and Webb (1994); 1994/5-1997/8 from Clark and Taylor (1999: Figure 2 and text). Figures prior to 1993 from Family Expenditure Survey; figures from 1994/5 from Family Resources Survey. United States, US Department of Commerce (1999:Table: B-3, B-6).

Although the Finnish and Swiss cases will be more developed in the fourth and fifth parties, some facts will already be given here. Finland experienced a decrease in income inequality between 1966 and 1976. This was consistent with Kuznets hypothesis. But Finland suffered from an unprecedented increase in income inequality during the 1990's. The Gini coefficient decreased from 38 per cent in 1966 to 35 per cent in 1976, and then increased dramatically from 39 per cent in 1990 to 48 per cent in 2000 (Riihelä, 2001b: 2). According to different studies, Switzerland also experienced an increase in income inequality from the 1980's. For instance, the Gini coefficient increased from 26.89 per cent in 1982 to 28.25 percent in 1992 (Ernst, 2000: 296).

This widely observed new increase in income inequality in many developed countries drew the attention of many economists, so that during these last decades interest on income inequality has grown. Many cross-national comparisons have been undertaken by different inequality researchers such as Anthony B. Atkinson, Thomas Piketty or Emmanuel Saez. Finland's case has been quite well studied by different Finnish economists, such as Marja Riihelä, Risto Sullström and Matti Tuomala. More details will be given later.

3.2. No Kuznets curve?

In front of this renewed positive relationship between income inequality and per capita income observed since 1980s – a new trend which apparently does not fit with Kuznets hypothesis – some economists, such as Facundo Alvaredo and Thomas Piketty, argued that the hypothetical Kuznets curve does not exist.

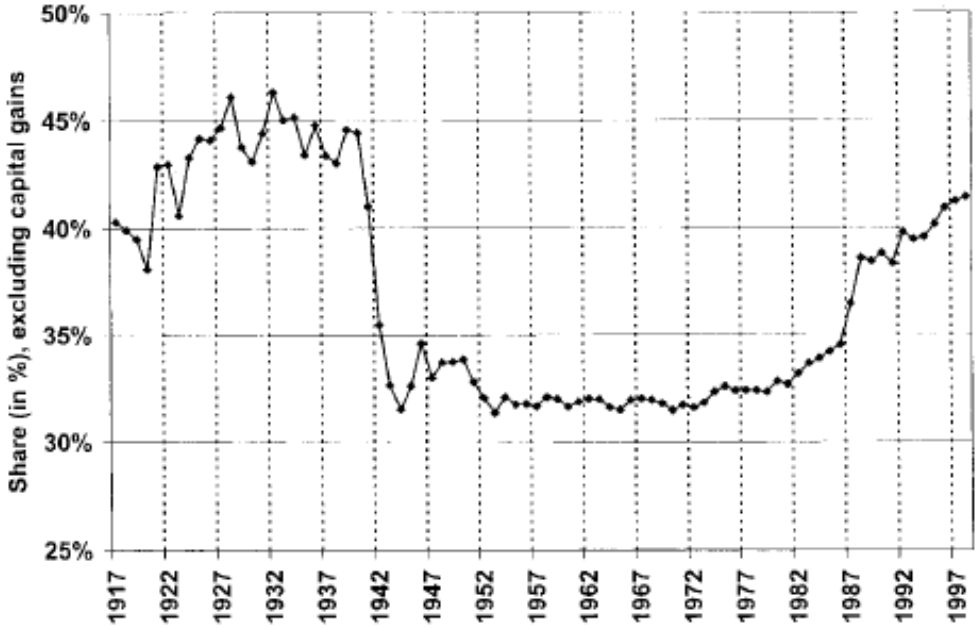
Based on observations of top income shares, they argued that the decline in inequality observed by Kuznets during the first half of the twentieth century was not "the outcome of a general, spontaneous process of inequality compression" (Piketty, 2000: 25). They emphasized the role of market forces and historical factors: the biggest decline in top income shares happened during the two World Wars, the stock market shocks and the Great Depression. "The decline in income inequality was for the most part a capital income phenomenon" (Piketty, 2006: 5). Top income shares fell because "capital owners were hurt by major shocks to their capital holdings" (Alvaredo, 2009: 11). In the United States for instance, the decline in inequality was not linear and continuous. After a first drop in the top percentile income share during World War I, there was a recovery during the 1920s, before a new drop during the Great Depression and World War II (Piketty, 2000: 26). According to this view, the compression of income distribution between 1914 and 1945 has therefore not much to do "with the optimist process derived from Kuznets' idea" (Alvaredo, 2009: 23).

However, is this new trend really the proof that no Kuznets curve exists? Or can we see this new increase in income inequality as "a remake of the previous inverse-U curve"? After all this new rise in income inequality may for instance have been caused by "a new industrial revolution", and one can expect inequality to "decline again at some point, as more and more workers benefit from the new innovations" (Piketty, 2006: 2).

3.3. Explanations from the U.S. experience

The United States is probably the first country which experienced a new increase in income inequality, beginning in the 1970s and increasing more dramatically in the 1980s. Figure 3.2 below give us some ideas about this new trend through a picture of the evolution of the top decile income share. Many American economists have been interested by this reversal and tried to explain it. There is therefore a voluminous literature on this phenomenon, but always no consensus amongst economists. Without pretending to be exhaustive, some of these explanations will be presented.

Figure 3.2:U.S. top decile income share, 1917-1998 (Piketty, 2003: 11)



Broadly speaking, two different families of explanations can be distinguished. The first one is based on market mechanisms, such as a shift in jobs from manufacturing to services, or a shift of demand towards skilled workers (the transatlantic consensus). They are comfortable hypothesis both for economists ("it's just supply and demand") and for politicians ("the rise in inequality isn't anybody's fault") (Krugman, 1997: 132). On the other side, the second family of explanations is based on non-market mechanisms, such as institutions, norms and political power. These explanations tend not to see this new rise in inequality as an unavoidable phenomenon, and to put the responsibility on some politicians and ideologues.

3.3.1. Shift in jobs from manufacturing to services

According to this first theory, the rising earnings inequality observed in the United States is due to the process of deindustrialization of the developed economies. Bishop, Formby and Thistle (Bishop, 1991) explained the deterioration in the US earning distribution in the 1980s by a shift in jobs from manufacturing to services.

Data from 1982 to 1986 show that an increasing share of workers were employed in the service sector. The percentage of employees in the service sector grew by 6.1% between 1982 and 1986. It is also shown that wages for service jobs were on average lower than wages in manufacturing – even though wages increased more in service sector than in manufacturing sector over the 1982-1986 period (Bishop, 1991: 428). Additionally, using pair-wise comparisons of Lorenz curve, it is shown that salaries are less equally distributed in services.

Table 3.1: Changes in US earnings distribution in the 1980s (Bishop, 1991: 429)

Lorenz ordinates of earning by decile and sector, 1982 and 1986

	Decile								
	1	2	3	4	5	6	7	8	9
All sectors									
1982	1.05	4.17	9.07	15.40	23.26	32.71	43.41	57.27	73.71
	(0.02)	(0.05)	(0.06)	(0.08)	(0.10)	(0.12)	(0.11)	(0.12)	(0.11)
1986	1.07	4.16	8.88	15.10	22.85	32.14[b]	43.29[b]	56.62[b]	73.12[b]
	(0.02)	(0.04)	(0.06)	(0.08)	(0.10)	(0.11)	(0.12)	(0.13)	(0.13)
Service									
1982	0.88	3.55	7.93	13.87	21.26	30.29	41.21	54.45	71.15
	(0.02)	(0.06)	(0.09)	(0.11)	(0.14)	(0.16)	(0.18)	(0.19)	(0.18)
1986	0.90	3.58	7.85	13.57	20.84	29.73	40.46[b]	53.59[b]	70.38[b]
	(0.02)	(0.05)	(0.08)	(0.11)	(0.14)	(0.16)	(0.18)	(0.20)	(0.19)
Manufacturing									
1982	1.57	5.53	11.02	17.95	26.28	36.04	47.38	60.51	76.31
	(0.04)	(0.08)	(0.10)	(0.13)	(0.15)	(0.17)	(0.17)	(0.17)	(0.16)
1986	1.61	5.49	10.94	17.83	26.07	35.78	47.17	60.34	76.14
	(0.04)	(0.08)	(0.11)	(0.13)	(0.16)	(0.17)	(0.18)	(0.19)	(0.17)
Government									
1982	2.12	6.96	13.29	20.80	29.48	39.26	50.40	63.40	78.45
	(0.12)	(0.20)	(0.25)	(0.29)	(0.32)	(0.34)	(0.33)	(0.33)	(0.27)
1986	2.16	7.08	13.45	20.98	29.72	39.77	51.10	63.94	78.92
	(0.12)	(0.21)	(0.25)	(0.29)	(0.32)	(0.35)	(0.35)	(0.34)	(0.29)
Agriculture									
1982	0.36	2.14	6.01	11.54	18.78	27.73	38.57	52.12	69.95
	(0.05)	(0.21)	(0.60)	(0.39)	(0.66)	(0.75)	(0.83)	(0.90)	(0.88)
1986	0.67[b]	2.67	6.52	12.04	19.12	27.67	37.94	51.06	69.21
	(0.07)	(0.21)	(0.42)	(0.56)	(0.71)	(0.82)	(0.91)	(0.99)	(1.01)

[a]Standard errors in parentheses.
[b]Significant difference in Lorenz ordinates across time.

In Table 3.1 above Lorenz ordinates for manufacturing are significantly larger than the corresponding service Lorenz ordinates, which means that inequality is higher in service sector. Some have argued that this greater dispersion of earnings in services was due to "the greater mix of professional and managerial jobs with relatively low-skilled clerical and manual job" (Wolff, 2000:

35). Furthermore, from 1982 to 1986, inequality in the service sector was increasing – (in Table 3.1 the Lorenz ordinates in the service sector for deciles 3 to 9 were lower in 1986 than in 1982). Therefore, the increase in the overall inequality in the 1980s is explained by the fact that the growing sector was more unequal than the other one, and this larger inequality was even widening.

This explanation is very similar to the explanation given by Kuznets for his hypothesis, except that at that time, the shift in jobs was from agricultural to industrial sector.

3.3.2. The Transatlantic Consensus

This second theory is referred by Atkinson as the "Transatlantic Consensus". It is argued that the main factor which explains the new increase in income inequality is a "shift of demand away from unskilled workers towards skilled workers" (Atkinson, 1999: 1). Similarly to what has been previously seen, two causes are often cited to explain this shift of demand: skill-biased technical change on one side, growing international trade and immigration on the other side. These two explanations will be presented and criticized in the following parts.

3.3.2.1. Skill-biased technical change hypothesis

This explanation was supported by many economists in the 1990s, especially for the U.S. case, but is challenged by more recent studies. The idea is that the dramatic increase in U.S. wage inequality which began in the early 1980s is linked with the invention of microcomputers a few years before. This new technology caused a rise in the demand for highly skilled workers, and replaced tasks previously performed by the unskilled. All in all, that caused a rise in wage inequality. Computer technology is suggested to be complementary with human capital (Card, 2002: 734).

There is a skill premium increase if the demand for skilled workers relative to unskilled workers increases more than the corresponding relative supply. According to Acemoglu, two different hypotheses can be maid. The first one is called "the steady-demand hypothesis". It is argued that there have been skill-biased technological changes throughout the twentieth century, and that the recent increase in inequality is not due to an increase in the demand for skilled workers caused by a recent major technological change, but to a decline in the growth rate of the supply

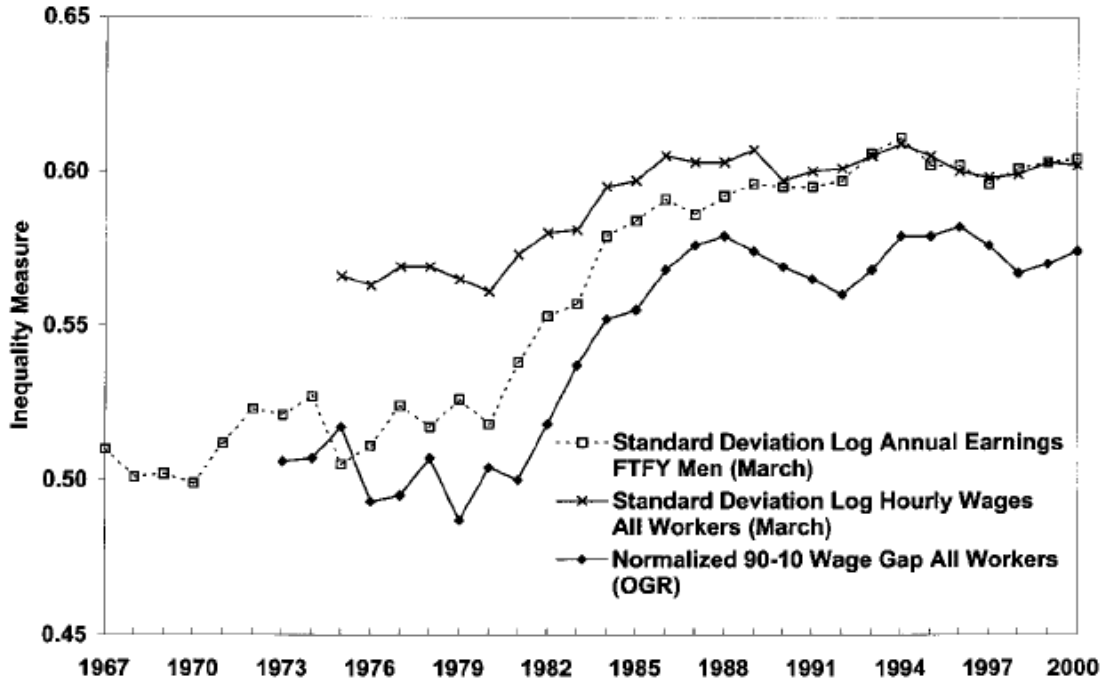
skills. The second hypothesis is called "the acceleration hypothesis". The increase in wage inequality is this time explained by "a notable acceleration in the skill bias of technology, driven in by advances in information technology" (Acemoglu, 2001: 6)

During the 1990s, many economists find evidence for the SBTC hypothesis. An argument made by Bound and Johnson (1992) is that "the rate of return to a college premium – the wage premium paid to a college graduate relative to a high school graduate – approximately doubled over the decade of the 1980s" (Wolff, 2000: 31). Katz and Murphy (1992) found that there was a steady increase in the demand for skilled labor in the U.S. over the period 1963-1987 (Wolff, 2000: 32) Allen (1996) estimated that technology variable accounted for 30 percent of the increase in the college wage premium over the period from 1979 to 1989 (Wolff, 2000: 33).

The SBTC often mentions the personal computer revolution. Krueger (1993) argued that pronounced declines in the cost of personal computers caused their widespread adoption in the workplace and shifted the production function in ways that favoured more skilled workers (Wolff, 2000: 33). He estimated that "employees who directly use a computer at work earn a 10 to 15 percent higher wage rate", which would imply that "the proliferation of computers can account for between one third and one half of the increase in the rate of return to education observed between 1984 and 1989" (Krueger, 1993: 54). In later work, Autor, Katz, and Krueger (1998) supplied new evidence that there was a substantial and increasing wage premium associated with computer use, despite a large growth in the number of workers with computer skills (Wolff, 2000: 34).

Nevertheless, many counter-arguments have been advanced against this hypothesis. Card and DiNardo found some pieces of evidence that "the rate of technological change accelerated during the 1990s, relative to the 1980s" (Card, 2002: 740). However, as shown in Figure 3.3 below, the major part of the increase in wage inequality during these two decades took place in the period between 1980 and 1986. In the late 1980s and over the 1990, wage inequality appears to have stabilized. This "presents a potentially important puzzle for the SBTC hypothesis, since there were continuing advances in computer-related technology throughout the decade" (Card, 2002: 748).

Figure 3.3: Alternative measures of aggregate wage inequality (Card, 2002: 747)



Another important puzzle for this hypothesis is that technological changes which occur in the United States and the Anglo-Saxon world also occur in France and Japan. Therefore, if SBTC explains the rising inequality in the United States, the same trend in income distribution should be observed in France and Japan, which, as can be seen in Figure 3.1 above, is not the case for France (Piketty, 2003: 34).

3.3.2.2. Globalization: growing international trade and immigration

This second explanation is often mentioned in the literature, but is even more challenged. The idea is that the surge in U.S. inequality is linked to the increase in trade liberalization from the 1970s. Imports into the U.S. economy jumped from 5.4 percent of GDP in 1970 to 13.1 percent in 1997, while the share of exports grew from 5.5 to 11.8 percent (Wolff, 2000: 39). U.S. trade with Third World countries has also increased, especially with Mexico and China. It is therefore argued that inequality increased because this trade is biased: U.S. tend to import "labor-intensive" goods and to export "skill-intensive" goods, so that U.S. trade reduced "job opportunities for less-skilled American workers" and increased "demand for more skilled workers" (Krugman, 1997: 134). This explains both the fall in the average real wage of American workers and the "increasing gap between blue-collar workers and professionals who work in industries such as law, medicine, education and business services" (Wolff, 2000: 39).

Wood is one of the economists who give the more importance to international trade for explaining the rising wage inequality. According to him, the expansion of trade with developing countries is "the main cause of the deteriorating situation of unskilled workers in developed countries" (Wood, 1996: 57). Before the reduction of trade barriers, developed countries were in a situation of "manufacturing autarky". Nowadays, they are in a situation of dependence on imports from developing countries for their need in labor-intensive manufactured goods, while specialized in the production of skill-intensive manufactures (Wood, 1995: 61). In his research he found that international trade account "for as much as half of the decreased demand for low skilled workers" in the U.S. (Wolff, 2000: 45). He also noticed that international trade would have reduced the demand for unskilled labor by almost 22 percent (Wood, 1995: 60).

Nevertheless most of the other economists who made research on this field believe that trade has less importance in the widening earnings inequality. They argue that the volume of U.S. trade with developing countries remains too small "for the effect of low-price imports to be quantitatively relevant" (Gancia, 2003: 43). In 1989, Katz and Revenga found that U.S. trade deficit account "for at most 15 percent of the increased educational and experience wage differentials". In 1992, Borjas, Freeman and Katz found that only "between 15 and 25 percent of the 11 percent increase in the earnings differential between college graduates and high school graduates between 1980 and 1988" can be explained by rising trade flows (Wolff, 2000: 41). In 1994, Baldwin and Cain gave even less weight to trade pressure for explaining the growth in U.S. wage inequality: it explains at most 9 percent of this growth from 1977 and 1987.

In order to have a broader picture of the effect of globalization on earnings inequality, immigration can be added to international trade. It appears that there has been a big increase of immigrants in the U.S. during the last third of the twentieth century. In 1970 "less than 5 percent of U.S. adults were foreign born", while around 1997 "immigrants make up about 15 percent of the workforce" (Krugman, 1997: 133). And it is widely assumed that immigrants "are on average considerably less educated than are native-born workers". Therefore, because of the arrival of large numbers of immigrants, less educated labor is more abundant in the United States, while highly educated workers are relatively scarcer (Krugman, 1997: 134). This time the origin of the increasing wage inequality is not in a shift of demand, but in a shift of supply of less-skilled workers. In 1992, Borjas, Freeman and Katz added the effects of immigration to that of expanding international trade. They found nevertheless that these two factors accounted only "for between 30 and 50 percent of

the 10 percent decline in the relative weekly wage of high school dropouts over the 1980-1988 period" (Wolff, 2000: 42).

The different factors mentioned above – skill-biased technological change, growing international trade and immigration – can explain a part of the rising gap between less-educated and more educated workers. Trade and technological change may also interact. Technological change makes international trade easier, by improving communication and transportation, while international trade contribute to the circulation of new innovations and the diffusion of technological changes. Additionally, the shift in skills is a convenient theory in order to explain why there may be episodes of rising or falling inequalities. When public support for education and training is strengthened, the supply of skills increases and a reduction in the skill premium is expected. Similarly, when a new skill-biased innovation is introduced, this can boost the demand for skilled workers and lead to an increase in the skill premium.

However a wide part of the U.S. rising inequality is due to an increase in the gap within master's degrees well-educated workers, which can not be explained by these factors. One need something else in order to explain why "a handful people have done incredibly well", such as chief executives who have seen their income rising "from thirty time that of the average worker in 1970 to more than three hundred times as much" around 1997, while other master degrees' workers such as schoolteachers have seen only modest gains since 1973 (Krugman, 1997: 136). This leads us to examine other factors such as institutions and norms.

3.3.3. Institutional factors

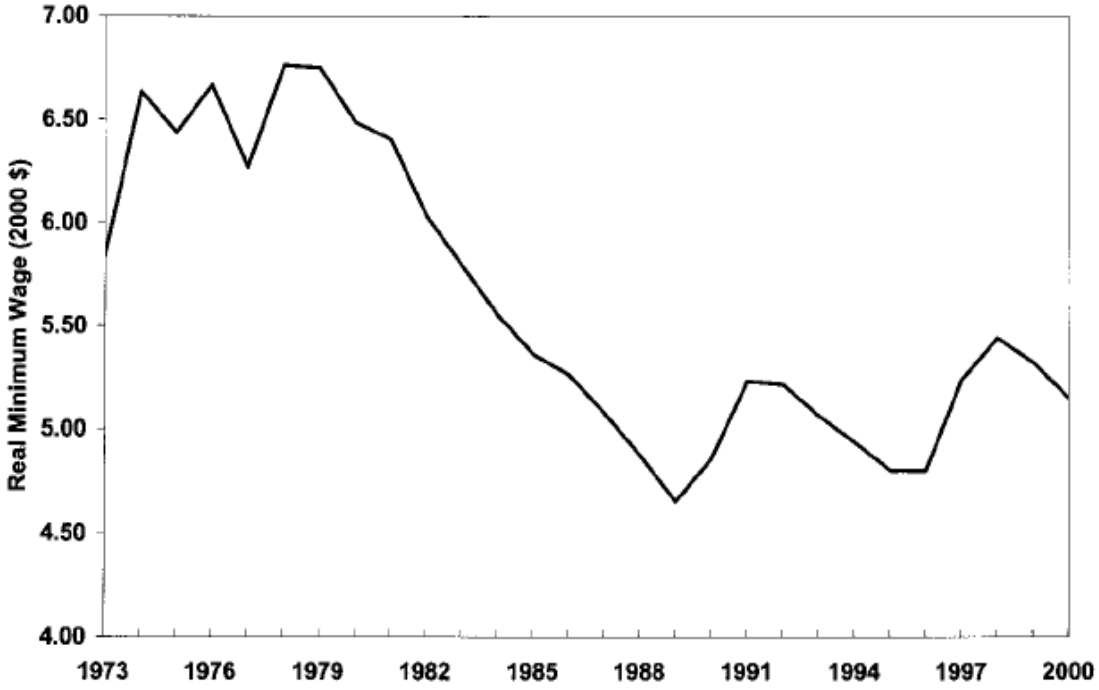
This alternative view linked the increase in inequality with some major changes that occur to different institutions which were created or strengthened in the 1930s and 1940s in order to limit inequality. Among those institutions, one will consider unionization, the minimum wage and progressive taxation. But other institutions – for instance educational policies or social protection such as unemployment insurance and pensions – may also have played a role.

The first institution considered is unionization. During the 1950s and 1960s unions were an important factor limiting income inequality. Unions are involved in collective bargaining and, according to Fortin and Lemieux, "U.S. workers covered by such collective bargaining agreements earn significantly higher wages than workers in the uncovered sector" (1997: 79). Furthermore, unions, who often have the reduction of wage disparities as a stated objective, tend to demand higher wage's increase for less-well-paid workers. This leads to a more compressed wage structure, so that wage inequality among workers covered by collective agreements tends to decrease. However, the global effect of unionization on the overall wage dispersion may be more ambiguous, because unions may create wage disparities between covered and uncovered workers. It can be the case when workers benefiting from collective bargaining agreements already earned higher wages in the absence of unionization, so that unions allow them to capture extra rents (Fortin, 1997: 79). However, it is usually the first effect which dominates, so that it is commonly assumed that a higher rate of unionization is good for moderating an increase in wage inequality.

During the 1960s and 1970s, the unionization rate declined, but only slowly, from 29 percent in 1960 to 25 percent in 1979. But after 1980, the United States experienced a more dramatic decline in their rate of unionization. It lost "almost 1 percentage point each year from 1979 to 1985" (Fortin, 1997: 77), so that the rate of unionization among all workers in 1988 was only 17 percent. If only men are considered, the rate of unionization fell from 31 to 21 percent between 1979 and 1988. These figures would be even more striking if one considers only the U.S. private sector (Fortin, 1997: 80). Blackburn, Bloom and Freeman's research showed that this decline played a role in increasing inequality. They estimated that between 1980 and 1988 deunionization is responsible of "as much as 20 percent of the rising differential of earning between college graduates and other educational groups" (Wolff, 2000: 38).

A second institution often suspected of contributing to the increase in inequality is the minimum wage. According to Fortin and Lemieux, the wage floor set by the federal minimum wage changed dramatically during the 1980s: its real value "decreased by more than 30 percent during the 1980s, from a high of $2.90 in 1979 to a low of $2.01 (in 1979 dollars) in 1989" (Fortin, 1997: 79). With DiNardo, they estimated in 1996 that this decline in the real value of the minimum wage "accounted for up to 25 percent of the rise in male wage inequality and up to 30 percent of the rise in female wage inequality" (Wolff, 2000: 38). Card and DiNardo ploted in the figure 3.4 the real value of the federal minimum wage between 1973 and 2000. They noticed that it is "nearly a mirror image of the inequality series" in figure 3.3.

Figure 3.4: Real minimum wage, 1973-2000 (Card, 2002: 775)



However changes in unionization or in the minimum wage, which mostly affected people in the bottom of the income distribution, can difficultly explain the surge in very top wage. Other institutional factors need to be considered. Changing social norms that will be presented in the next sub-section may have caused "governments to become less willing to finance transfers and to levy progressive taxes" (Atkinson, 1999: 22). If one looks more closely to what happened with top marginal tax rate (see Table A1 in Appendix), some big changes that happened throughout the twentieth century in the U.S. give interesting insights. The top marginal tax rate increased dramatically during the Great Depression, from 25% in 1931 to 63% in 1932, and goes on

increasing until it reaches its highest value in 1944, with 94%. The next 35 years it remains quite high and was still as high as 70% in 1980. These very high top tax rates, which "created a substantial burden on the very top income groups", seems to be the "most natural and realistic candidate" for explaining why large fortunes did not recover from the Great Depression and World War II (Piketty, 2003: 23).

In contrast, since the 1980s one observes an impressive reduction in top marginal tax rate. This is part of a broader trend of tax cuts and reduced tax progressivity. For instance, the Tax Reform Act of 1986 replaced "the fourteen rates going from 11% to 50% by a two-rate structure of 15% and 28%" (Atkinson, 2004: 126). Therefore some economists argue that progressive income taxation was "responsible for the decline in top income shares over the first three-quarters of the last century", and also believe that the tax cuts at the top of the scale since the 1980s are part of the explanation for the trend reversal (Atkinson, 2004: 131). Following this decline in top marginal tax rates "from 70 percent in the early 1970s to 35 percent today", top executives have more incentives to take advantage of their position, and "the result is an explosion of income inequality at the top of the scale" (Krugman, 1997: 147). Lower top marginal tax rate may give incentives to work more, because top earners will keep more of their excess pay. But it may above all induce "high-income taxpayers to report more of their "true" income as taxable income". They will for instance reduce tax evasion or convert "non-taxable employer-provided benefits" into income forms that appear in the income tax statistics (Feenberg, 2000: 267). In this sense, it is possible that a top marginal tax rate reduction do not increase the real income inequality, but only the statistically visible one.

3.3.4. Changing social norms and neoliberalism

An alternative or complementary explanation is based on changing social norms, fostered by an ideological paradigm shift. This view is supported by Thomas Palley (2004), who argues that a shift from Keynesianism to neoliberalism took place in the 1970s. Between 1945 and 1970, Keynesianism was the dominant paradigm for understanding the determination of economic activity. European Keynesians, known as post-Keynesians, argued that "income distribution depends significantly on institutional factors". In the United States, it was the time of the "New Deal" style institutions of social protection and regulation were expanded. Economy was seen through "a bargaining power lens". Unionization increased, minimum wages were governed by laws and other systems of social protection were developed and strengthened (Palley, 2004: 2). It is

during this period that were created “large redistributive programs, such as Social Security and Aid for Families”, while “top marginal tax rates were set very high, in excess of 80 percent”. This fiscal pressure, along with social and union pressure, prevented high wages earners, who were “severely hit by the war wage controls”, to recover their salaries up to their prewar levels in relative terms (Piketty, 2003: 34).

But as noted above, during the 1970s, Keynesianism has been replaced by neoliberalism. The emergence of this new paradigm may be explained by at least three causes. First, Keynesians have always been divided. American Keynesians, known as neo-Keynesians, did not share the same view than post-Keynesians on many issues. As far as income distribution is concerned, neo-Keynesians tend to accept neo-liberal “paid what you are worth” theory. Through the supply and demand process, labor and capital are paid what they are worth, depending on their relative scarcity and their productivity (Palley, 2004: 1). Second, the success of New Deal Keynesianism, with thirty years of prosperity, “may have engendered beliefs that the core economic problems of income distribution and mass unemployment had finally been solved” (Palley, 2004: 3). Therefore American citizens were more prone to accepting neo-liberal views arguing that the institutions of social protection, minimum wages and unions are from far more a problem than a solution to the problem, in allusion to statement for Ronald Reagan about the government. Third, the surge of neoliberalism was favored by the context of the Cold War and the underlying ideological conflict. It was a “fertile ground for popularizing an economic rhetoric that spoke of “natural” free markets independent of governments and in which government regulation reduces well-being” (Pelly, 2004: 3).

In practice, the rise of neoliberalism had dramatic consequences on many institutions. First the rise of neoliberalism can help to understand the weakening of unions. The more conventional view arguing that the decline of unions is a result of the deindustrialization is not very convincing. As pointed out by Krugman (1997: 150), there is “no economic law saying that unionization has to be restricted to manufacturing”. A service company like Wal-Mart should be a good target for unionization. More significantly, “the decline in union membership comes from a collapse of unionization *within* manufacturing”. Therefore, the real cause of deunionization must lie somewhere else. Krugman’s answer is that business interests began in the 1970s to launch an offensive against unions, using “hardball tactics”. They fired in particular in an illegal way the workers organizing or supporting trade-union activities. They were encouraged by “Reagan’s suppression of the air traffic controller’s union” (Krugman, 1997: 151).

Neoliberalism can also explain the reduction of the minimum wage, because wage rigidities are no more seen as needed but are rather considered as being harmful in terms of unemployement, and because there is no need of such regulation when wages are fixed by the fair and invisible hand of the law of supply and demand. Neoliberalism can explain the reduction in social transfers and income tax progressivity as well. If voters agree with the idea that people are paid what they are worth, they might change their attitude towards any kind of redistributive policy, so that governments "become less willing to finance transfers and to levy progressive taxes" (Atkinson, 1999: 20).

Even today some of the most radical neoliberal economists are firmly opposed not only to any progressive taxation, but to any redistribution. Redistribution is necessarily unjust, because it violates the principle of "finders keepers" – "what I find is mine by right, and belongs to no one else" (Curzon Price, 2006: 119). Even if income inequality is a result of luck, and not of merit in a competitive world, it can be legitimate. Income inequality can be seen as "an inseparable part of economic growth, and even necessary for political freedom" (Curzon Price, 2006: 116). Redistribution is "lacking in moral content", "inefficient and degrading", and "incompatible with freedom, dignity and justice" (Curzon Price, 2006: 125).

Neoliberalism can also be seen as playing a significant role in the surge of top executives pay. First, different impediments to free market – labor market regulation, unions – which used to keep executive pay at reasonable levels, have been largely removed in the United States (Alvaredo, 2009: 20). Top executives became more able to set their own paychecks. This is "neither the quality of executives nor the marketplace for talent" that plays the main role in the setting of the top executive compensation. This is more the result of a system which leads to overstate both the executive's personal qualities and his alleged role in the success of the company. In short, the CEO's compensation is determined by compensation experts, who are hired by corporate boards, themselves being largely selected by the CEO (Krugman, 1997: 144-5).

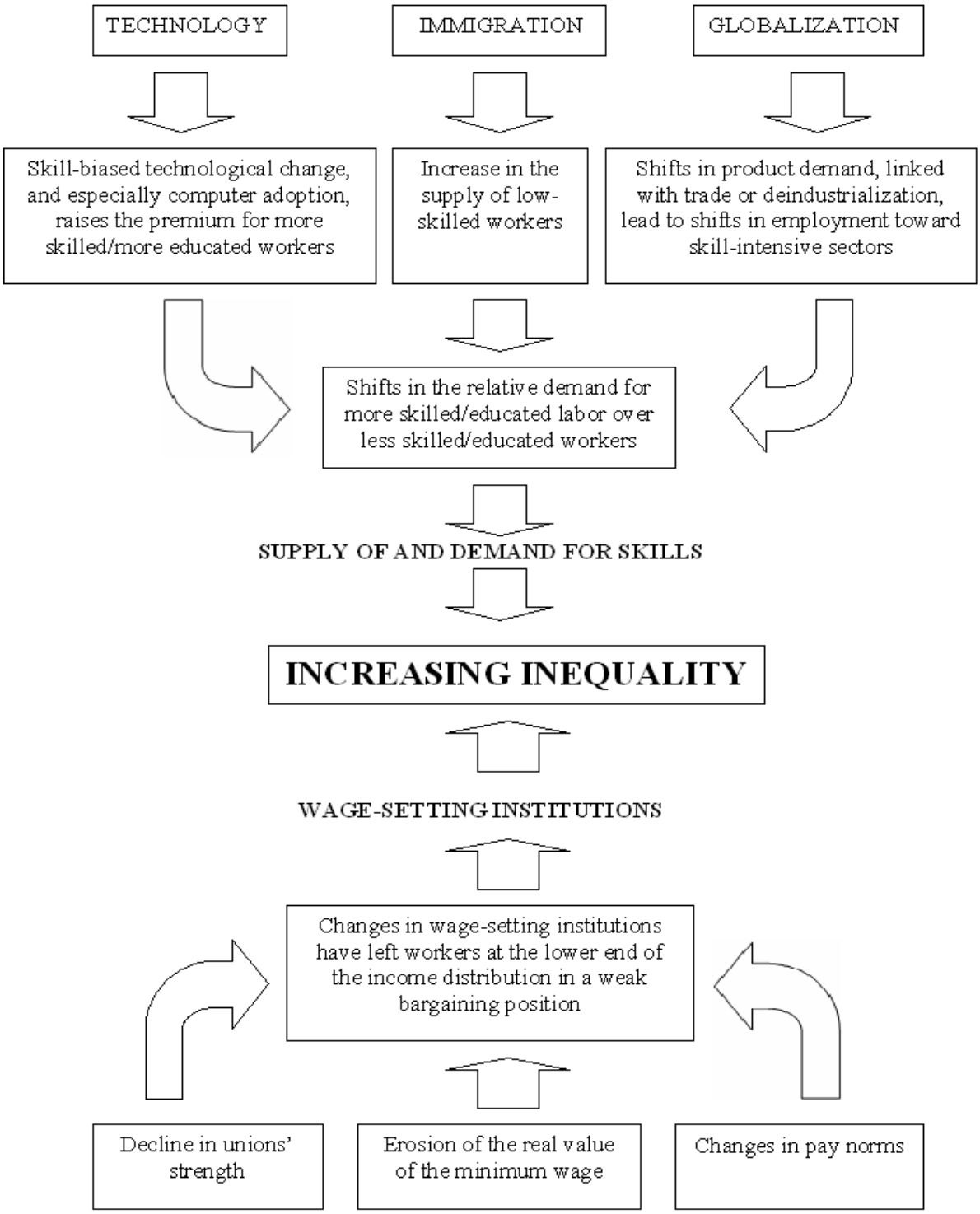
Second, inequality being no more seen as unfair when resulting from the supply and demand process, social norms changed so that very high wages became more acceptable (Alvaredo, 2009: 22). Contrary to what prevailed in the 90s, the huge wages for executives are no longer seen as "a possible source of reduced team spirit" or as "a potential source of labor problems". Top executives are no longer feared by the protests of shareholders, workers and politicians against their very high

remuneration. The "outrage constraint" is dead: media greet their business genius, politicians flatter the people who provide campaign contributions and unions are now powerless (Krugman, 1997: 144-5). The result is an explosion of income inequality at the top of the scale. The average compensation of the chief executives at 102 major companies increased from 1.2 million USD in today's dollars in the 1970s to 9 million USD by the early 2000s, or from 40 to 367 times the pay of the average worker (Krugman, 1997: 142).

3.4. Concluding remarks

Chapter 3 first presented the renewed increase in income inequality which has been experienced by different advanced economies since the late 1970s. This new trend challenged the Kuznets hypothesis. Second, emphasising on the United States' case, different explanations were proposed. Some fit well in the Kuznets perspective, such as the theory based on shift in jobs from manufacturing to services, which is very similar to the industrialization process proposed by Kuznets. Other arguments such as the impact of changing social norms and neoliberalism are more distant from Kuznets arguments. It remains difficult to assess the relative importance of these different explanations. There is still no consensus among scholars to say which of these explanations is most relevant and best accounts for the new evolution of inequalities. These alternative explanations need not to be seen as competing and mutually exclusive. They may rather be regarded as complementary and reinforcing each other. Finally, Figure 3.5 below (Conceiçâo, 2001: 142) gives an interesting summary of most of these explanations. On the one side there are explanations which focus on supply of and demand for skills, which correspond more or less to the transatlantic consensus. On the other side other explanations focus on wage-setting institutions, which corresponds broadly to the institutional factors and changing social norms arguments.

Figure 3.5: Alternative explanations for the increase in inequality in the United States



4. FINNISH CASE

4.1. Introduction

Finland belongs to the so-called "Nordic (or Scandinavian) model". This refers not only to a large public sector (which can be seen, for example, in high tax rates and elevated social

expenditure) but also to such outcomes as even income distribution, gender equality and low poverty rates (Kautto, 2004: 68). Additionally, Nordic welfare states are traditionally characterized by extensive and redistributive welfare policy, as well as by broad participation in working life and relatively low unemployment (Pelkonen, 2008: 52).

Between 1945 and 1980, Finland experienced a clear transition towards better living standards and enhanced societal security. Income inequality fell remarkably over the 1960s and 1970s. This seems to be consistent with Kuznets' hypothesis. Then it remained almost constant until the turning point in the beginning of the 1990s. In the first half of the 1990s, Finland was hit by a severe economic recession, which "constitutes the deepest economic recession experienced in the industrialized countries since the Great Depression of the 1930s in the USA" (Kautto, 2004: 70). Since then, income distribution has become more unequal, first with a modest increase during 1990-1994, coinciding with economic slowdown and a period of rapidly increasing unemployment, followed by a faster increase in income inequality as the Finnish economy recovered (Riihelä, 2001a: 1). This chapter will try to explain this unprecedented increase in income inequality.

4.2. Different income's concepts

In studies about Finnish income inequality, three different income concepts are often considered: factor income, gross income and disposable income. Factor income is composed by wages, salaries, income from self-employment and property income. In order to get gross income, income transfers such as pensions, sickness insurance benefits, unemployment insurance benefits and others are added to factor income. Gross income minus direct taxes (including other tax-like payments) is disposable income. From the viewpoint of economic welfare or standard of living, the most crucial income concept is *disposable income* (Uusitalo, 2000: 8). A more detailed decomposition of these different income's concepts is given in the Appendix, Figure A1.

4.3. Trends in income inequality

Over the 1960s and 1970s, the trend in Finnish income inequality was consistent with the decreasing part of Kuznets hypothesis. The Gini coefficient for factor income decreased from 38 per cent in 1966 to 35 per cent in 1976 (Riihelä, 2001a: 1). Factor income's distribution became more equal between 1966 and 1976, as shown by Figure 4.1 below. One can also notice that disposable income's decline was more pronounced that for factor income during this period.

According to Uusitalo, this was due to the growth of social transfers and direct taxes, but also to the income policy introduced in the late 1960s (Uusitalo, 2000: 9).

Figure 4.1: Gini coefficient of incomes in Finland 1966-1999 (Riihelä, 2001b: 2)

In the 1980s, thanks to the redistributive impact of transfers and taxes, disposable income's distribution remained almost constant, despite a slight increase in factor income inequality, which can be explained by an increased proportion of elderly and non-working population (Uusitalo, 2000: 9). As shown by Figure 4.1 above, the Gini coefficient of disposable income remained practically constant between 1976 and 1994, around 20-21 per cent.

However, during the 1990s, the situation changed. Finland experienced an unprecedented increase in its income inequality. Its Gini coefficient of factor income increased dramatically from 39 per cent in 1990 to 48 per cent in 2000. It can be noticed from Figure 4.1 that there was a dual development during the 1990s. Depending on the type of income considered, the rise did not occur at the same pace. In the early 1990s, the Gini coefficient raised more for factor income than for disposable income. Gini coefficient for factor income increased from 39.4 percent in 1990 to 46.53

percent in 1994, while the corresponding figures for disposable income are 20.45 percent in 1990 and 21.02 percent in 1994 (Riihelä, 2005: 30).

After 1994, the situation reversed. As the Finnish economy recovered, both gross income and disposable income started to rise quite rapidly, whereas the trend in increasing inequality in factor income was stopped after 1997. From 1993 the Gini coefficient for factor income has risen much less than the Gini coefficient for disposable income. "The Gini coefficient for factor incomes rose by 2.9 percentage point from 1993 to 1999 but for gross income the respective increase was 4.5 percentage points. The rise for disposable income was even larger, 4.8 percentage points" (Riihelä, 2001b: 13).

The next section will try to explain this new trend in income inequality, as well as the divergence in space for factor and disposable income. Four attempts of explanation will be presented, from the less to the more relevant.

4.4. Explanations for this new trend in income inequality

4.4.1. Structural change

During the 1990s, Finland experienced an industrial restructuring. Finnish national economy was transformed from one based on the forest and metal industries towards high technology sectors. This transformation was strongly linked to the rise and success of the ICT cluster, and Nokia in particular. It was mainly due to the growth of mobile communications revolution. Finland became a knowledge-based economy, based on new technologies, a high level of know-how and innovativeness (Pelkonen, 2008: 55).

Still in 1990 Finnish industrial production and exports were dominated by paper, pulp, metal products and machinery. By 2000 the electronics industry became the biggest export industry. In 2000 Finnish Nokia group was the world's biggest manufacturer of mobile phones (Kiander, 2004: 12). In the post-recession years, "the output of the electronics industry was multiplied more than six-fold and its relative share grew from 8 per cent to over 17 per cent of total industrial production – at the time when the total production was also almost doubled" (Kiander, 2004: 13). National

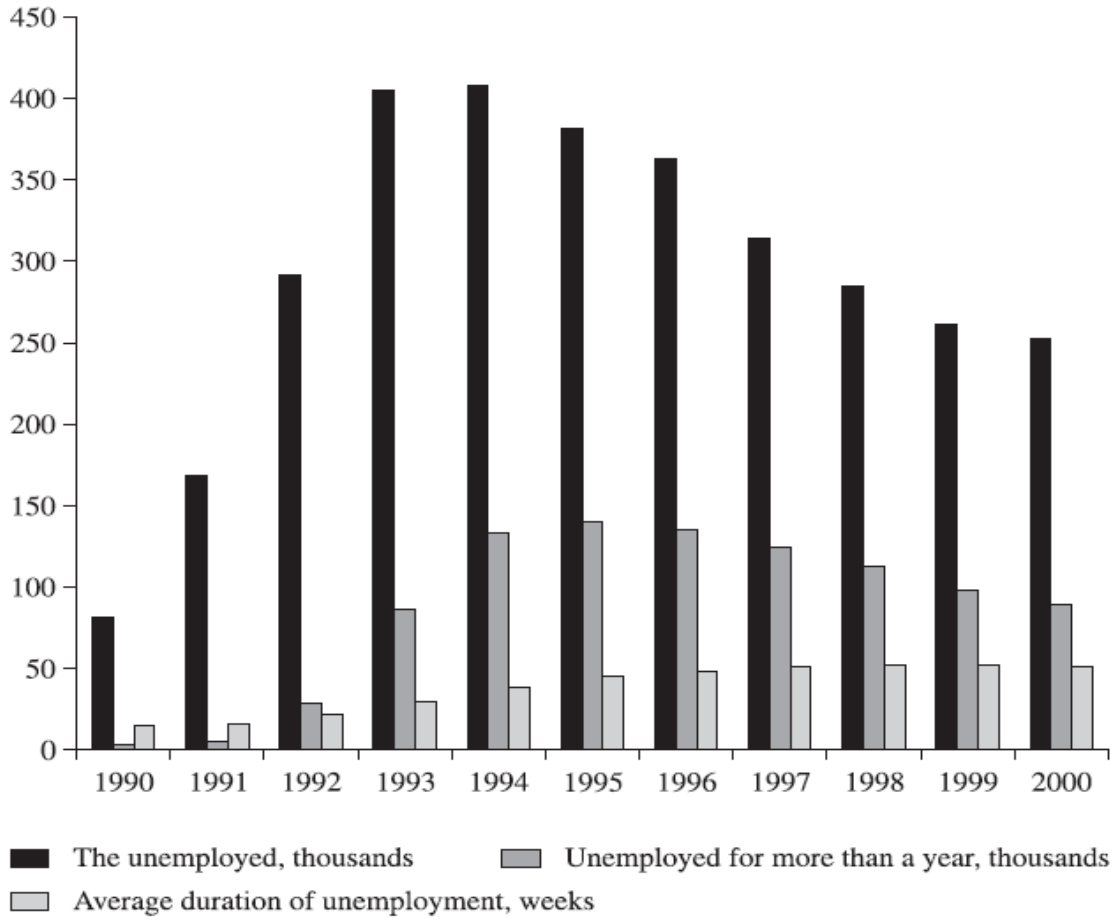
technology policy played a strong if not decisive role behind that phenomenon. There has been a strong public support to R&D and higher education (Kiander, 2004: 14).

This spectacular structural change could be seen as an explanation for the increase in income inequality, according to the hypothesis of a skill-biased technological change that entails a "shift of demand away from unskilled workers towards skilled workers" (Atkinson, 1999: 1). This hypothesis seemed not to have been tested in the literature. However, there are good reasons not to believe in the relevance of this hypothesis. It can be advanced that the shift of demand was compensated by a shift of supply due to a strong support to R&D and higher education. It could therefore be assumes that there was hardly any change in the skill premium. But, more importantly, as it will be shown in chapter 4.4.4., the unprecedented income inequality surge is mainly due to a dramatic increase in the very top incomes, linked with an increase in capital income shares.

4.4.2. Unemployment

The rise in factor income inequality from 1990 to 1994 can be explained by the exceptionally long and deep economic crisis experienced by Finland, and its consequences on unemployment. During these four years, output was reduced by more than ten percent and the unemployment rate quadrupled to nearly 17 percent (Riihelä, 2008: 12). Figure 4.2 below shows the huge increase in unemployment experienced in Finland between 1990 and 2000.

Figure 4.2: Key figures of unemployment in Finland , 1990 to 2000 (Kautto, 2004: 75)



As a result from unemployment, there was a significant reduction in the proportion of households' income from work. The share of earned income fell from 99.7 per cent to 80.2 per cent (Riihelä, 2001b: 6). Between 1990 and 1994, the increase in unemployment level reduced factor income by 18 per cent (Uusitalo, 2000: 7).

In order to see how the distribution of income has been affected by the rise of unemployment, a decomposition analysis has been made. The population was split into two groups: "those households where household head is in work, denoted by group 1, and those where household head is not in work, denoted by group 2, including mainly unemployed and pensioners" (Riihelä, 2001b: 7).

Table 4.1 shows that population shares of group 2 increased between 1990 and 1994, from 21.1 to 33.0 per cent. Unemployed represented only 0.6 per cent of the population in 1990, compared to 8.7 per cent in 1994. On the other side, the entrepreneurs and especially the workers have seen their population shares declined. The workers share was 30.1 per cent in 1990, and only 20.2 in 1994.

Table 4.1: Population shares of different groups (Riihelä, 2001b: appendix p.2)

Population group	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Working activity										
Group 1	78.9	77.0	72.4	68.5	67.0	68.5	68.7	69.4	70.2	70.9
Group 2	21.1	23.0	27.6	31.5	33.0	31.5	31.3	30.6	29.8	29.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Socio-economic status										
Farmers	5.7	5.5	4.9	4.8	4.9	4.6	4.5	4.1	3.7	3.4
Entrepreneurs	7.4	7.4	6.8	6.6	6.3	6.4	6.3	7.0	7.3	7.1
White collars	16.2	16.1	15.4	15.0	15.1	15.3	15.8	15.5	16.6	17.8
Blue collars	19.5	20.3	20.1	19.9	18.5	18.8	19.1	19.1	18.3	19.1
Workers	30.1	27.8	25.1	22.3	22.2	23.3	23.1	23.7	24.3	23.5
Pensioners	18.4	17.9	18.7	19.8	20.2	20.6	20.9	21.0	20.7	20.4
Unemployed	0.6	2.3	5.0	8.0	8.7	7.5	6.8	5.9	5.4	5.1
Others	2.1	2.9	3.9	3.7	4.1	3.4	3.5	3.8	3.7	3.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

It can also be noticed (see Table A2 in Appendix) that inequality was higher for those who were not in work, i.e. the unemployed and the pensioners (group 2). All six measures used – the generalised entropy measures (including the mean log deviation (c = 0) and the Theil index (c = 1) and the squared coefficient of variation (c = 2)), the variance of logarithms, the Atkinson index (e = 0.5, 1 and 2) and the Gini coefficient (Riihelä, 2001b: 7) – have higher figure for group 2 than for group 1, whatever concept of income is considered.

If one summarize, during the recession, a higher proportion of household's head lost their job and joined the group 2. People in this group experienced lower real average disposable income than people still in work, and income inequality within this group was higher. Therefore, this increase of unemployed people naturally entailed an increase in factor income inequality.

However, this rise in factor income inequality was not accompanied by an increase in disposable income inequality, due to the role of the social security system. Furthermore, this rise in unemployment during the recession is followed by a fall in unemployment from 1995 – even though the unemployment level remains higher than before the recession. Therefore, it is highly improbable that unemployment can explain the huge rise in disposable income inequality experienced after 1994, whereas the factor income inequality was almost stabilizing. Other explanations are needed.

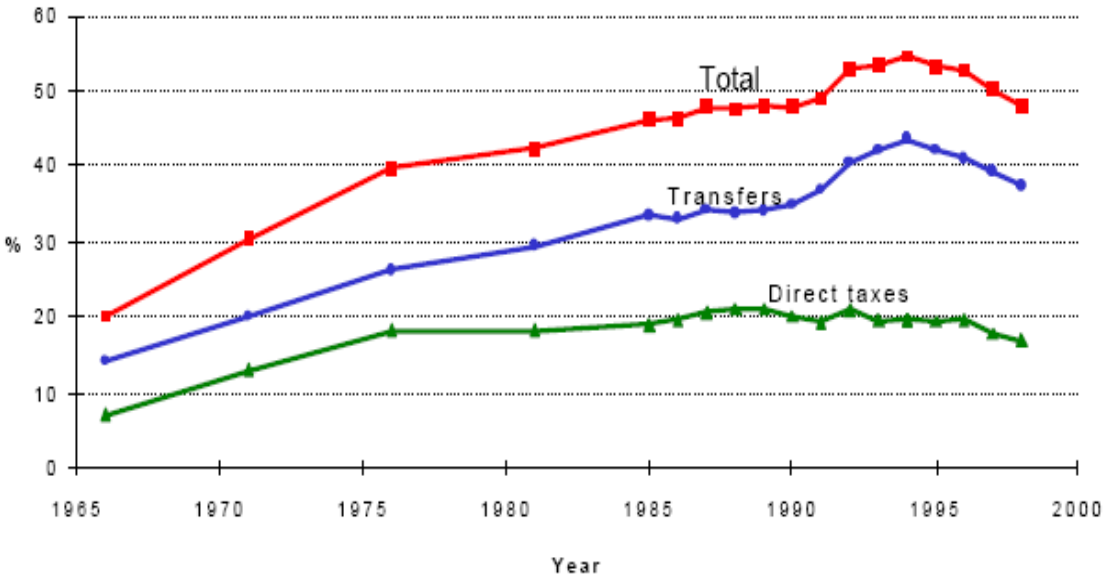
4.4.3. Social security system and ideological change

As a Nordic welfare state, Finland established a comprehensive social security system of reasonably high quality before the 1990s. There is a residence-based basic security plus earnings-related benefits for those with a work history. In addition to these, there is last resort, temporary social assistance provided by local authorities. Furthermore, tax-financed social care and health services are run by local authorities and available to all residents according to need (Kautto, 2004: 72).

The rise in factor income inequality from 1990 to 1994 was compensated by an increase in income transfers by almost 40 per cent over this period, so that the drop in disposable income was only 7.6 per cent. This huge increase in income transfers is due to the growth of unemployment insurance, pension expenditure and social assistance expenditure (Uusitalo, 2000: 7). Transfers and social security became the second biggest source of income throughout the period. Its share has risen sharply from 27.1 per cent in 1990 to 41.9 per cent in 1994 (Riihelä, 2001b: 6). The result is that during these recession years, inequality as measured by disposable income – the most crucial income concept from the view point of economic welfare – almost did not grow. The rise in the Gini coefficient for gross income from 1990 to 1993 was 0.5 percentage point compared with a rise of 5.8 percentage points for factor income (Riihelä, 2001b: 13).

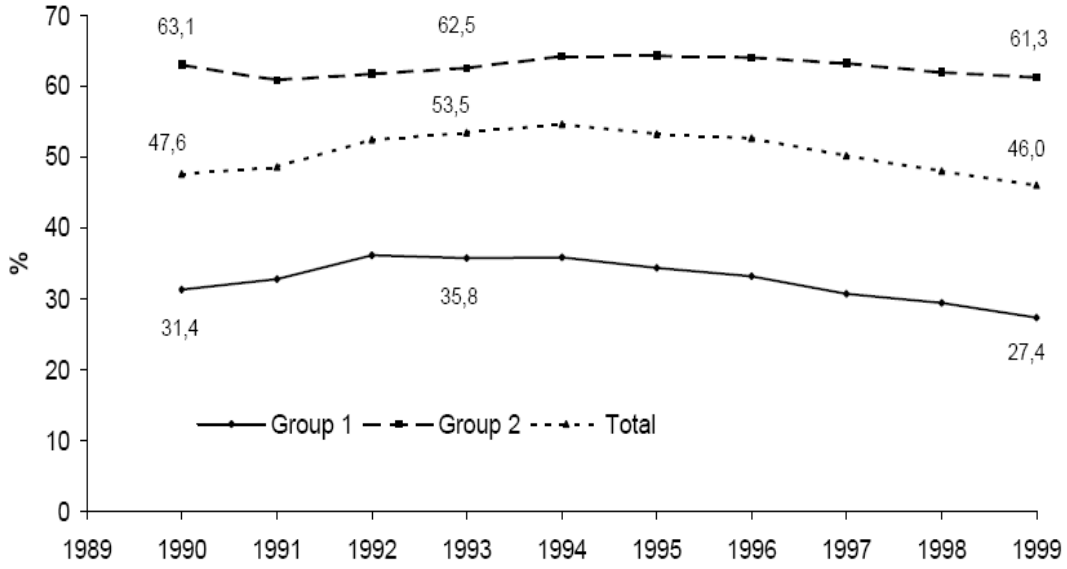
The redistributive impact of transfers and taxes appears to have fallen since 1994, as it is shown by Figure 4.3 below. According to Uusitalo (2000: 11), after the recession income inequality increased due to a decline in redistribution through transfers and taxes.

Figure 4.3: The distributive effects of transfers and direct taxes in 1966-1998
(Uusitalo, 2000: 11)



This view is also supported by Riihelä, Sullström, Suoniemi and Tuomala. Using in Figure 4.4 below the average redistribution of income measured in terms of the relative difference between the Gini coefficient of factor income and disposable income, they showed that the redistributive contribution of direct taxes and transfers fell during the latter part of the 1990s (Riihelä, 2001b: 13). This fall can be observed for the whole population, but also for the two groups previously seen – group 1 with household head in work and group 2 with household head not in work – taken separately.

Figure 4.4: The extent of redistribution; for groups 1 and 2 and the whole population
(Riihelä, 2001b: 15)



This fall in the redistributive impact of transfers and taxes is due to a deep political ideological change. With the recession, the governmental policy emphasis shift from social to economic goals. According to Jessops, "while neoliberalism has been hegemonic in the US and other Anglophone countries, more restricted neoliberal policy modifications have taken place in most advanced capitalist economies" (Pelkonen, 2008: 53). This also took place in Finland, where the governments of Holkeri (1987–1991) and Aho (1991–1995) already began to give a growing prominence to market mechanisms and competition (Pelkonen, 2008: 54). The new goals of the governments were to cut back public spending, lower the tax rate, review incentives and emphasize work (Kautto, 2004: 71).

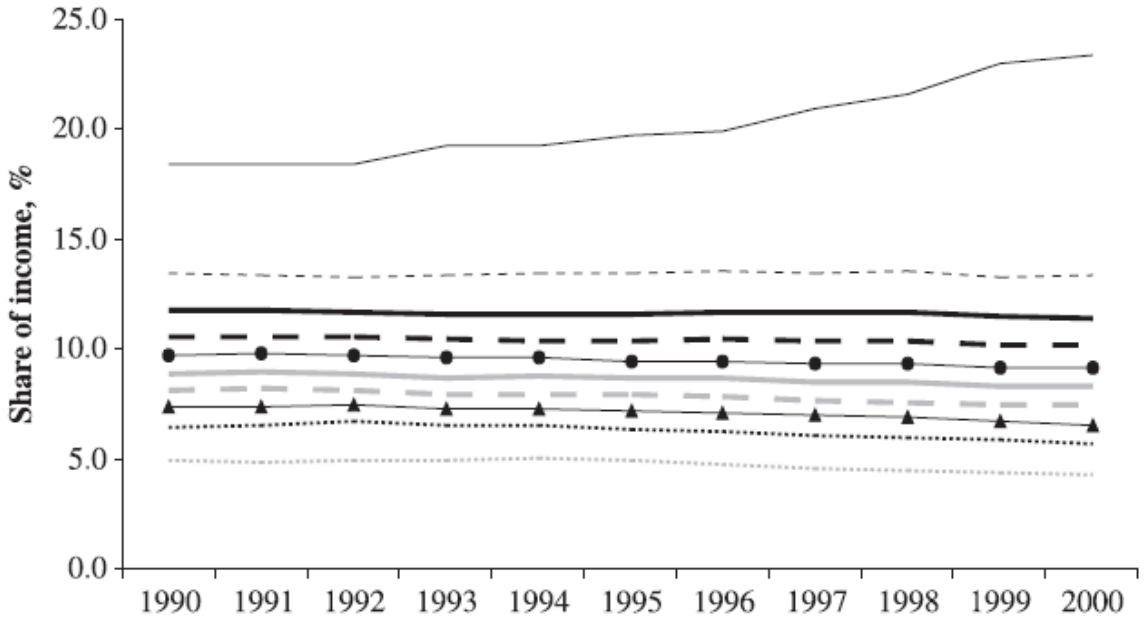
These political ideological changes had consequences for social policies. In the 1990s, important changes were made to unemployment security, social assistance and housing allowance. These modifications usually weakened social security. Increases in the level of unemployment security were cut and terms for receiving this benefit were tightened. More severe sanctions were introduced for those refusing to work. Increases in the level of social assistance were omitted. The so-called inflation adjustments for housing allowance were abolished in 1992, while increases in the level of rents that were taken into account have been omitted since 1996. (Kautto, 2004: 73). The replacement ratio of unemployment benefits and old-age pensions declined. More drastic cuts were

made to child benefits and other family support programmes. Health care subsidies were also reduced and the user fees increased (Kiander, 2004: 17).

Linked with this political ideological change, there was an attempt from the centre-right government of Aho (1991-1995) to diminish the role of trade unions (Kiander: 17). But this attempt failed in a country where unionization rate is one of the highest in the world (more than 80 percent) and the coverage of collective agreements is almost 100 percent. And actually, the corporatist system was even strengthened during the economic transformations of the 1990s. All post-recession governments have been eager to emphasize the importance of the co-operation of the labour market parties. (Kiander: 22) Therefore, Finland did not experience any decline in unionization. This can not be an explanation for the increase in income inequality.

However, the fall in the redistributive impact of transfers and taxes can difficultly be seen as the main explanation for the unprecedented increase in income inequality in Finland. This can be easily understood by looking at Figure 4.5 below, which illustrates the development of disposable income shares for the different deciles in the 1990s. The line for the lowest income decile in Finland is at the bottom, the line for the second lowest above it, etc. The highest line describes the income share of the highest income decile.

Figure 4.5: Income distribution between deciles (Kautto, 2004: 78)



This figure shows that share of income enjoyed by the decile at the bottom of the income distribution display hardly any change, possibly a very slight decrease. The highest change occurs at the top of the income distribution, which experience a huge increase. It is quite straightforward that the change in social security which has lowered the redistributive impact of transfers and taxes affects mostly the lowest incomes, but that it can not explain the huge increase in the top income share. Therefore, an alternative explanation is needed and is proposed in the next subsection.

4.4.4. Dual income tax and its effect on top incomes

This fourth explanation gives a central role to taxation. In the literature, this is the strongest explanation for the unprecedented increase in disposable income inequality after the recession in Finland. This explanation is consistent with Piketty and Saez view. These authors challenged the skill-biased technological change thesis as a cause of the surge in top incomes in many advanced countries observed from the 1980s, and argue instead that the key factor is a change in social norms (Riihelä, 2005: 14). According to this view, Finland also experienced a change in social norms, and this change is the main cause of the rise in income for the very top earners, especially due to the increase share of dividends. Top managers no longer seem to be ashamed of reward themselves with very high incomes. Avarice is no longer restrained by an effective code which would ban such behaviour (Riihellä, 2005: 15).

The huge increase in income from capital is attributed to the Finnish tax reform who took place in 1993. This reform introduced the so-called dual income tax, which treats capital and wage income differently. It combines progressive taxation for earned income with a flat rate of tax on capital income (eg. dividends, interest and capital gains) and corporate profits (Riihelä, 2005: 16). Dual income tax has to be opposed to the so-called comprehensive income tax system, where all the taxpayer's various types of income are added together – giving the comprehensive income, which is an indicator of a citizen's ability to pay – and subject to a single tax schedule (Genser, 2006: 272).

After the 1993 reform, all capital income was taxed at a flat 25 % rate, which was equal to the lowest marginal tax rate on earned income, whereas the highest one was approximately 63 %. This left a gap between the marginal tax rates on labour vs. capital income of 38 percentage points for the high income earners (Pirtillä, 2006: 2). This huge gap gave incentives for tax avoidance: high-income earning individuals may try to shift part of their labour income tax base, subject to high

marginal rates, into the capital income tax base, subject to low marginal rates. This is "the 'Achilles' heel of the dual income tax" (Pirtillä, 2006: 1).

This can be done because these two components cannot always be observed directly (Riihelä, 2005: 17). Most of the time, one can easily distinguish capital and labour income. Capital income "includes dividends, interest income, rents, but also rental values as well as capital gains of real capital and property", and labour income "consists of wages and salaries, non-monetary fringe benefits, pension payments and social security transfers" (Genser, 2006: 276). However, for self-employed or active owners of firms, it is not so easy to divide their business income into a labour and a capital component: which part remunerates the capital invested and which part remunerates the working into their own firm? This can lead to tax avoidance. Tax evasion is also possible – and even encouraged – by this system. Individuals employed by their own company generate income from labour (salary) and income from capital (dividends). They may decide to pay themselves a modest salary, subject to progressive taxation, and distribute significant dividends, subject to the flat taxation, at the end of the business year.

The introduction of the dual income tax is assumed to have caused a strong reduction in the progressivity of the income tax. The following example is an illustration: "A person with an income (equalised) of 15'000 today's euros paid about 22 per cent of income in direct (income) taxes in 1990, slightly less in 2002. A person with 60'000 euros paid 42 per cent in 1990, and only 36 per cent in 2002" (Riihelä, 2005: 19).

But more importantly, the introduction of the dual income tax is responsible of the huge rise in the very top income's share, linked with the unprecedented increase in the share of capital income. With 85.3 per cent of disposable income in 1999, earnings (= labour income plus entrepreneurial income) are still the biggest income component of household income. Nevertheless, the share of capital income has risen from 6.6 per cent in 1990 to 17.4 per cent in 1999 (Riihelä, 2001b: 21). The number of households receiving large amounts of capital income from property, share income and capital gains has risen. A notable example is the increased personal ownership of equities, especially during the latter part of the 1990s. During the 1990s there has been the substantial shift of wealth for the stock market. The fraction of capital income earned by the top one per cent group increase dramatically, from 14% of incomes in 1990 to 52% in 2002. (Riihelä, 2005: abstract).

Figure A2 in Appendix shows the income composition by deciles in 1990, 1993 and 1999. Labour income represents a growing share of total income when one goes from the first decile to the ninth (Riihelä, 2001b: 15). Then, for the tenth decile, its importance is lower. This reflects large receipts of capital income and entrepreneurial incomes in the top decile. The high level of capital income also reflects the considerable concentration of wealth and therefore income from wealth. In 1999 the tenth decile gets 40.5 per cent of its income deriving from capital, other deciles 14 per cent and less (Riihelä, 2001b: 16).

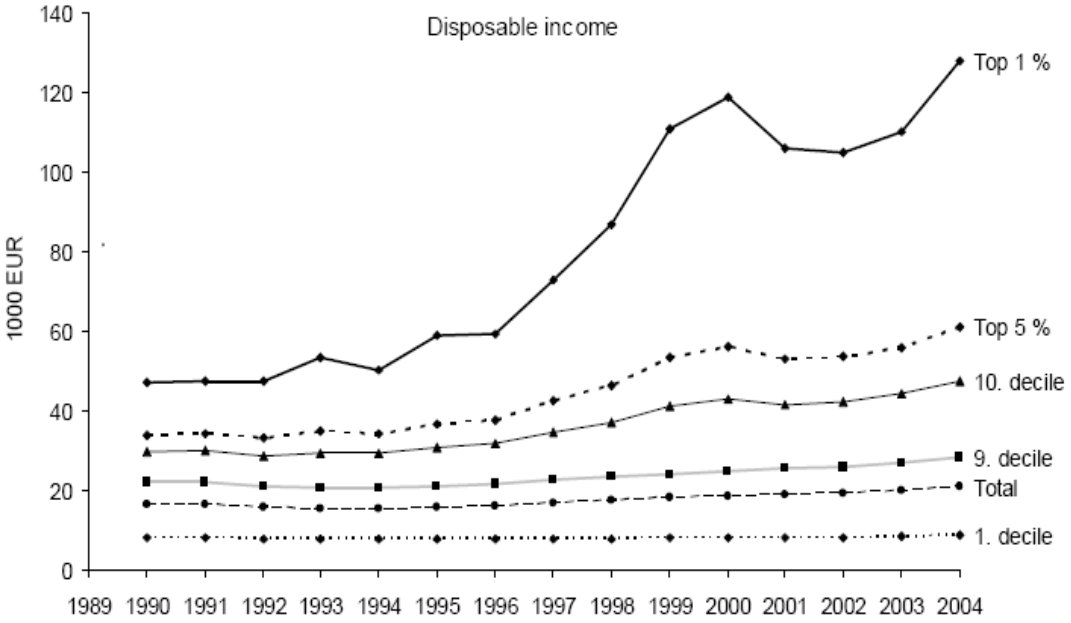
Figure A3 in Appendix compares composition of gross income and taxes in the different income deciles in 1994 and 2004. The more one move up the income distribution, the higher is the share of capital income. In the top income per cent the share is particularly high, and in fact they pay most of their tax from capital income. One also can notice a huge increase of capital income share in the top decile, and even more in the top percentile, from 1994 to 2004. Furthermore, almost all real income growth for those in the top per cent in the distribution has accrued from capital income (Riihelä, 2008: 15).

This sharply increasing pattern of capital income is entirely due to dividends. The share of dividends and interest income in total capital income has increased remarkably in the top one per cent group. It has increased from 34 per cent in 1990 to 64 per cent in 2002. The share of dividends in total gross income in the top one per cent group was 33 percent in 2002, while the share of capital gains was 13 per cent (Riihelä, 2005: 11). The sharp surge in real dividends following the 1993 reform was tax driven. The key importance of the 1993 tax reform for the increasing trend of the share of the capital income is also supported by the declining trend of the entrepreneurial income observed over the period from 1994 to 2000 (Riihelä, 2005: 17).

All these previous considerations explain that during the economic recovery, real growth in disposable income has been very rapid at the high end of income distribution. Figure 4.6 below shows that top incomes have raised a great faster than the average. Top one per cent's incomes increased by 121.9 percent over the period 1990-2000 (Riihelä, 2001b: 5). The growth in mean income has been more moderate and the real incomes of those in the first income decile show little growth. (Riihelä, 2008:13) The income growth for the whole population over this period was only 19.3%.

Figure 4.6: Mean real disposable income in some income deciles in 1990-2004

(Riihelä, 2008: 18)



The impact of capital income as contributor to overall inequality has been increased. In 1990 only 19 per cent of the income inequality of the total net income is attributed to incomes from this source while in 1998 that figure is 90 per cent (Riihelä, 2001b: 21). Capital income has been responsible for most of the increase in the Gini coefficient.

4.5. Concluding remarks

Chapter 5 focused on the unprecedented increase in income inequality experienced by Finland during the 1990s. It has been first shown that this dramatic increase can be divided in two different phases. From 1990 to 1994, when Finland was experiencing a deep economic crisis, the increase in inequality affected mostly factor incomes, while disposable incomes displayed hardly any change. Then, from 1994 to 2000, while the Finnish economy was recovering, the increase was more pronounced for disposable incomes than for factor incomes. Second, it has been argued that these observed trends were mostly explained by the consequences of the economic recession on unemployment for the early 1990s. There were more unemployed people, and inequality was higher among them than among workers. It has also been argued that changes in the social security towards less generous transfers, political changes towards neoliberal policies, and above all the introduction of the dual income tax in 1993 seemed to be more relevant for the increase in inequality during the late 1990s. Finally, it can be concluded with Uusitalo (2000: 13) that "the

Finnish welfare state is not as generous, it is not as universal and it leans more on means-tested benefits than just before recession".

5. SWISS CASE

5.1. Introduction

Switzerland is a rather special welfare state. Historically, the Swiss welfare state developed late, due to direct democracy. Switzerland is difficult to classify according to the three major types of welfare state proposed by Esping Andersen in 1990: liberal, conservative and social democratic. It may be seen as a liberal welfare state by the important role enjoyed by the private sector in the pension system (2nd and 3rd pillars) and the health insurance, as well as its relatively unregulated labor market. It may also be seen as a conservative welfare state due to significant expenditure in income maintenance and a family policy oriented toward traditional family (Bertozzi, 2005: 20).

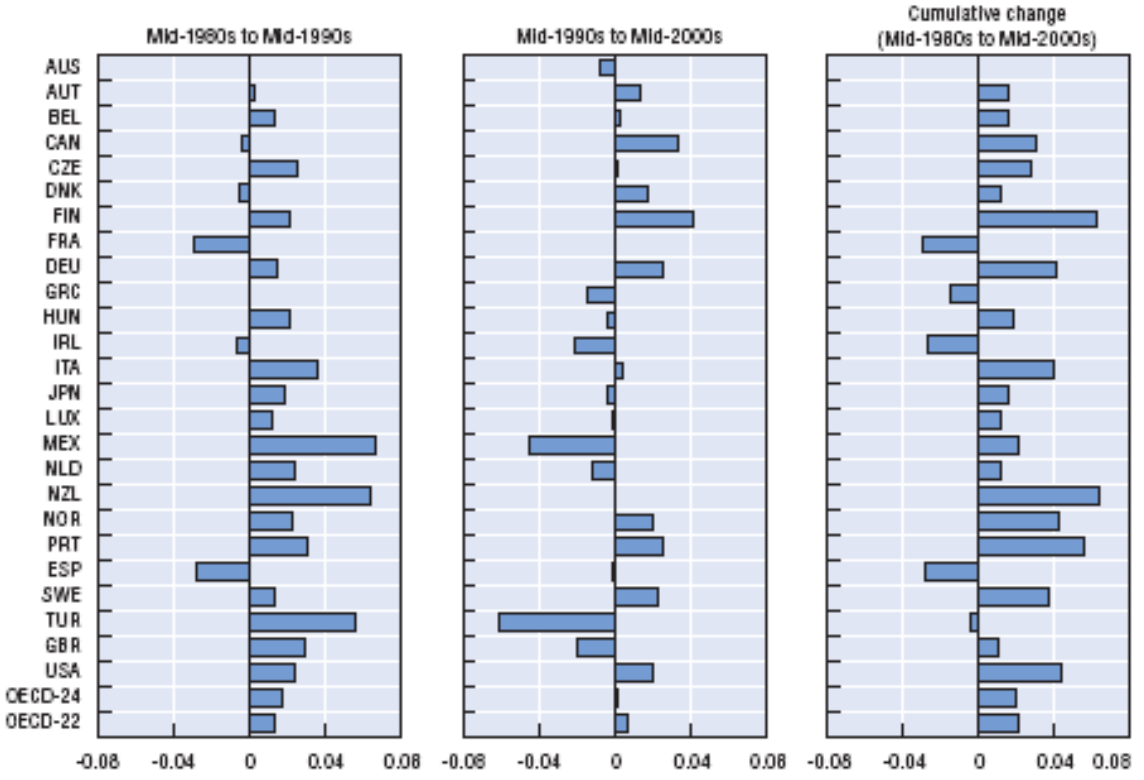
During most of the 20th century, unemployment was not a major issue in Switzerland due to a very low unemployment rate in international comparison – often under 1%. Labour relations were relatively stable, conflicts being usually resolved amicably on the basis of a so-called peace agreement existing since 1937 between the head organizations of employers and employees. Nevertheless, in the early 1990s Switzerland was hit by the economic recession. The labor market has been severely affected, with a dramatic increase in the unemployment rate, from 0.5% in 1990 to 5.2% in 1997 (Bolzani, 2002: 115).

Switzerland is additionally a small open economy. The proportion of foreigners in the resident population is high, standing at around 20 per cent, and trade constitutes an important part of GDP. Switzerland is often considered a tax haven due to its general low rate of taxation. Moreover, Switzerland has been among the top highest countries in terms of its GDP per capita since at least 1960 (swissworld.org). However, comparatively to the United States and the EU countries, the long term evolution of the Swiss per capita income since the 1970s has been quite disappointing. The gap between the Swiss and the EU index of income per capita has fallen from a level of 40% higher for Switzerland in 1970 to a level barely higher than 4% in 2005. Similarly, the Swiss index was 25% higher than the U.S. index in 1970. It became 15% lower in 2005 (Macculi, 2009: 105).

When one is interested in the evolution of income inequality and its causes in Switzerland, it is first surprising that until recently there was not so many data available about this issue in Switzerland. For instance, figures about income inequality as measured by the Gini coefficient are

not as numerous for Switzerland as for most other developed countries. This can be exemplified by figure 5.1 below, which shows that the 2008 OECD report called "Growing Unequal?" do not report any trends in income inequality for Switzerland. From all OECD countries, only Australia and Poland were in the same situation of lack of available data.

Figure 5.1: Trends in income inequality: point changes in the Gini coefficient over different time periods (OECD, 2008: 27)



StatLink http://dx.doi.org/10.1787/420558357243

Note: In the first panel, data refer to changes from around 1990 to the mid-1990s for the Czech Republic, Hungary and Portugal and to the western Länder of Germany (no data are available for Australia, Poland and Switzerland). In the second panel, data refer to changes from the mid-1990s to around 2000 for Austria, the Czech Republic, Belgium, Ireland, Portugal and Spain (where 2005 data, based on EU-SILC, are not deemed to be comparable with those for earlier years). OECD-24 refers to the simple average of OECD countries with data spanning the entire period (all countries shown above except Australia); OECD-22 refers to the same countries except Mexico and Turkey.

Source: Computations from OECD income distribution questionnaire.

However, since the 2000s a few studies have investigated the evolution of inequality in Switzerland. Ernst, Gerfin and Leu (2000) assessed the evolution of inequality between 1982 and 1992, using Lorenz and Generalized Ordinates, Gini coefficient, as well as decomposition by population subgroups based on inequality indices belonging to the Generalized Entropy family. Küng Gugler and Blank (2000) observed the evolution in the overall wage inequality in Switzerland between 1992 and 1997. Inequality is measured using inter-decile ratios (D10/50, D90/50 and D90/10), Lorenz Curves and the mean logarithmic deviation (MLD). Bolzani and Abul Naga (2002) also observed the evolution in the overall wage inequality between 1992 and 1997. Their inequality measures are the Gini coefficient, inter-decile ratios (D90/10, D75/25), the Lorenz curve as well as the generalized Lorenz curves, which "introduce an element of preference for higher wages" (Bolzani, 2002: 116). Dell, Piketty and Saez (2003) constructed a data base (see Table A3 in Appendix) on the evolution of top income shares between 1933 and 1996. Zürcher (2004) evaluated the evolution of market and disposable income inequality between 1982 and 1992 using the traditional Gini-index, as well as three different Generalized Entropy measures, with $\alpha = -0.5$, 0 (MLD) and 1 (Theil's index). Macculi (2009) assessed the evolution of income inequality between 1999 and 2006, using the Gini coefficient, the mean log deviation and a Generalized Entropy measure ($\alpha=0$).

These studies are not homogeneous. They differ in their objectives, in their methods, in the data base and the inequality measures they used, as well as in the time-period and the type of income they consider. It is therefore difficult to compare directly these different studies. However, these studies already give us some interesting facts about the evolution of income inequality in Switzerland. Few explanations are proposed, but generally within a different logic than that previously seen in the example of the United States and Finland. There is hardly any attempt to link the evolution of income inequality with skill-biased technological change, globalization and immigration, evolution in union's strength, change in pay norms, or change in taxation. More details are now given in the following subsections.

5.2. Different income's concept

The five different studies considered here do not use the same data set for evaluating income inequality, and the income's definition is not similar.

Ernst, Gerfin and Leu (2000: 294) based their analysis on total disposable household income. This net income is determined by adding self-employment income, realized wealth income, other incomes and transfers to labour earning, and subtracting direct taxes and social security contributions. They adjusted household income to household size using the equivalence scale employed by the OECD (1995) – the square root of household size – and additionally performed sensitivity analysis with unadjusted household income.

Küng Gugler and Blank (2000: 311) based their study on the Swiss Labour Force Survey (SLFS). Gross hourly wages were used as reference, converted into 1993 CHF using the CPI deflator.

Bolzani and Abul Naga (2002) also based their study on the SLFS. As Küng Gugler and Blank, they consider full time working people, but contrarily to them, they did not restrict their analysis to the employees. The self-employed are this time also considered (Bolzani, 2002: 118). Another difference is that they do not work with hourly wages, but with annual wages (Bolzani, 2002: 126).

Dell, Piketty and Saez (2003) based their analysis on family income, using data from the federal income tax, published by the Swiss Fiscal Administration. Over the period 1933-96, the federal income tax was imposed "on the average of two consecutive annual incomes" (Dell, 2003: 476). Their estimates are "based on tabulation by size of income before deductions". It includes employment income, business income and capital income, but always excludes realized capital gains (Dell, 2003: 477).

Zürcher (2004: 268) based his paper on the Swiss Income and Wealth Survey for 1980-82, and on the Swiss National Poverty Study for 1990-92. Two income concepts are used: on the one hand, market income is obtained by summing labor earnings (before deduction of employee social security contributions), gross self-employment income and realized wealth income (excluding rents

of owner-occupied housing); on the other hand, disposable income is obtained by adding social security cash transfers, universal cash transfers and social assistance to the market income, and subtracting direct taxes and social security contributions. Like Ernst, Gerfin and Leu, Zürcher adjusted the household income using the square root of the household size as the equivalence scale. And all incomes are converted into 1980 CHF using the CPI deflator (Zürcher, 2004: 269).

Macculi (2009: 114) based her analysis "on the first eight waves of the Swiss Household Panel (SHP), covering the period 1999-2006". The income concept corresponds to "the yearly gross personal income from work, including wages, 13th and 14th month salary and gratifications and before social deductions".

5.3. Trends in income inequality

5.3.1. Trends between 1933 an 1996: stability

Dell, Piketty and Saez (2003) evaluated the evolution of inequality between the 30s and 90s. Their main results are that Switzerland, contrarily to other developed countries such as the United States and France, did not experience a decrease in top income shares during the 1930s and 1940s. In other words, based on top income shares, there is no evidence for a Kuznets-type decrease in income inequality in Switzerland during the twentieth century.

As can be seen in Figure 5.2 below, top 10% and top 5% income shares in Switzerland were very stable from 1933 to 1996. Over the 63-year period, the change remains in the range of 3 to 4%. Both top 10% and top 5% income shares for the years 1940 and 1970 are very similar. The 10% richest accumulated 32.94% of incomes in 1940 and 32.70% in 1970, while the 5% richest enjoyed 23.77% of incomes in 1940 and 23.32% in 1970. These figures are slightly lower for the period between 1976 and 1996 - around 30% for the top 10% income share and 20% for the 5% income share - suggesting a very slight reduction in income inequality during the last 25 years of the 20th century (see also table A3 in Appendix).

Figure 5.2: Top 10% and top 5% income shares in Switzerland, 1933-96 (Dell, 2003: 488)

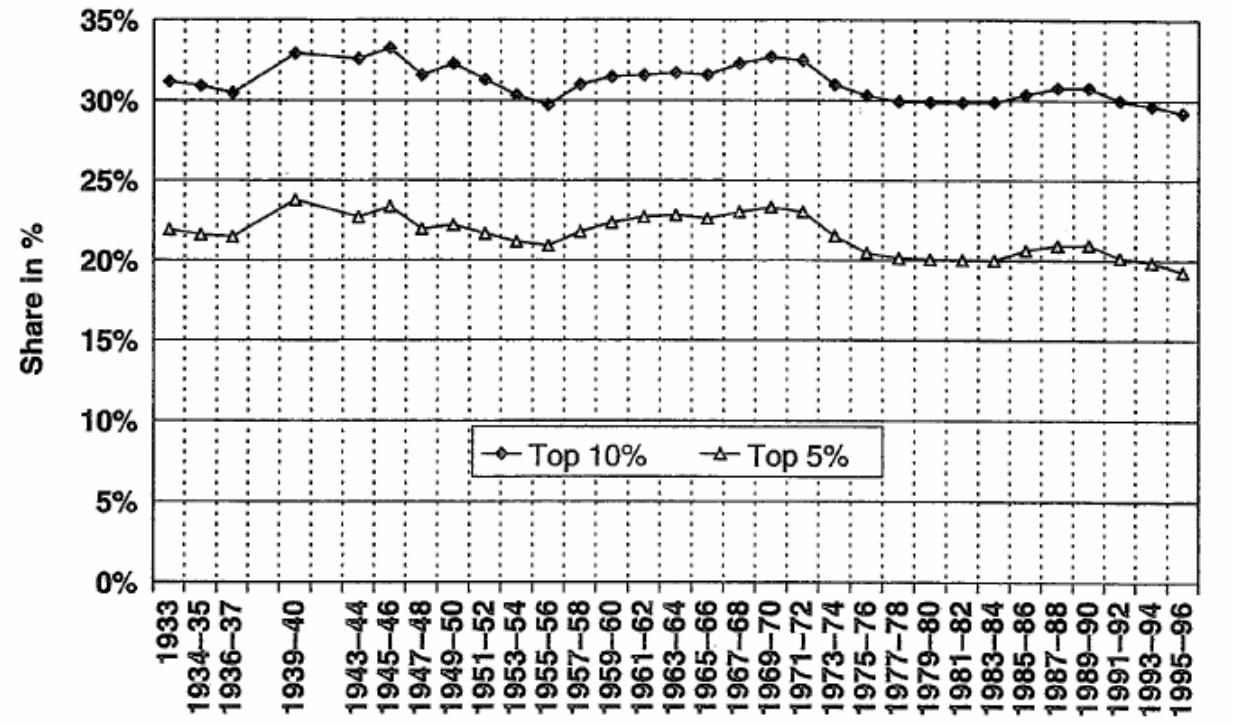


Figure 5.3 below displays the top 1% income share, as well as the next 4% (top 5-1%) and the second vintile (top 10-5%) between 1933 and 1996. Again, top 10-5% and top 5-1% are remarkably stable over the period. Larger fluctuations can be noted for the top 1% income share, with a peak of 11.78% in 1940, "just at the eve of the Second World War" (Dell, 2003 : 489), followed by a slight but steady decline until 1956, with 9.81%. After a further slight increase in the 1960s, the top 1% income share decreased again from 1971, increased slightly between 1982 and 1990, and finally marked a further decline during the last six years, reaching a minimum of 8.03% in 1996 (see also table A3 in Appendix).

This reinforces the impression of a very slight reduction in income inequality during the last 25 years of the 20th century. All in all, over the period, no general trend appears. It would be more accurate to speak of a succession of small episodes.

Figure 5.3: Top 1%, top 5-1% and top 10-5% income shares in Switzerland, 1933-96
(Dell, 2003: 489)

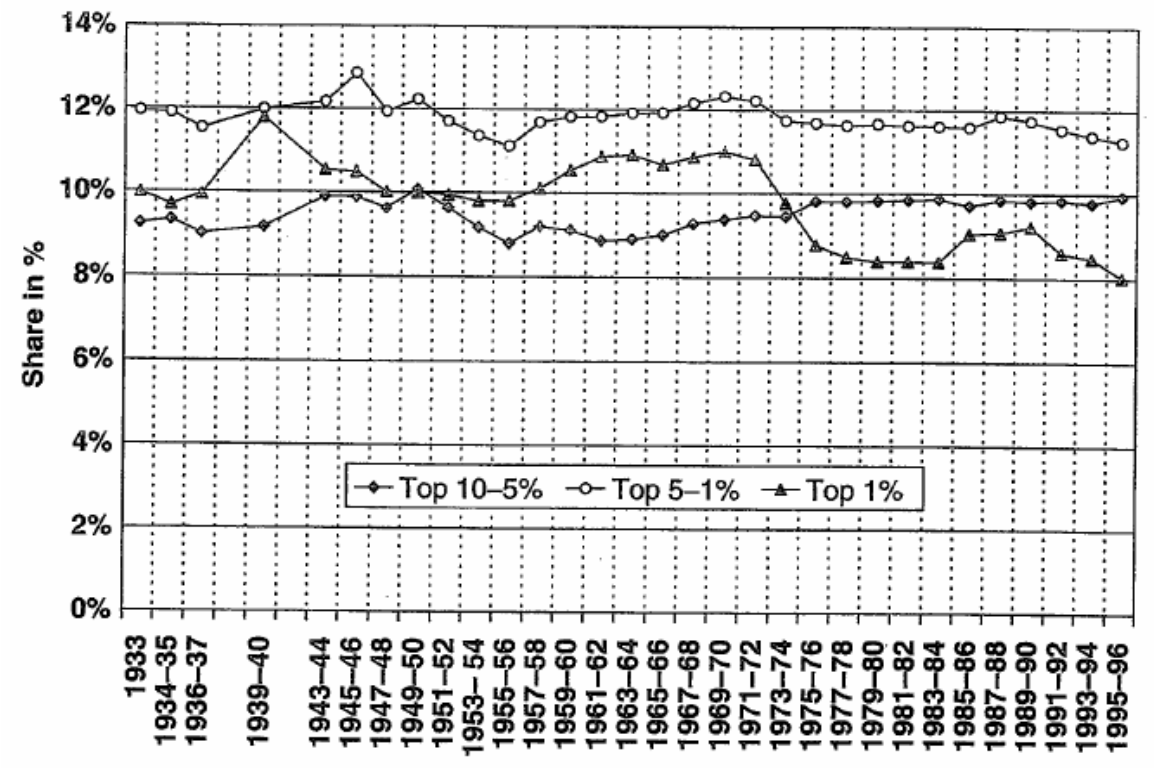
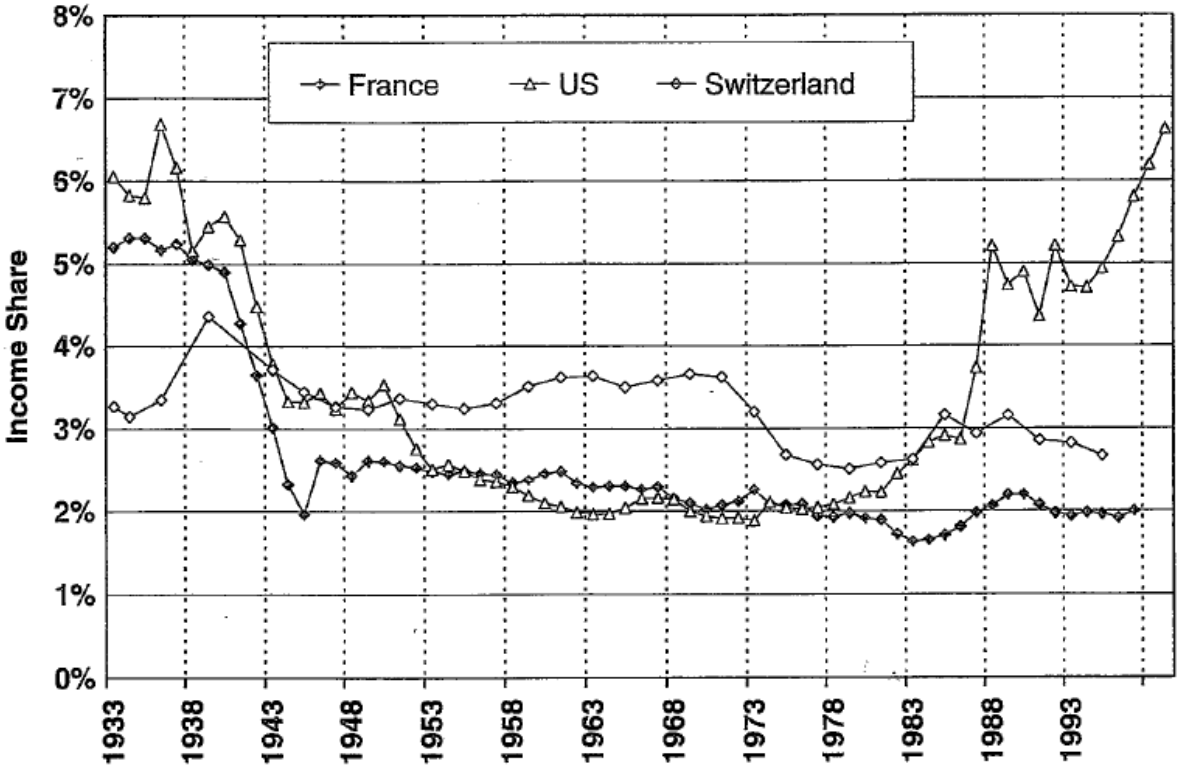


Figure 5.4 below displays the top 0.1% income shares for France, the U.S. and Switzerland. The series for Switzerland have the same sequence of episodes that the series of Swiss top 1% income share, with a spike in 1940 at 4.36% and a slight decline in the 1970s and the 1990s. But as opposed to what can be observed in the U.S. and French cases, Switzerland has not experienced a significant reduction in top 0.1% income share during the years 1930-1940. It results that the Swiss 0.1% top income share was less than that of the United States and France before the Second World War, but became higher in most of the postwar period. Furthermore, it can also be observed that the Swiss top 0.1% income share did not experience any remarkable increase during the 1980s ant 1990s, by opposition to the U.S. who, as already seen previously, experienced a dramatic increase.

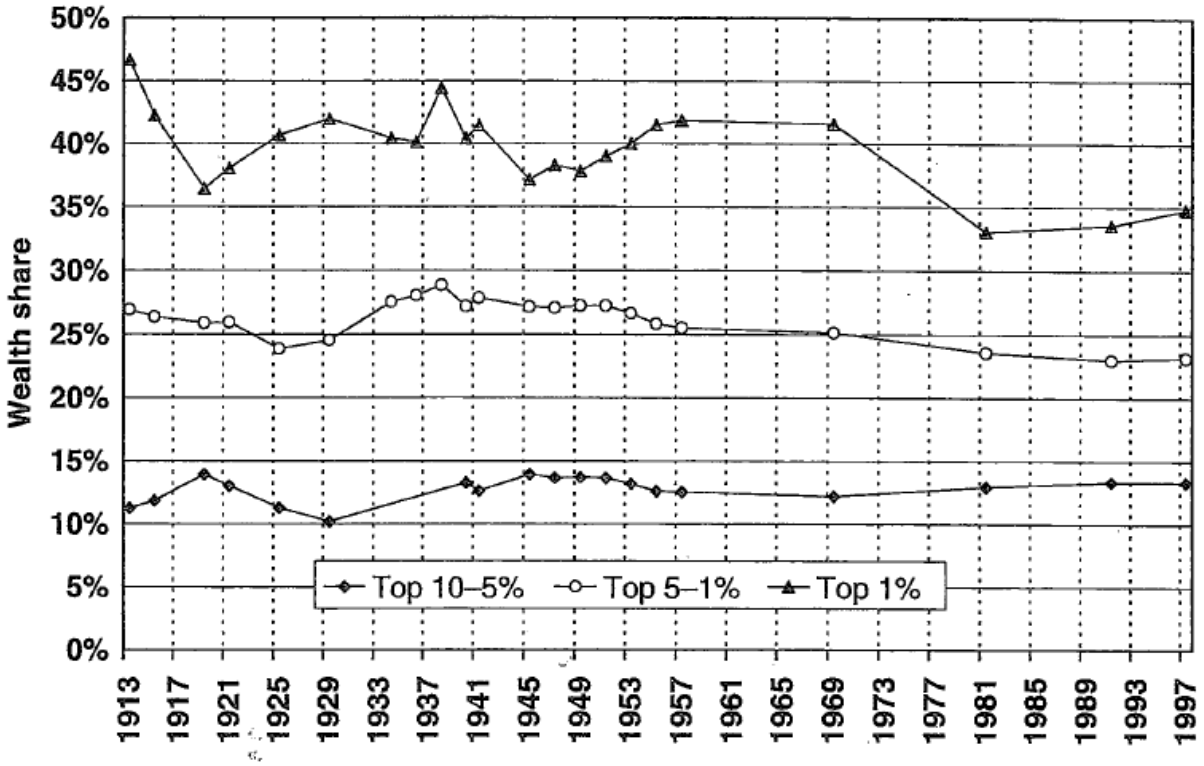
Figure 5.4: The top 0.1% income share in France, the U.S. and Switzerland, 1933-97
(Dell, 2003: 491)



Nevertheless, according to Dell, Piketty and Saez (2003: 491), the huge fall in very top income shares experienced before and during the Second World War by the United States and France, but also by other developed countries such as Germany and Great Britain, was "primarily a capital income phenomenon due to a drastic fall in top fortunes". As the Swiss income tax statistics do not decompose top incomes in their capital and labour components, a quick look to wealth statistics may be useful in order "to focus directly on the capital component of inequality". Figure 5.5 below displays different top wealth shares for almost the full twentieth century in Switzerland. Here again, the stability of these top shares is remarkable. This excludes any possibility for any capital income phenomenon leading to a fall in top fortunes in Switzerland. This again confirms that no Kuznets-type decrease in income inequality has been experienced in Switzerland.

Figure 5.5: Top 10-5%, top 5-1% and top 1% wealth shares in Switzerland, 1913-1997

(Dell, 2003: 492)



Obviously, all these results must always be taken cautiously, because they rest on a very specific measure of income inequality, based on very top incomes. No other studies give information for what happens in the other part of the income distribution over all this period. Nevertheless, some studies considering only the period from the 1980s found results somewhat different than Dell, Piketty and Saez. In 1997, Leu, Burri and Priester found an increase in inequality of disposable household income in Switzerland between 1982 and 1992, while Dell, Piketty and Saez did not find any significant change, or possibly a slight decrease in income inequality based on top income shares over this period. Burri found in 1998 that income inequality decreased over that period among the elderly population (aged 60 and more), implying an increase of income inequality in the younger population (Ernst, 2000: 290).

5.3.2. Trend between 1982 and 1992: increase

In 2000, Ernst, Gerfin and Leu also concluded in an increase in income inequality between 1982 and 1992. As shown in Table 5.1 below, the Gini coefficient increased from 26.89 % in 1982 to 28.25 % in 1992. This increase is also confirmed by three indices belonging to the Generalized Entropy (I_α, with $\alpha = 0, 1, 2$; the larger is α, the more sensitive is the GE index to variations in the upper part of the income distribution.)

Table 5.1: Overall inequality and stochastic dominance tests, disposable net income
(Ernst, 2000: 296)

Decile	Lorenz Ordinates [b]		Generalized Lorenz Ordinates [c]		Rank Dominance [c, d]	
	1982	1992	1982	1992	1982	1992
Bottom	3.6	**3.2**	1.37	1.36	13.7	13.6
2.	9.2	**8.7**	3.54	**3.69**	21.7	**23.3**
3.	15.9	**15.3**	6.12	**6.50**	25.8	**28.1**
4.	23.4	22.9	9.04	**9.72**	29.2	**32.1**
5.	31.9	31.3	12.31	**13.31**	32.7	**35.9**
6.	41.4	40.7	15.97	**17.28**	36.6	**39.8**
7.	52.0	51.1	20.06	**21.69**	40.9	**44.1**
8.	63.9	62.8	24.67	**26.68**	46.1	**49.8**
9.	77.8	76.7	30.01	**32.58**	53.4	**59.1**
Top	100.0	100.0	38.58	**42.48**	85.7	**99.0**
Inequality Indices [a]	1982	1992	% change			
Gini	268.9	282.5	5.1			
I_0	136.3	159.5	17.0			
I_1	65.7	73.6	12.0			
I_2	322.1	333.2	3.4			

Note: Own calculations using the Swiss Income and Wealth Survey (1982) and the Swiss Poverty Study Data (1992). All figures are computed using sampling weights. Income figures are in 1992 CHF. A significant difference at the 5 % level is denoted by bold print (in the 1992 columns). Standard errors are computed as proposed by Bishop et al. (1995). a) x 1000; b) x 100 c) in 1000 CHF; d) Columns contain mean income in decile.

It can be noticed that the increase in inequality is more pronounced with smaller α, which suggests that "the observed increase in income inequality predominantly occurred in the lower part of the income distribution (Ernst, 2000: 295). This idea is also supported by changes in Lorenz Ordinates, which are all smaller for 1992 than for 1982, but with a statistically significant difference only for the 3 lowest deciles. Generalized Lorenz Ordinates, which are obtained, to put it simply, by multiplying the Lorenz Ordinates by the mean income, are all larger in 1992 than in 1982, because of an increase of the mean income over the period, from around 38'580 CHF in 1982 to around 42'480 CHF in 1992. But if mean income in deciles are considered (rank dominance), a decrease is observed only for the first decile, while the other deciles experienced an increase. This again suggests that income inequality occurred mostly in the bottom part of the income distribution.

In 2004, Zürcher also observed an increase in income inequality between 1982 and 1992, for both market and disposable income. Table 5.2 below shows that the mean/median ratio and the Gini coefficient increased over the period. The mean/median ratio increased by 2.7% for the market income and by 2.1% for the disposable income. This suggests that income growth was biased towards higher incomes. When measured by the traditional Gini coefficient, the increase in income inequality amounts to 8.1% for market income and 6.9% for disposable income.

Table 5.2: Summary Measures for Real Equivalent Income (Zürcher, 2004: 276)

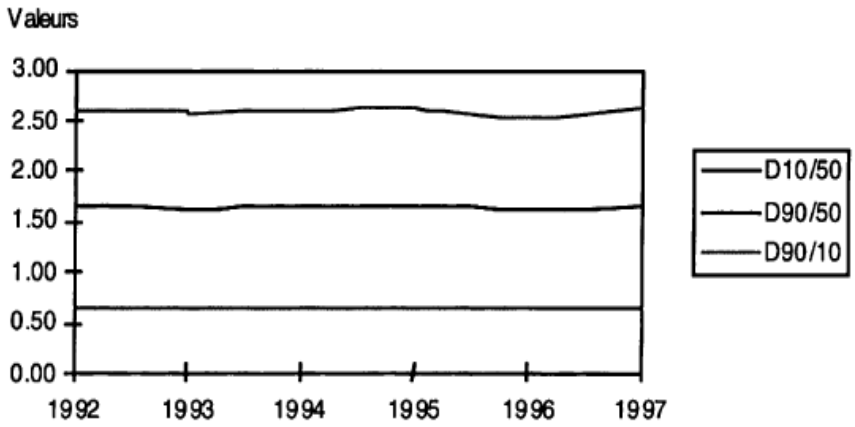
	Market Income			Disposable Income		
	1982	1992	Change [%]	1982	1992	Change [%]
# Observation	3923	3767		3923	3767	
Mean [CHF]	37'936	40'270	6.2	31'641	33'440	5.7
Median [CHF]	34'472	35'744	3.7	29'809	30'869	3.6
Mean/ Median	1.10	1.13	2.7	1.06	1.08	2.1
Gini	295	319	8.1	241	258	6.9

As can be seen in Table A4 in Appendix, the increase is even bigger if we used a GE-index (I_α). With a "*GE*-index more sensitive to variations of incomes at the lower end of the distribution" ($\alpha = -0.5$)" (Zürcher, 2004: 278), the increase amounts to 14.6% for market income and 14.4% for disposable income. The GE-index with $\alpha = 0$, also known as the mean logarithmic deviation (MLD), measures an inequality increase of 9.5% for market income and 12.4 for disposable income. Last, if inequality is measured by the GE-index with $\alpha = 1$, which corresponds to "Theil's first inequality index" (Zürcher, 2004: 271), the increase amounts to 12.9% for market income and 15.9% for disposable income. This reminds us that the choice of the inequality measure may lead to quite different results. Nevertheless, whatever the magnitude of the change, all measures agree on the fact that income inequality has increased between 1982 and 1992. Additionally, all inequality measures show that inequality is considerably smaller for disposable income than for market income.

5.3.3. Trend during the 1990s: slight increase or decrease?

In 2000, Küng Gugler and Blank analyzed the evolution of inequality between 1992 and 1997. Using the mean logarithmic deviation (MLD), they found no significant change in the global wage inequality. The MLD measured an increase of only 2.2% (Küng Gugler, 2000: 312). The two Lorenz Curves for 1992 and 1997 can hardly be distinguished (see Figure A4 in Appendix). The evolution of inter-decile ratios shows no significant change. Figure 5.6 below displays a linear horizontal line. Nevertheless, as will be seen in the next section, when total inequality is decomposed according to formation, age, gender and nationality, changes are heterogeneous among different population groups.

Figure 5.6: Evolution of interdecile ratios (1992-1997) (Küng Gugler, 2000: 313)



In 2002, Bolzani and Abul Naga also considered the period between 1992 and 1997 but found different results than Küng Gugler and Blank. In table 5.3 below, the inter-decile ratios for the whole population do not display stability like in Figure 5.6 above, but an increase in wage inequality, which could be consistent with the increase measured by the MLD in Küng Gugler's study. The inter-decile ratios for self-employed people decreased slightly, while those for employees either remained stable (as in Figure 5.6) or increased slightly. More surprisingly, the Gini index displays a decrease in wage inequality, from 0.31 in 1992 to 0.25 in 1997 for the whole population. When decomposed, the decreasing trend is also observed for self-employed people and, to a lesser extent, for employees. The apparent contradiction between some of the trends displayed by the Gini index and the inter-decile ratios are probably due to the different way the two indicators sum distributions. The first takes into account all data, while the other two consider two points on the wages' scale and are therefore more robust to changes in wages at the extremes of the distribution (Bolzani, 2002: 122).

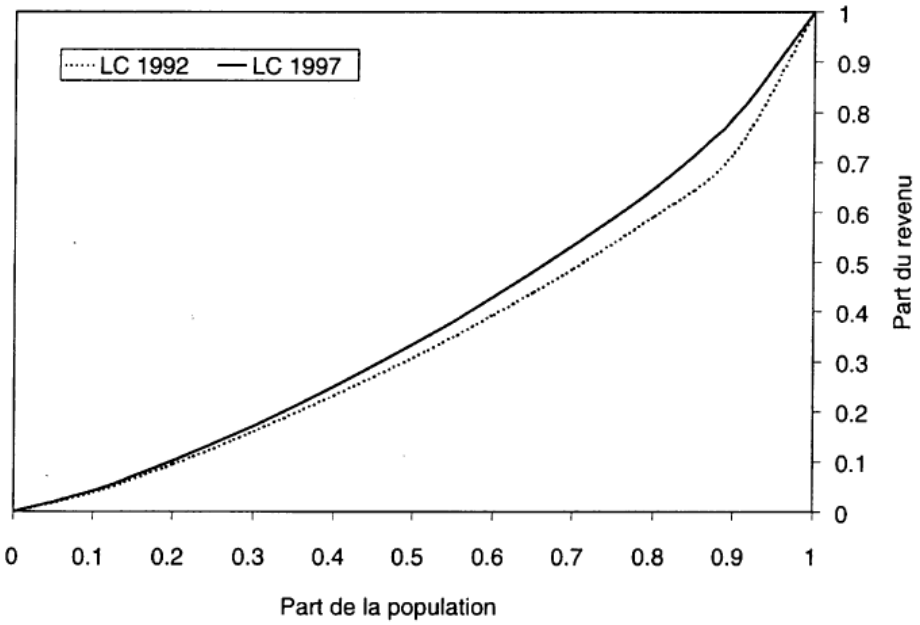
Table 5.3: Gini index, D90/10 and D75/25 for Switzerland, 1992 and 1997
(Bolzani, 2002: 121)

	Gini index		**D90/10**		**D75/25**	
	1992	1997	1992	1997	1992	1997
Population	0.31	0.25	2.76	2.84	1.62	1.67
Self-employed	0.49	0.34	5.2	4.46	2.23	2.17
Employees	0.27	0.22	2.63	2.63	1.59	1.63

NB: The statistics are weighted by survey weights.

Figure 5.7 below displays a statistically significant shift of the Lorenz curve upwards, suggesting a reduction of wages inequality between 1992 and 1997. The share of wages enjoyed by the first decile of the population raised from 3.9% in 1992 to 4.2% in 1997, while the top decile of the population experienced a decrease in its respective share from 28% in 1992 to 21% in 1997 (Bolzani, 2002: 124). The same equalizing shift is observed in the Lorenz curves for employees and self-employed people taken separately. The shift is more pronounced for self-employed (see Figures A5 and A6 in Appendix). Their wages' distribution was extremely unequal in 1992, the top decile enjoying 43.5% of the wages. This proportion declined dramatically and reached 27% in 1997 (Bolzani, 2002: 126). All these results are statistically significant.

Figure 5.7: Lorenz Curves for the whole population (Bolzani, 2002: 123)



Nevertheless, while the Lorenz curves indicate a decrease in wage inequality, the generalized Lorenz curves for 1997 is below the 1992 one (see Figure 5.8 below for the whole population). This is also true when self-employed people and employees are taken separately (see Figures A7 and A8 in Appendix). These results implies that the welfare level decreased from 1992 to 1997 (Bolzani, 2002: 127), due to a decrease in mean and median wages, as shown in Table 5.4 below. Median wages decreased from 2.8% for employees, and as much as around 7% for self-employed people (Bolzani, 2002: 120)

Figure 5.8: Generalized Lorenz Curves for the whole population (Bolzani, 2002: 127)

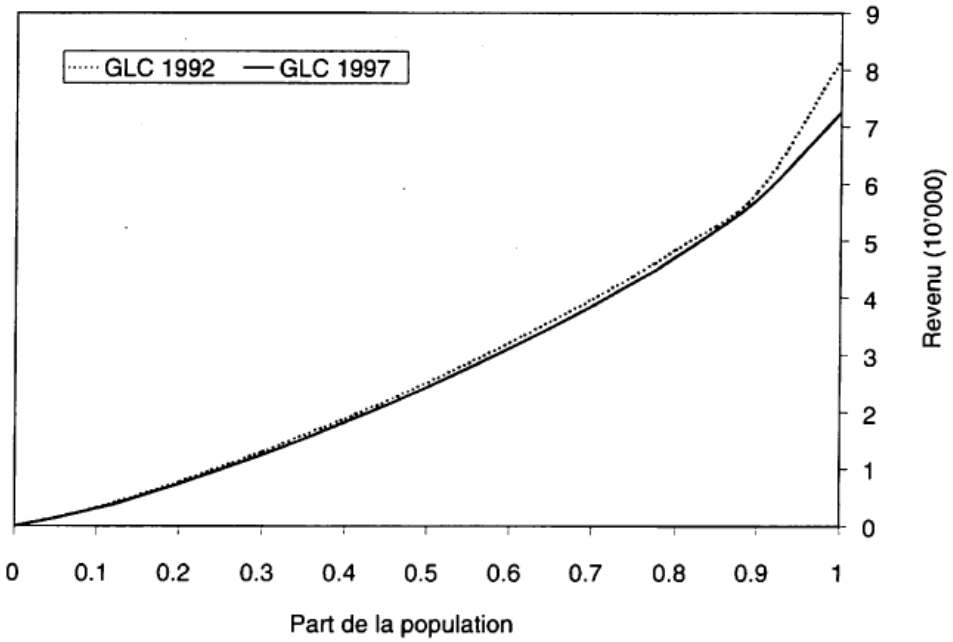


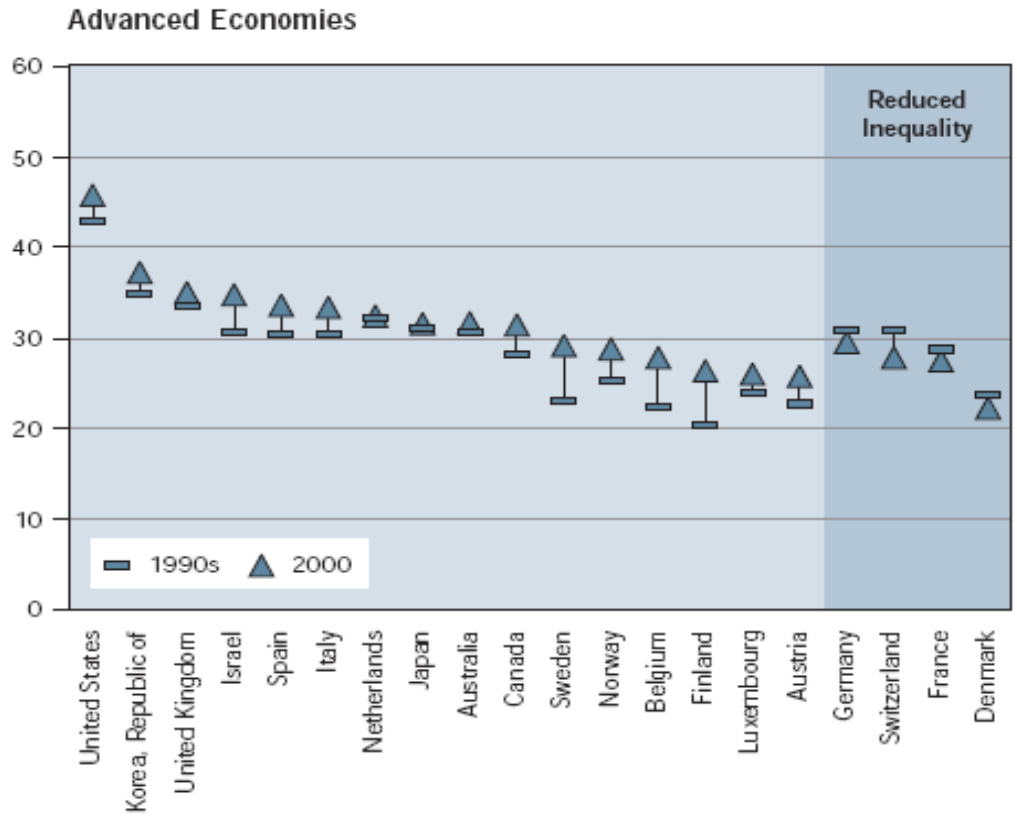
Table 5.4: Median and Mean Wages for Switzerland, 1992 and 1997 (Bolzani: 2002: 121)

	Median wage		Mean wage	
	1992	1997	1992	1997
Population	67'060	65'815	82'915	73'700
Self-employed	71'830	66'900	122'170	81'940
Employees	67'060	65'230	78'520	72'255

NB: All wages are measured in CHF 1997.

Bolzani and Abul Naga's results are consistent with the World of Work Report 2008, which found for the period between 1990 and 2000 that Switzerland is with Germany, France and Denmark one of the only four advanced economies considered which experienced a decrease in income inequality (see Figure 5.9 below). They used the Gini coefficient. However, this result has to be taken with caution, because it might be partly explained by the fact that Switzerland is a country with "short time-series data" (WWR 2008: 12). It is also quickly mentioned that income inequality before tax remained stable in Switzerland between the early 1980s and the late 1990s (WWR 2008: 136).

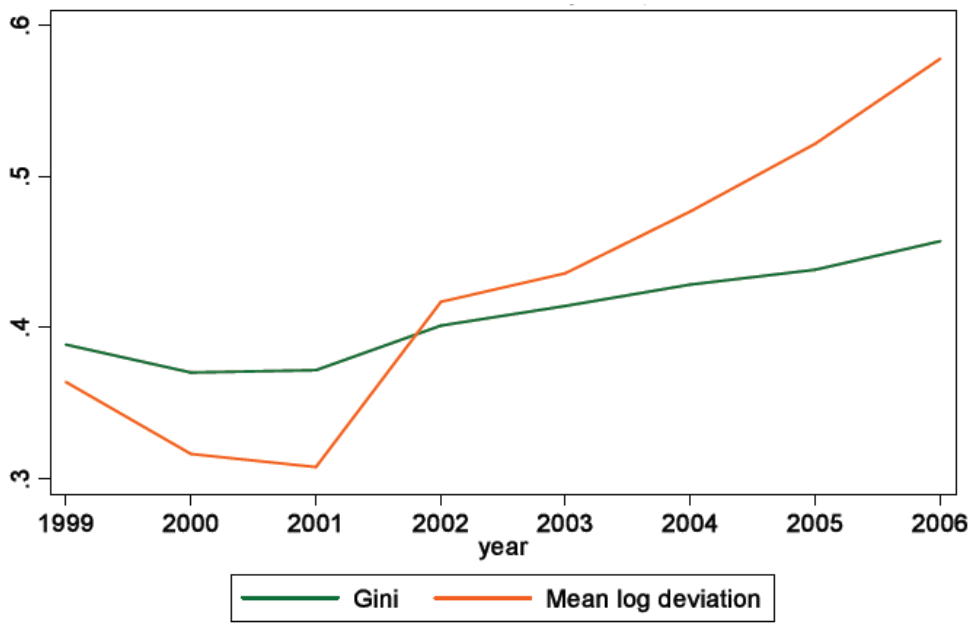
Figure 5.9: Gini Index by region for 1990 and 2000 (WWR 2008: 11)



5.3.4. Trend between 1999 and 2006: increase

One limitation of previous studies from Ernst (2002), Zürcher (2004), Küng Gugler (2000) and Bolzani (2002) is that they evaluate the evolution of income inequality by the use of only two dates – 1982 and 1992 for Ernst (2002) and Zürcher (2004), 1992 and 1997 for Küng Gugler (2000) and Bolzani (2002). This can be misleading, because this does not give information about what happened between these two dates. The following study from Macculi (2009) has therefore the advantage of considering every year between 1999 and 2006. Figure 5.10 below shows that inequality, as measured both by the Gini coefficient and the mean log deviation (GE $\alpha = 0$), increased over the period, particularly after 2001. This increase from 2001 is more pronounced when measured by the MLD, which is more sensitive of inequality in incomes at the bottom of the distribution than the Gini coefficient, which focuses more on the average incomes, more specifically modal incomes (Küng Gugler, 2000: 309).

Figure 5.10: Trends in inequality in Switzerland, 1999-2006 (Macculi, 2009: 127)



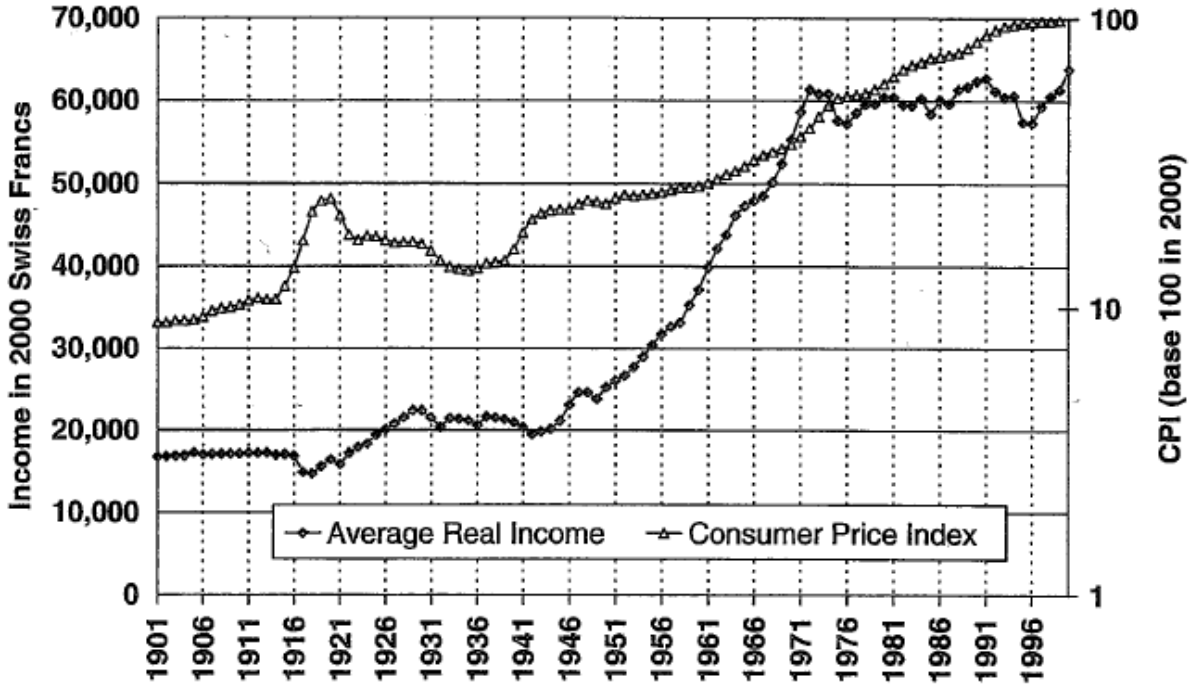
5.4. Explanations for these episodes in income inequality

5.4.1. No shocks of the two World Wars and no very progressive tax structure

The striking stability observed by Dell, Piketty and Saez during the 1930s and 1940s, which contrasts with what happened in many other advanced economies such as the United States, Great Britain, Canada, Germany or France, is explained by the fact that Switzerland "did not experience the shocks of the two World Wars and the Great Depression and never established a very progressive tax structure" (Dell, 2003: 474).

On the one hand, on the shocks of World Wars and the Great Depression, it is argued that "the business cycles and particularly the Great Depression have been mild in Switzerland" (Dell, 2003: 487). As shown by figure 5.11 below, price inflation was relatively moderate over the whole century, with only a short more sustained growth during the First World War. It is also briefly argued that the peak of 11.78% observed in the top 1% income share in 1940 may be due to "an influx of wealth immigrants flying from the Nazis" (Dell, 2003: 489)

Figure 5.11: Average real income and consumer price index in Switzerland, 1901-2000
(Dell, 2003: 488)



On the other hand, as far as the tax progressivity is considered, these scholars noticed for instance that "the top marginal income tax rate have been around 10% over most of the period", and that there is "no federal inheritance and estate taxes and most counties do not levy inheritance taxes between spouses and between parents and children" (Dell, 2003: 474). They conclude that Switzerland confirms "the explanation that progressive taxation is the main reason which prevented large fortunes from recovering to the pre-First World War level in other countries in the second part of the twentieth century" (Dell, 2003: 494).

5.4.2. Age, pensions and education

For the observed increase in income inequality between 1982 and 1992, as well as between 1999 and 2006, it has been argued that some structural changes in the population are responsible. The Swiss population is getting older on average. However, the decomposition by ages made by Ernst, Gerfin and Leu for the period between 1982 and 1992 shows that inequality decreased notably in the age group 65-80 (-8.6%), and even more in the age group above 80 (-19.9%). On the opposite, inequality increased dramatically for the age group 30-40 (+ 62%) (Ernst, 2000: 297 and Table A5 in Appendix). The improved situation for the pensioners may be linked to the institutional change that took place in 1985, when pension fund contribution became mandatory (Zürcher, 2004: 269). The World of Work Report (2008: 139) highlights the role of the pension benefits in Switzerland, which represent as much as 80 per cent or more of "the redistributive impact of social transfers".

Zürcher (2004: 269) noted that the distributional effect of the 1985 institutional change is difficult to determine. He nevertheless argued that "income inequality among the elderly tend to be more persistent than for the younger household heads. As shown by figures A9 and A10 in Appendix, an increase in inequality towards retirement age is observed, and it is "generally associated with a decreasing inequality reduction" (Zürcher, 2004: 286). This contrasts with the argument made by Dell, Piketty and Saez, who argued briefly that the slight reduction they observed in income concentration since the 1970s is probably due to "non-tax factors such as the aging of the population and the development of the pensions" (Dell, 2003: 475).

Explanations for the deteriorating situation of the young population may be found in the study of Küng Gugler and Blank (2004: 313). They also observed that the inequality increase was more pronounced for the young people (15-34 years old). This is linked to changes in education level. On the one hand, inequality as measured by the mean logarithmic deviation increased markedly for the less educated people (+ 18.7%). Unfortunately, no reasons are given for this. On the other hand, more young people reached tertiary education level, where income concentration is more heterogeneous than for lower education level, probably due to more diversified carrier opportunities for university graduates (Küng Gugler, 2004: 314). It is additionally observed that the society of knowledge and know-how reward those who invest in formation (Küng Gugler, 2004: 313), but it is not said if the education premium is stable, increasing or decreasing.

For the period between 1999 and 2006, Macculi also observed higher increase in income inequality for the young people (see Figure 5.12 below). She noticed that "inequality has more than doubled among the young and less educated people" (Macculi, 2009: 115). Furthermore, she argued that this is linked to a "problem of selection in the access to the labour market" and to "the rising role of human capital premiums to education" (Macculi, 2009: 115-6, and Figure 5.13 below). But no reasons are given for theses facts.

Figure 5.12: Inequality (meanlog) decomposition by age (Macculi, 2009: 125)

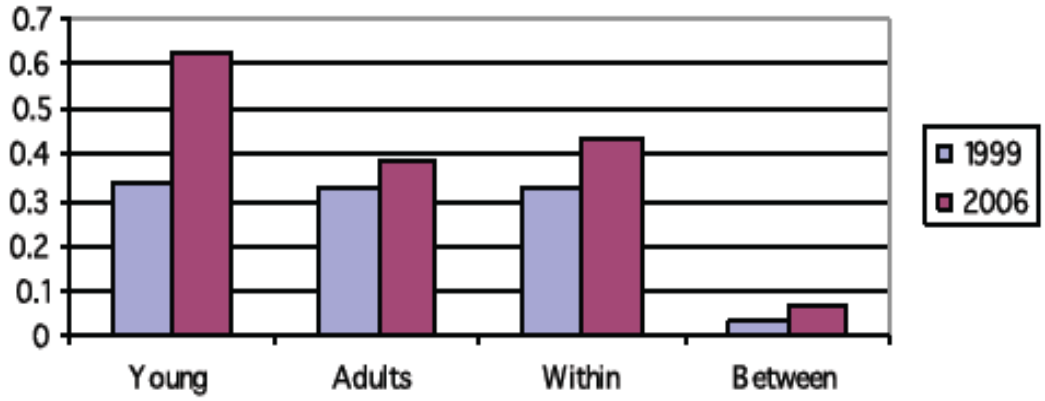
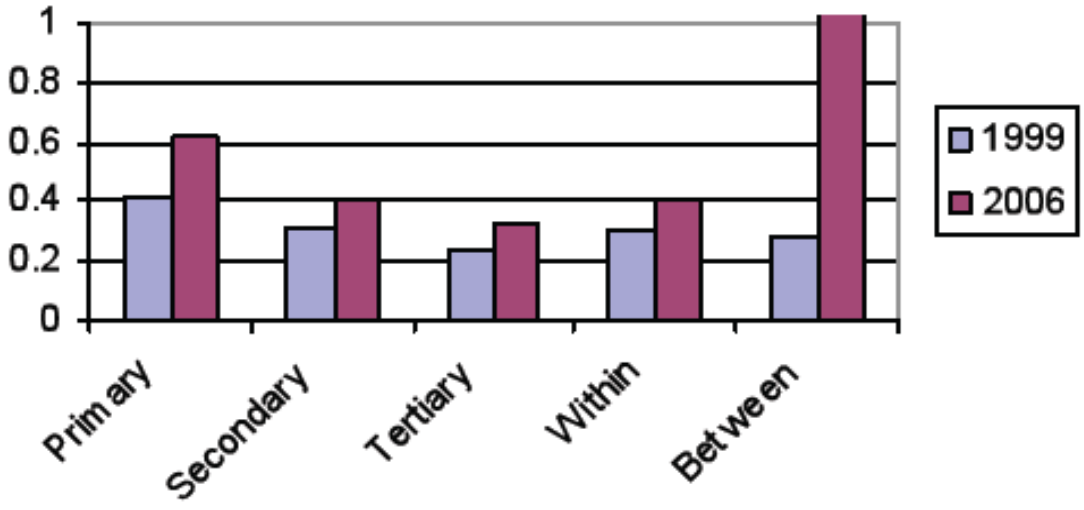


Figure 5.13: Inequality (meanlog) decomposition by education (Macculi, 2009: 125)



5.4.3. Immigration

As already mentioned in the introduction of this chapter, Switzerland is a country of strong immigration. Non-natives make up more than 20 per cent of the total population, and "almost one third of the total labour force". Immigration policy tried recently to "attract more highly skilled immigrants" and to "limit the arrival of unskilled workers". However, unskilled workers continue to arrive and recently arrived immigrants are "highly heterogeneous with respect to skills" (Macculi, 2009: 105).

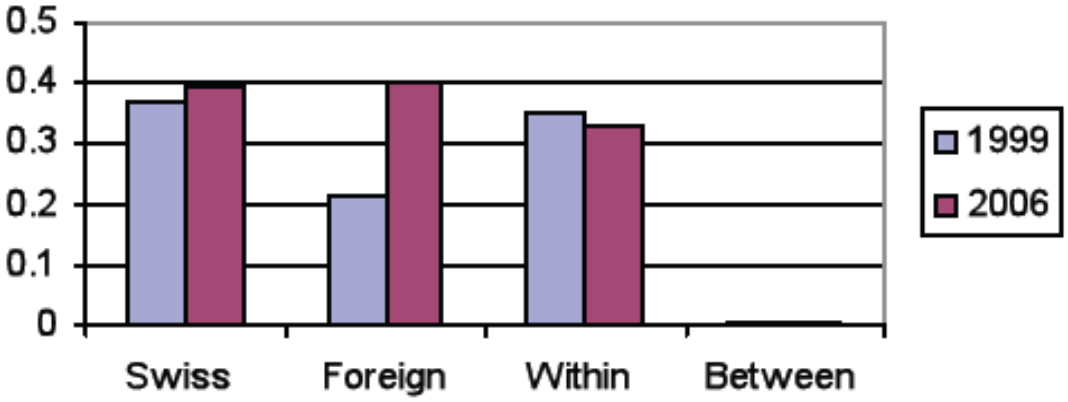
Ernst (2000: 297) observed that the proportion of foreigners increased between 1982 and 1992, from 12.58% to 20.8%. Moreover, their income inequality as measured with the mean logarithmic deviation (GE with $\alpha = 0$) grew from 62%, compared to an inequality growth of 'only' 15% among the Swiss native (see Table A5 in Appendix). Unfortunately, no reasons are given in order to explain why income inequality among foreigners increased so much.

Küng Gugler observed that income inequality among foreigners, always measured with the mean log deviation, decreased slightly between 1992 and 1997 (Küng Gugler, 2000: 313). Nevertheless, she also observed that the proportion of foreigners decreased both among low educated people (with only primary education level) and highly educated people (with tertiary education level). Low educated foreigners have a more homogeneous income distribution than low educated natives, because they are concentrated in low paid sectors (Küng Gugler, 2000: 314). On

the other side, highly educated foreigners have a more heterogeneous income distribution than highly educated natives, because some of them are very well paid specialists while others are academics who do not have the opportunity to practice in their domain and can only have lower-paid occupations (Küng Gugler, 2000: 315). The global impact of foreigners on income inequality remains therefore unclear.

Macculi observed that income inequality increased more among foreigners than among natives between 1999 and 2006 (see figure 5.14 below). According to her, the bilateral agreements signed with EU/UFTA countries on the free mobility of people and implemented in 2002 may "have pushed up wages along with inequality" (Macculi, 2009: 115). This remains nevertheless more like a hypothesis, without a more detailed analysis to confirm it.

Figure 5.14: Inequality (meanlog) decomposition by origins (Macculi, 2009: 125)

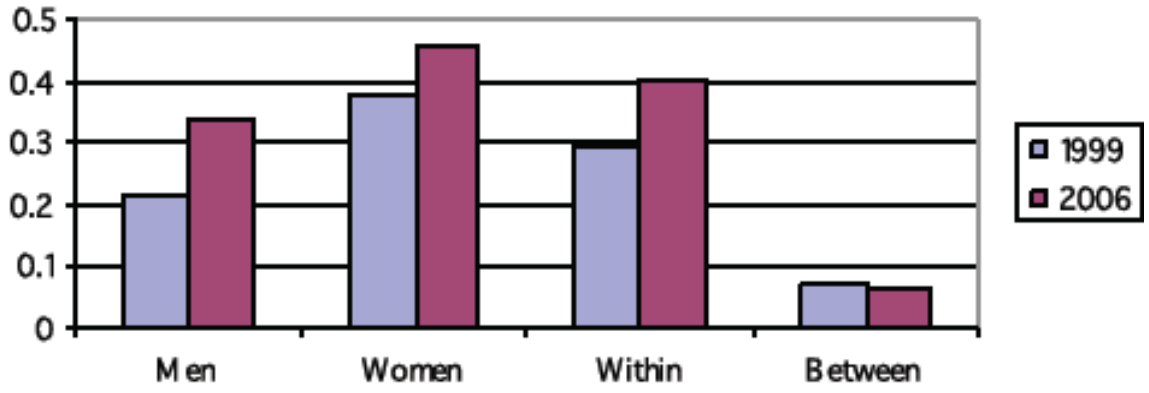


5.4.4. Gender

Küng Gugler and Macculi briefly analyzed the impact of gender on inequality. Between 1992 and 1997, the proportion of women increased in the group of the less educated people. In this group, the income distribution is more heterogeneous for women than for men, because women are not only working in moderately well-paid jobs like men, but are also very active in sectors traditionally very poorly paid (Küng Gugler, 2000: 314). Additionally, income inequality among women increased by the fact that women had now more opportunity to work in well-paid jobs with high responsibility, the kind of jobs for which they had little or no access before (Küng Gugler, 2000: 315).

Between 1999 and 2006, women had systematically higher income inequality than men. Nevertheless, as shown by Figure 5.15 below, inequality among women increased slightly less than inequality among men over the period. Inequality in terms of participation to the labour market, as well as gender segregation and discrimination are part of the explanation (Macculi, 2009: 115). Macculi noticed in the beginning of her study that women work "mainly part-time while men occupy full-time positions, which resulted in increased earnings inequalities between men and women" (Macculi, 2009: 9). Nevertheless, this assertion seems not to be consistent with the decreasing gap in earnings inequality between men and women over the period 1999-2006 observed in Figure 5.15 below. This could suggest that the difference in working time between men and women is decreasing, but no further evidences on this issue are given in this study.

Figure 5.15: Inequality (meanlog) decomposition by gender (Macculi, 2009: 125)



5.4.5. Impact of recessions

Bolzani and Abul-Naga made a link between the recession experienced in Switzerland during the 1990s and the decrease in income inequality they observed between 1992 and 1997. Both the mean wage and the wage inequality for the employees decreased due partly to the fact that the best paid employees suffer from a significant fall of their wages (Bolzani, 2002: 130). Furthermore, the unemployment increase went hand in hand with an increased proportion of self-employed people. People hit by the recession, especially the highly-qualified who, during a recession, are less likely to return and work in the highly-paid sector, tried to improve their economic situation through self-employment. This contributes to a decrease in the wage differential between high-paid and low-paid people (Bolzani, 2002: 132).

Finally, Macculi (2009: 116) briefly observed that the inequality increase experienced in Switzerland after 2001 took place in a period of rising unemployment. Unfortunately, no more evidences are given in order to see if the economic recession of 2001 had an impact on income inequality in Switzerland.

5.4.6. Impact of different income components

Another explanation has also been briefly given. Ernst, Gerfin and Leu (2000: 302) made a decomposition of inequality according to different income components such as labour earnings, wealth income and transfers. They observed that "labour earnings and wealth income have the largest disequalizing effect", while "self-employment income and taxes have an equalizing effect". There is nevertheless a lack of explanation for these observations. They noticed that the equalizing effect of self-employment is hard to explain. As for labour earnings, they simply noticed that large increases in labour income's inequality were experienced in many countries in the 1980s. Unfortunately, no additional explanations for this pattern are given.

5.5. Concluding remarks

Chapter 5 presented the evolution of income inequality in Switzerland. First, it has been argued that Switzerland did not experience any important decrease in income inequality during the 1930s-1940s, contrarily to both Kuznets' hypothesis and empirical evidences for most other advanced economies. Second, it has been shown that Switzerland has experienced some increase in income inequality during the 1980s and between 1999 and 2000, while a possible decrease may have taken place in the 1990s. Third, different explanations were presented for the episodes in income inequality. Switzerland did not experience the shocks of the World Wars and the Great Depression as strongly as its neighbors, and never implemented highly progressive taxation. More recent episodes have been mostly explained by different structural changes relative to the population such as age, education, immigration, gender. Impacts of recessions and of changes in different income components have also been considered. Nevertheless, as far as I know, there is no attempt in the Swiss case to see if changes in income inequality are due to skill-biased technological change, globalization, changes in labour institutions or taxation. Finally, it can be mentioned that the World of Work Report (2008: 81) noticed for instance a change in the structure of collective bargaining between 1989 and 2005, with, for Switzerland and 11 other countries, a "trend

downwards more decentralized or uncoordinated bargaining". This suggests that institutional factors may have played some role in the inequality evolution. There is however still more to be done.

6. CONCLUSIONS

Inequality is a theme which gives rise to many debates and controversies. We first mentioned in the introduction that economic inequality is a broader issue than merely income inequality. Other spaces should be taken into account, such as the distribution of education, health or employment. Additionally, we presented the debate on the fair level of inequality which can be acceptable for a given society. For some reasons inequality can be seen as bad – for instance, inequality leads to crime, riots, corruption or higher wealth problems – while for other reasons inequality can be seen as good – for instance, some people deserve or need more income, and inequality give incentives to work harder or to invest in human capital.

Second, through this paper it as been shown that it is rather complicate to assess income inequality and its evolution over time. Many problems may arise. There is the problem regarding the quality and the availability of data. Data may come from different sources, such as official tax statistics or income survey. None of these sources is perfectly reliable. An additional problem arises as to the type of income that must be considered. The results may differ if one considers factor or disposable incomes. Different results will also be observed if one takes into account only labour income or also capital income, only employees' income or also self-employed people's income. Furthermore, the choice of the inequality measure is important why different measures may lead to different results. Some measures give more importance to what happens at the top or the bottom of the distribution, while others focused more on mean or median income. There is place for arbitrary.

Third, it has been observed that the hypothetical Kuznets curve gave rise to debates and controversies. Kuznets' caution regarding his hypothesis was not respected by his followers. They tend to adopt a deterministic view. However, nowadays Kuznets hypothesis is no more seen as a strong economic law as some 40 or 50 years ago. Some scholars argued that the inversed U-shape curve that has been observed in some countries was not the result of an unavoidable economic process, but rather the result of some accidental shocks such as the Great Depression and the two World Wars. Most scholars do not believe any more in a systematic relationship between economic growth and income inequality. Politics and ideology seem to have also played an important role, with changes in taxation and social policies. It has also been argued that there is no real trend in income inequality, and that we should better talk about episodes (Atkinson, 1998: 15-16).

Fourth, it has been shown that the existence of the Kuznets curve was challenged by a renewed increase in income inequality in many developed countries – in particular in the United States from the late 1970s, in Finland during the 1990s and in Switzerland during the 1980s and between 1999 and 2006. However, different explanations given by Kuznets and other scholars for the hypothetical existence of the Kuznets curve may be adapted in order to explain these new inequality episodes. Different alternative explanations were presented, some based on market mechanisms, others on non-market mechanisms.

Similarly to the industrialization process advanced by Kuznets in order to explain his hypothesis, many scholars explained the new increase in income inequality by a shift from manufactures to services, or, in the Finnish case, by the transformation of Finland towards a knowledge-based economy. Others argued for a new shift of demand towards skilled workers, caused either by technological change or globalization and immigration. These two first views may let think that this new increase in income inequality could be the first part of a new Kuznets' curve.

Other scholars adopt the institutional perspective. They make a link between the increase in inequality and institutional changes, such as a fall in the minimum wage or in the union strength. Responsibilities are also given to changes in social policy toward less redistributive transfers and less progressive taxation. In the Finnish case, it was argued that the introduction of the dual income tax played a significant role in the increasing inequality, while in the Swiss case, the absence of strong progressive taxation may explained the absence of a decrease in top income shares in the first half of the twentieth century.

The impact of recessions on income inequality is still controversial. If in the Finnish case, the recession of the 1990s with growing unemployment is proposed as an explanation for the increase in inequality, in the Swiss case, recessions are suggested as an explanation for both the decrease in inequality between 1992 and 1997 and the increase in inequality between 1999 and 2006.

More recently, scholars place more emphasis on changes in social norms, and the rise of the neo-liberal paradigm, with the "paid what you are worth" theory and the death of the "outrage constraint". This idea is also advanced in the Finnish case to explain change towards less redistributive policies.

In the Swiss case, structural changes such as aging population, higher education level and higher women participation in labour market, are additional explanations for the evolution of income inequality.

All in all, no consensus emerges from all these explanations and controversies. It remains difficult if not impossible to assess the relative importance of these different explanations. There is still much work to be undertaken on these issues, at least as long as one consider that income inequality deserve interest. Once again, these debates and this huge variety in alternative explanations suggest that economists, like other social scientists, always should remain cautious on such controversial topics.

Finally, two last remarks can be maid on the Finnish and the Swiss cases. In the Finnish case, we can regret that, as far as I know, there is no study which tries to measure the impact of Finland entrance in the UE in 1995 on social policies and income inequality. It is possible that some change in social policies had to be implemented some years before, with potential consequences on the income redistribution. In the Swiss case, we can mostly regret the lack of alternative explanations for the observed changes in income inequality. It could be interesting to see how Swiss income inequality is affected by trade and technology, taxation and social policy changes, as well as direct democracy. Furthermore, we can regret that some Swiss studies are based only on wages. They neglect capital income such as dividends, which, as seen in the Finnish case, may play a very important role in income inequality.

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APPENDIX

Table A1: Top Marginal Rates in the US, 1913-2010
(http://www.taxpolicycenter.org/taxfacts/displayafact.cfm?Docid=213)

Historical Highest Marginal Income Tax Rates

Year	Top Marginal Rate	Year	Top Marginal Rate	Year	Top Marginal Rate
1913	7.0%	1946	86.45%	1979	70.00%
1914	7.0%	1947	86.45%	1980	70.00%
1915	7.0%	1948	82.13%	1981	69.13%
1916	15.0%	1949	82.13%	1982	50.00%
1917	67.0%	1950	91.00%	1983	50.00%
1918	77.0%	1951	91.00%	1984	50.00%
1919	73.0%	1952	92.00%	1985	50.00%
1920	73.0%	1953	92.00%	1986	50.00%
1921	73.0%	1954	91.00%	1987	38.50%
1922	56.0%	1955	91.00%	1988	28.00%
1923	56.0%	1956	91.00%	1989	28.00%
1924	46.0%	1957	91.00%	1990	31.00%
1925	25.0%	1958	91.00%	1991	31.00%
1926	25.0%	1959	91.00%	1992	31.00%
1927	25.0%	1960	91.00%	1993	39.60%
1928	25.0%	1961	91.00%	1994	39.60%
1929	24.0%	1962	91.00%	1995	39.60%
1930	25.0%	1963	91.00%	1996	39.60%
1931	25.0%	1964	77.00%	1997	39.60%
1932	63.0%	1965	70.00%	1998	39.60%
1933	63.0%	1966	70.00%	1999	39.60%
1934	63.0%	1967	70.00%	2000	39.60%
1935	63.0%	1968	75.25%	2001	38.60%
1936	79.0%	1969	77.00%	2002	38.60%
1937	79.0%	1970	71.75%	2003	35.00%
1938	79.0%	1971	70.00%	2004	35.00%
1939	79.0%	1972	70.00%	2005	35.00%
1940	81.10%	1973	70.00%	2006	35.00%
1941	81.00%	1974	70.00%	2007	35.00%
1942	88.00%	1975	70.00%	2008	35.00%
1943	88.00%	1976	70.00%	2009	35.00%
1944	94.00%	1977	70.00%	2010	35.00%
1945	94.00%	1978	70.00%		

Note: This table contains a number of simplifications and ignores a number of factors, such as a maximum tax on earned income of 50 percent when the top rate was 70 percent and the current increase in rates due to income-related reductions in value of itemized deductions. Perhaps most importantly, it ignores the large increase in percentage of returns that were subject to this top rate.

Sources: Eugene Steuerle, The Urban Institute; Joseph Pechman, Federal Tax Policy; Joint Committee on Taxation, Summary of Conference Agreement on the Jobs and Growth Tax Relief Reconciliation Act of 2003, JCX-54-03, May 22, 2003; IRS Revised Tax Rate Schedules

Table A2: Income Inequality in Finland, 1990, 1993 and 1999 (Riihela, 2001b: 9)

Income Inequality in Finland 1990, 1993 and 1999

Inequality measure	Group	Year 1990			Year 1993			Year 1999		
		FI	GI	DI	FI	GI	DI	FI	GI	DI
Generalised	1	14.0	9.3	6.2	17.1	10.1	6.9	20.0	13.8	10.6
Entropy class		(0.29)	(0.20)	(0.13)	(0.45)	(0.30)	(0.24)	(1.00)	(0.86)	(0.75)
of measures	2	56.7	10.6	7.1	55.1	11.3	7.7	82.9	15.9	11.7
($c = 0$)		(2.24)	(0.43)	(0.31)	(2.66)	(0.58)	(0.47)	(6.93)	(1.55)	(1.28)
	Total	37.3	10.9	7.0	44.0	11.4	7.5	52.6	16.1	11.6
		(0.71)	(0.19)	(0.12)	(0.99)	(0.28)	(0.22)	(1.62)	(0.77)	(0.66)
($c = 1$)	1	13.5	9.8	6.4	16.8	10.8	7.5	23.8	18.2	14.3
		(0.32)	(0.27)	(0.15)	(0.70)	(0.55)	(0.45)	(2.44)	(2.13)	(1.95)
	2	45.3	11.4	7.5	45.7	12.4	8.3	93.6	21.5	15.8
		(2.14)	(0.54)	(0.37)	(3.38)	(0.94)	(0.77)	(16.2)	(3.73)	(3.02)
	Total	24.7	11.2	7.1	31.2	12.2	8.1	40.5	20.5	15.4
		(0.42)	(0.25)	(0.14)	(0.77)	(0.48)	(0.39)	(2.51)	(1.87)	(1.66)
($c = 2$)	1	16.1	12.1	7.2	22.9	15.3	10.4	62.2	48.6	39.3
		(0.72)	(0.62)	(0.24)	(3.46)	(2.49)	(1.77)	(22.0)	(17.3)	(16.0)
	2	72.7	14.3	8.9	83.4	17.4	11.2	573.2	57.8	40.1
		(8.09)	(0.96)	(0.64)	(15.5)	(2.53)	(1.89)	(206.3)	(21.0	(15.0)
	Total	26.2	13.7	8.0	38.5	16.9	11.0	92.9	53.0	40.7
		(0.86)	(0.58)	(0.23)	(4.08)	(2.10)	(1.43)	(25.8)	(15.5)	(13.4)
Variance of	1	29.9	18.0	12.5	36.7	19.5	13.3	37.2	22.7	17.1
logarithms		(0.76)	(0.38)	(0.31)	(1.08)	(0.71)	(0.65)	(1.26)	(0.71)	(0.49)
	2	174.2	20.1	14.1	164.3	21.1	14.7	221.8	26.1	19.3
		(8.87)	(0.77)	(0.67)	(11.2)	(0.87)	(0.73)	(11.8)	(1.35)	(1.12)
	Total	125.5	21.4	14.0	138.6	22.2	14.6	172.0	27.7	19.4
		(3.91)	(0.38)	(0.28)	(4.66)	(0.59)	(0.43)	(8.42)	(0.69)	(0.63)
Atkinson	1	6.6	4.6	3.1	8.0	5.0	3.5	10.0	7.4	5.8
index		(0.62)	(0.63)	(0.63)	(0.81)	(0.83)	(0.84)	(1.11)	(1.10)	(1.09)
($e = 0.5$)	2	21.3	5.3	3.6	21.0	5.7	3.9	33.0	8.6	6.4
		(1.03)	(0.82)	(0.82)	(1.38)	(1.12)	(1.12)	(3.46)	(1.64)	(1.56)
	Total	13.4	5.3	3.4	16.3	5.7	3.8	19.3	8.4	6.3
		(0.56)	(0.54)	(0.54)	(0.66)	(0.67)	(0.67)	(0.94)	(0.91)	(0.89)
($e = 1.0$)	1	13.1	8.9	6.1	15.7	9.6	6.6	18.0	12.9	10.0
		(5.78)	(6.16)	(6.17)	(7.30)	(8.03)	(8.06)	(8.62)	(9.33)	(9.35)
	2	43.3	10.1	6.9	42.4	10.7	7.4	56.4	14.7	11.0
		(4.33)	(7.44)	(7.60)	(5.89)	(10.1)	(10.3)	(5.95)	(11.9)	(12.0)
	Total	31.1	10.3	6.7	35.6	10.8	7.2	40.9	14.9	11.0
		(3.92)	(5.09)	(5.15)	(4.39)	(6.29)	(6.38)	(4.95)	(7.33)	(7.46)
(e= 2.0)	1	27.3	16.7	12.1	37.2	21.0	15.1	34.1	21.8	17.0
		(1.20)	(1.09)	(1.16)	(3.67)	(3.22)	(2.85)	(1.98)	(1.74)	(1.79)
	2	93.4	18.9	13.8	90.4	19.9	14.3	95.3	25.2	19.5
		(1.13)	(1.55)	(1.58)	(1.80)	(1.87)	(1.97)	(0.89)	(2.51)	(2.56)
	Total	92.8	19.7	13.5	90.4	22.1	15.5	95.1	25.9	19.1
		(1.16)	(0.89)	(0.96)	(1.64)	(2.08)	(1.95)	(0.83)	(1.41)	(1.46)
Gini	1	28.2	23.7	19.4	31.2	24.5	20.0	33.6	28.3	24.4
coefficient		(0.32)	(0.29)	(0.22)	(0.48)	(0.44)	(0.39)	(0.85)	(0.79)	(0.73)
	2	55.5	25.4	20.5	55.5	25.7	20.8	65.7	30.3	25.5
		(0.90)	(0.50)	(0.43)	(1.11)	(0.67)	(0.59)	(2.80)	(1.30)	(1.17)
	Total	39.0	25.6	20.4	44.8	26.1	20.9	47.7	30.6	25.7
		(0.35)	(0.26)	(0.20)	(0.45)	(0.36)	(0.32)	(0.79)	(0.67)	(0.62)

Household income is adjusted by OECD equivalence scale. FI = Factor income, GI = Gross income, DI = Disposable income. Asymptotic standard errors in the parentheses.

Table A3 : Top Income Shares in Swizterland, 1933-95/96 (Dell, 2003: 484-5)

	Aggregate series					Top groups shares					
(0)	Consumer price index (1)	Number of tax units ('000s) (2)	Total real income (millions Fr.) (3)	Real income per tax unit (2000 Fr.) (4)	% Tax units covered in statistics (5)	10% (6)	5% (7)	1% (8)	0.5% (9)	0.10% (10)	0.01% (11)
1933	13.787	1,986	42,638	21,475	13.7	31.16	21.92	9.98	7.19	3.27	0.94
1934–35	13.573	2,008	42,515	21,169	13.2	30.92	21.59	9.69	6.94	3.14	0.91
1936–37	13.662	2,039	43,984	21,573	13.3	30.47	21.46	9.94	7.21	3.35	0.98
1939–40	14.519	2,085	46,212	22,169	32.5	32.94	23.77	11.78	8.78	4.36	1.52
1943–44	21.216	2,150	43,494	20,227	53.0	32.59	22.70	10.54	7.67	3.71	1.43
1945–46	21.796	2,185	48,404	22,157	62.6	33.24	23.36	10.49	7.50	3.44	1.10
1947–48	22.752	2,219	55,507	25,015	54.2	31.58	21.95	10.01	7.15	3.26	1.03
1949–50	23.199	2,253	54,808	24,324	42.7	32.29	22.22	9.99	7.13	3.23	0.96
1951–52	23.887	2,299	61,448	26,726	47.5	31.29	21.65	9.94	7.18	3.37	1.07
1953–54	24.310	2,349	66,984	28,515	48.8	30.33	21.16	9.80	7.08	3.30	1.05
1955–56	24.740	2,399	75,066	31,291	48.8	29.72	20.92	9.81	7.06	3.24	0.97
1957–58	25.607	2,449	81,297	33,199	38.2	30.99	21.79	10.11	7.24	3.31	1.03
1959–60	25.908	2,499	91,022	36,429	46.5	31.47	22.35	10.54	7.58	3.51	1.09
1961–62	26.904	2,564	107,103	41,773	48.9	31.56	22.70	10.87	7.85	3.62	1.06
1963–64	28.882	2,634	120,331	45,677	48.0	31.72	22.83	10.91	7.88	3.64	1.12
1965–66	30.824	2,705	132,118	48,845	55.7	31.60	22.60	10.67	7.67	3.50	1.05
1967–68	33.593	2,775	138,905	50,051	63.1	32.29	23.01	10.86	7.81	3.58	1.08
1969–70	35.326	2,846	156,414	54,965	62.8	32.70	23.32	11.00	7.92	3.66	1.14
1971–72	39.017	2,903	180,234	62,089	69.0	32.49	23.03	10.81	7.79	3.62	1.14
1973–74	45.703	2,956	187,907	63,578	76.0	30.96	21.51	9.77	6.98	3.20	1.04
1975–76	52.714	3,008	174,529	58,017	78.9	30.29	20.47	8.79	6.15	2.68	0.83
1977–78	54.447	3,061	181,723	59,369	81.4	29.93	20.12	8.49	5.90	2.56	0.79
1979–80	56.666	3,114	191,423	61,479	83.6	29.89	20.06	8.40	5.82	2.51	0.76
1981–82	62.835	3,207	198,122	61,770	86.9	29.87	20.02	8.40	5.85	2.58	0.84
1983–84	68.752	3,315	201,365	60,746	87.5	29.88	20.00	8.39	5.85	2.62	0.86
1985–86	73.057	3,422	203,694	59,519	90.7	30.35	20.64	9.05	6.48	3.16	1.25
1987–88	74.809	3,530	215,591	61,078	88.1	30.78	20.93	9.07	6.41	2.94	0.96
1989–90	78.895	3,637	231,711	63,705	88.6	30.78	20.96	9.22	6.59	3.15	1.15
1991–92	87.533	3,695	233,597	63,215	86.4	29.99	20.14	8.60	6.09	2.85	1.00
1993–94	93.743	3,737	227,639	60,916	90.8	29.65	19.87	8.48	6.01	2.82	0.98
1995–96	96.384	3,779	218,126	57,728	84.0	29.22	19.27	8.03	5.67	2.67	0.87

Table A4: Income Decomposition for Switzerland (Zürcher, 2004: 281)

		Market Income			Disposable Income		
		1982	1992	Change [%]	1982	1992	Change [%]
$I_{\alpha=-0.5}$	Between	5.58	13.32	138.7	2.86	8.51	197.6
		1.28	*2.18*		*0.78*	*1.55*	
		(2.28)	(4.64)		(2.17)	(5.65)	
	Within	245.18	274.02	11.8	128.81	142.07	10.3
		22.55	*21.78*		*10.13*	*7.88*	
		(97.72)	(95.36)		(97.83)	(94.35)	
	Total	250.76	287.34	14.6	131.67	150.57	14.4
		22.82	*22.10*		*10.37*	*8.32*	
		(100.00)	(100.00)		(100.00)	(100.00)	
$I_{\alpha=0}$ (Theil-*L*)	Between	5.72	13.29	132.3	3.05	8.64	183.2
		1.20	*2.34*		*0.60*	*1.48*	
		(3.15)	(6.68)		(2.73)	(6.87)	
	Within	176.04	185.70	5.5	108.76	117.05	7.6
		8.73	*8.56*		*4.87*	*5.51*	
		(96.85)	(93.32)		(97.27)	(93.13)	
	Total	181.76	198.99	9.5	111.81	125.69	12.4
		9.09	*9.79*		*5.06*	*6.23*	
		(100.00)	(100.00)		(100.00)	(100.00)	
$I_{\alpha=1}$ (Theil)	Between	6.02	13.33	121.4	3.44	8.93	159.6
		1.10	*2.43*		*0.82*	*1.71*	
		(3.63)	(7.12)		(3.22)	(7.21)	
	Within	159.78	173.88	8.8	103.36	114.85	11.1
		10.11	*15.74*		*6.90*	*10.34*	
		(96.37)	(92.88)		(96.78)	(92.79)	
	Total	165.80	187.21	12.9	106.80	123.78	15.9
		10.65	*17.22*		*7.26*	*11.63*	
		(100.00)	(100.00)		(100.00)	(100.00)	

Note: Own calculations. The first line returns the inequality measure; the second line its bootstrap standard error (italic); the third line shows the share in total inequality (in brackets).

Table A5: Subgroup Sizes, Mean Incomes and Inequality for Switzerland
(Ernst, 2000: 298)

Population subgroup	Relative Group Size		Mean Group Income			Group Inequality (1000 I_0)		
Age	1982	1992	1982	1992	% change	1982	1992	% change
20–30	16.5	15.9	34.35	34.81	1.3	142.5	187.9	31.8
30–40	25.6	24.7	36.76	39.93	8.6	97.8	158.5	62.0
40–50	22.3	24.3	39.80	45.55	14.5	93.5	118.3	26.6
50–65	20.8	19.8	45.78	49.73	8.6	150.7	143.5	-4.8
65–80	9.1	8.2	36.56	42.85	17.2	201.0	183.7	-8.6
80 +	5.6	7.1	31.21	37.45	20.0	197.0	157.7	-19.9
Household Size								
1	24.7	26.5	35.54	38.80	9.2	176.9	193.4	9.3
2	25.9	26.2	46.54	49.07	5.5	162.2	158.3	-2.4
3	13.8	14.4	40.28	42.08	4.5	100.7	121.4	20.5
4	21.6	20.5	36.27	43.05	18.7	75.1	140.3	87.0
5+	14.0	12.4	31.13	35.96	15.5	80.4	121.5	51.2
Number of Earners								
0	14.4	18.0	29.23	34.82	19.1	191.0	232.8	21.9
1	60.3	51.2	38.15	40.62	6.5	129.6	150.1	15.8
2+	25.3	30.8	44.93	50.06	11.4	88.8	106.0	19.4
0, age 65	2.9	5.4	27.23	27.68	1.65	364.9	364.0	-0.2
1, age 65	57.3	49.0	37.74	40.20	6.53	124.7	147.8	18.6
2+, age 65	25.0	30.4	44.25	49.85	12.65	76.8	104.7	36.2
0, age >65	11.5	12.7	29.74	37.85	27.28	145.7	163.0	11.9
1+, age > 65	3.3	2.6	51.06	54.63	3.09	274.3	178.9	-34.8
Nationality								
Swiss	87.5	79.2	39.01	43.31	11.0	143.2	164.6	15.0
Foreigner	12.5	20.8	35.60	39.34	10.5	84.7	137.2	62.0
Region								
German speaking part	73.2	75.6	38.80	43.36	11.8	136.9	164.4	20.1
French speaking part	22.8	20.9	38.58	40.49	5.0	132.9	145.5	9.5
Italian speaking part	4.0	3.6	34.67	35.79	3.3	138.2	117.5	-15.0

Note: Income is equivalent net income. Own calculations using the Swiss Income and Wealth Survey (1982) and the Swiss Poverty Study Data (1992). All figures are computed using sampling weights. Income unit is the individual.

Figure A1: Components of Disposable Income for Finland

(Riihelä, 2001a: 5)

Labour income

+ Entrepreneurial income

= Earned income

+ Capital income

= Factor income (market income)

+ Current transfers received (taken separately national social security benefits, occupational social security benefits, social benefits, unemployment benefits and other current transfers received)

= Gross income

- Direct taxes, social security contributions and other current transfers paid

= Disposable income

Figure A2 : Income Composition by Deciles in 1990, 1993 and 1999 for Finland
(Riihelä, 2001b: 17)

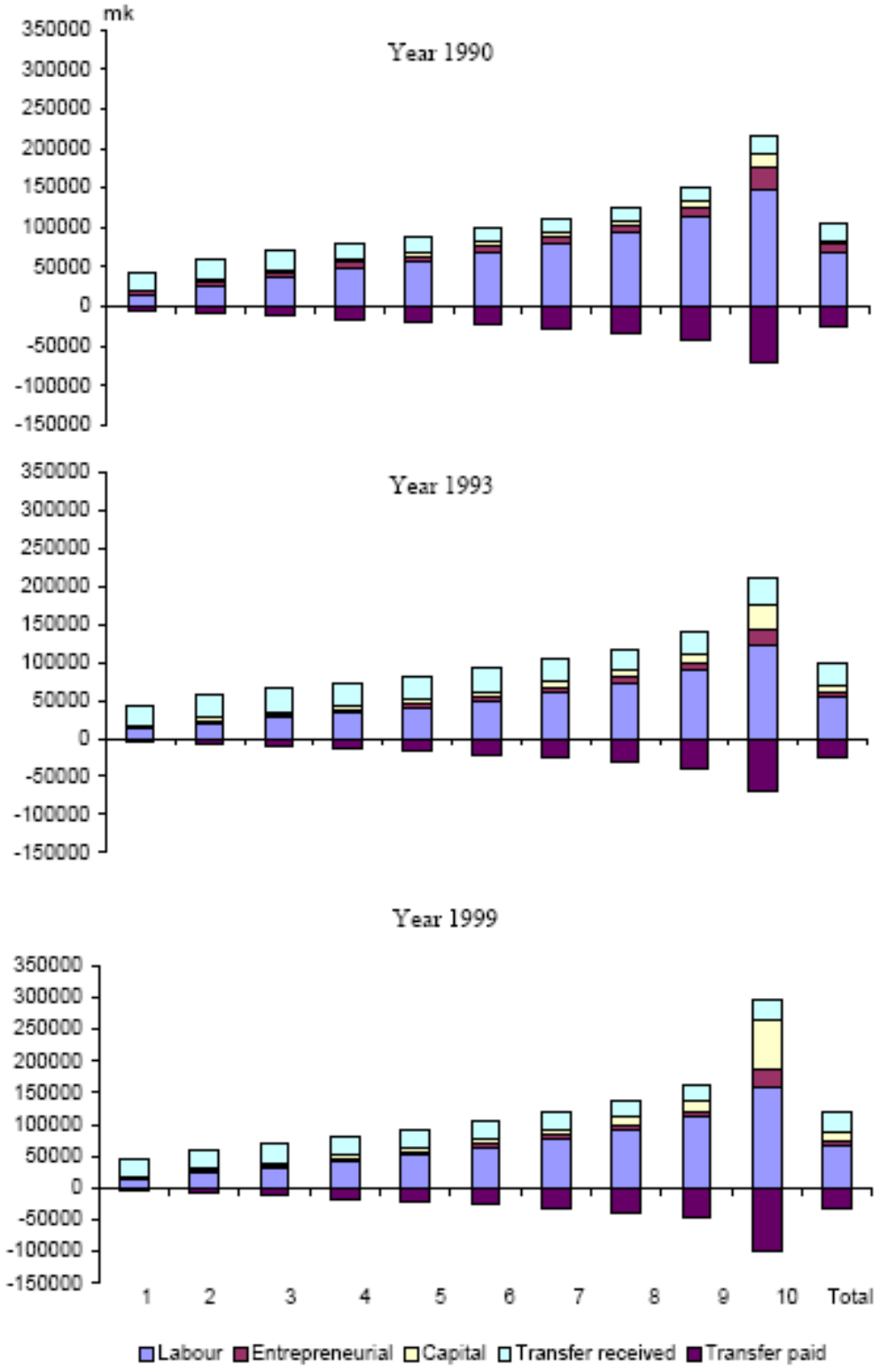

Figure A3: Composition on Gross Income and Taxes in (gross) Income Deciles in 1994 and 2004 for Finland (Riihelä, 2008: 22)

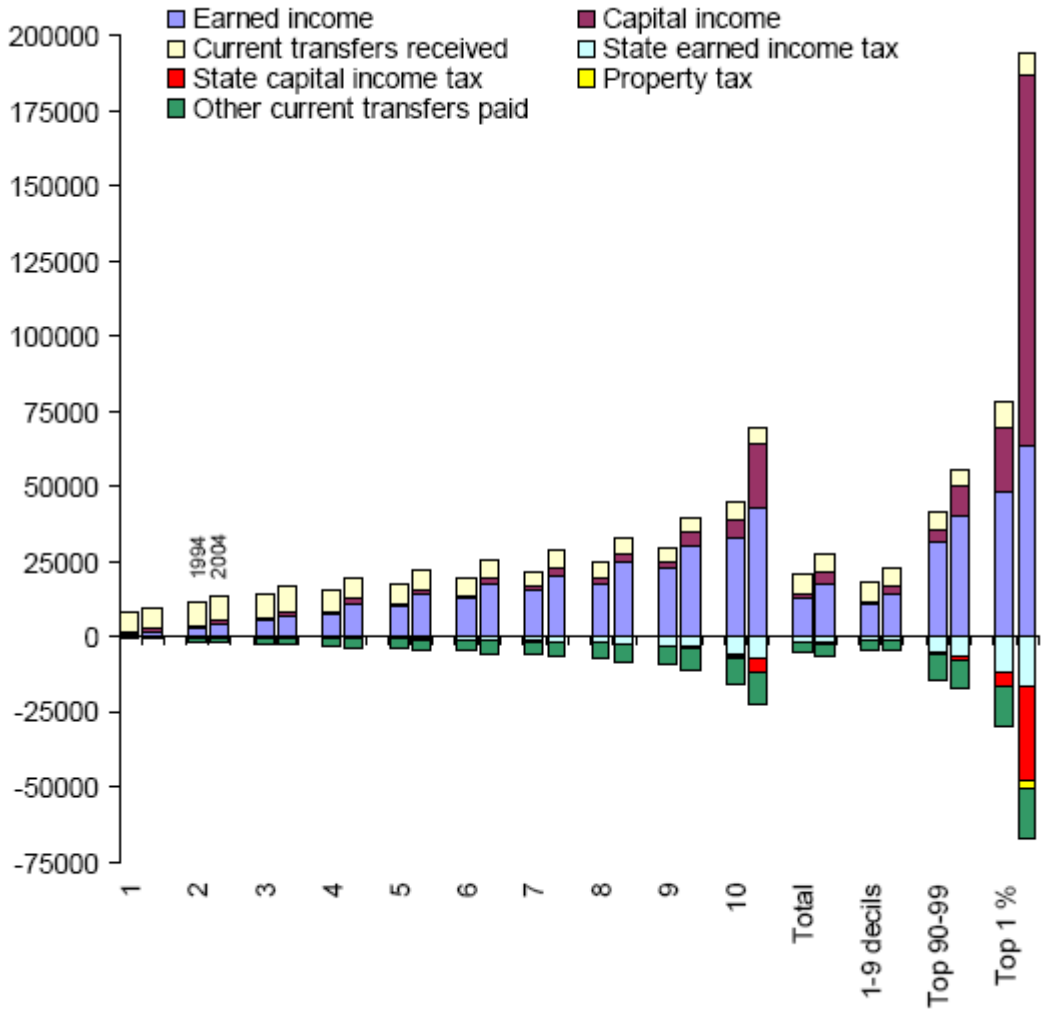

Figure A4: Lorenz Curves 1992 and 1997 for Switzerland (Küng Gugler, 2000: 312)

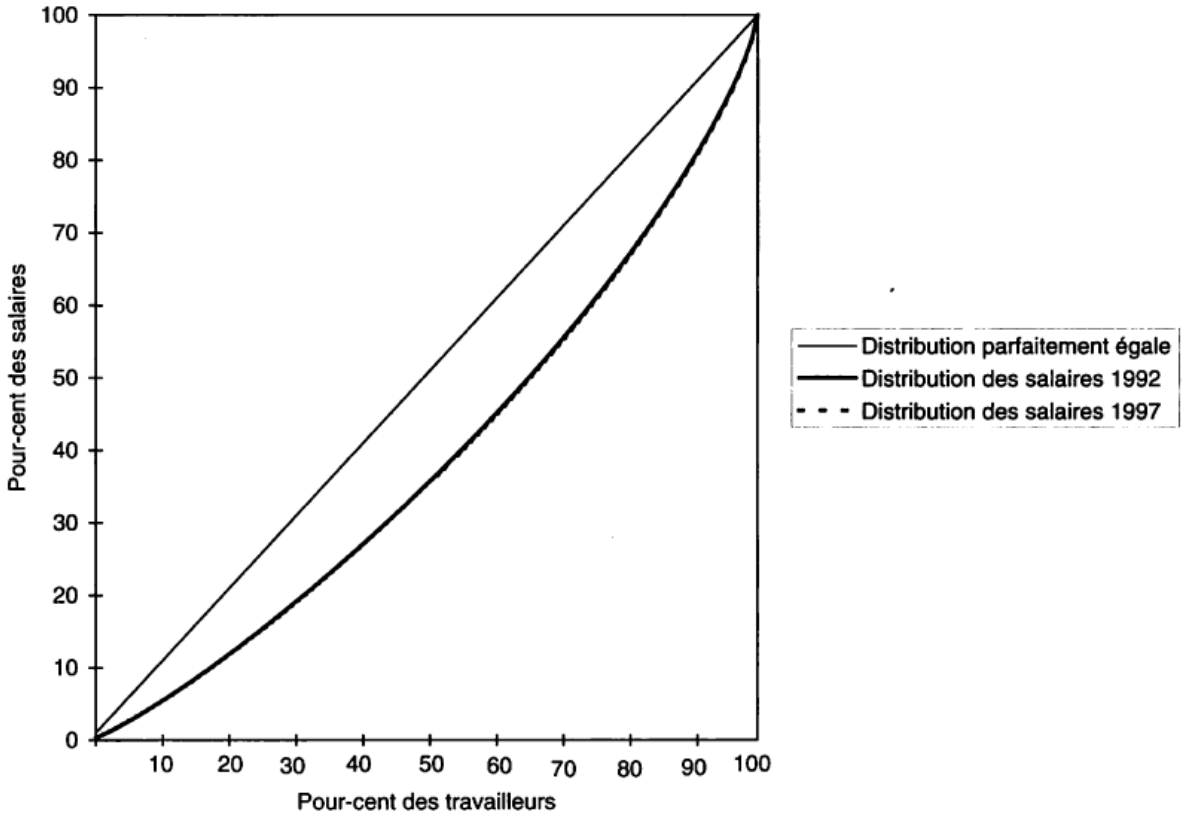

Figure A5: Lorenz Curves for Self-employed (Bolzani, 2002: 125)

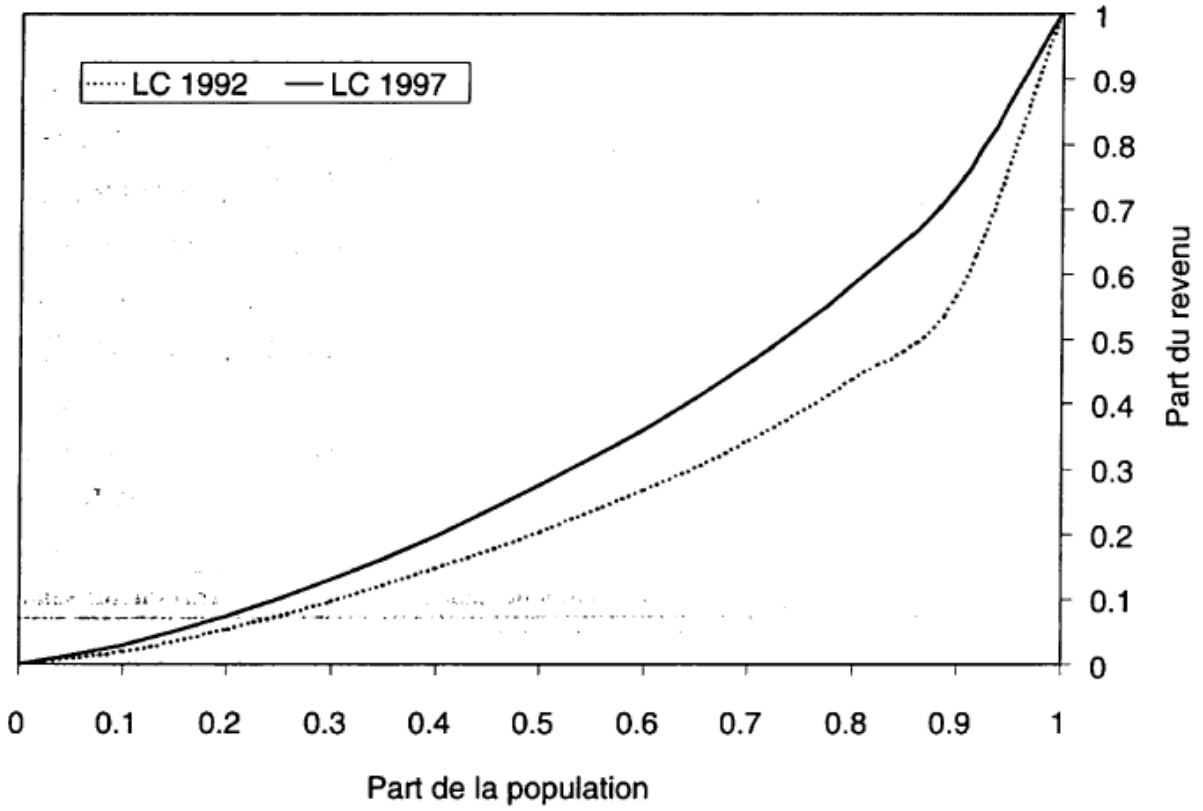

Figure A6: Lorenz Curves for Employees (Bolzani, 2002: 125)

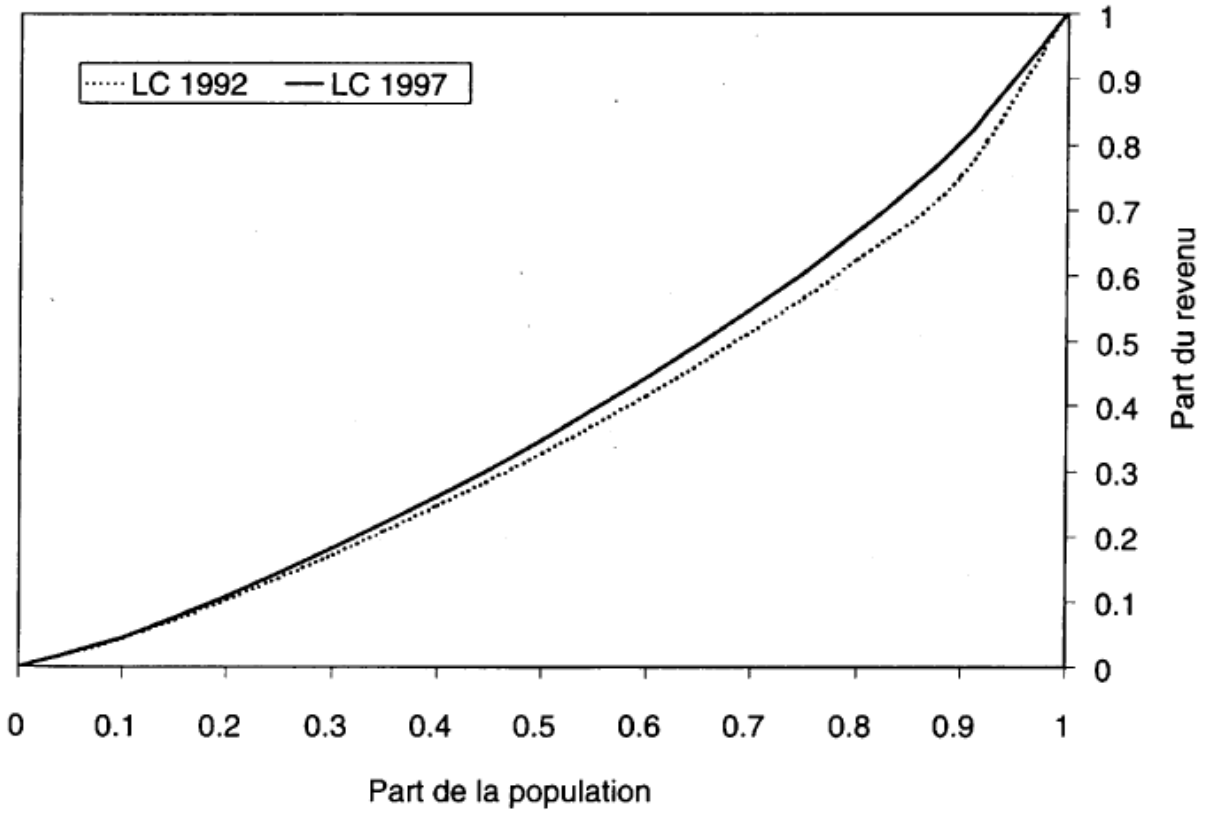

Figure A7: Generalized Lorenz Curves for Self-employed (Bolzani, 2002: 129)

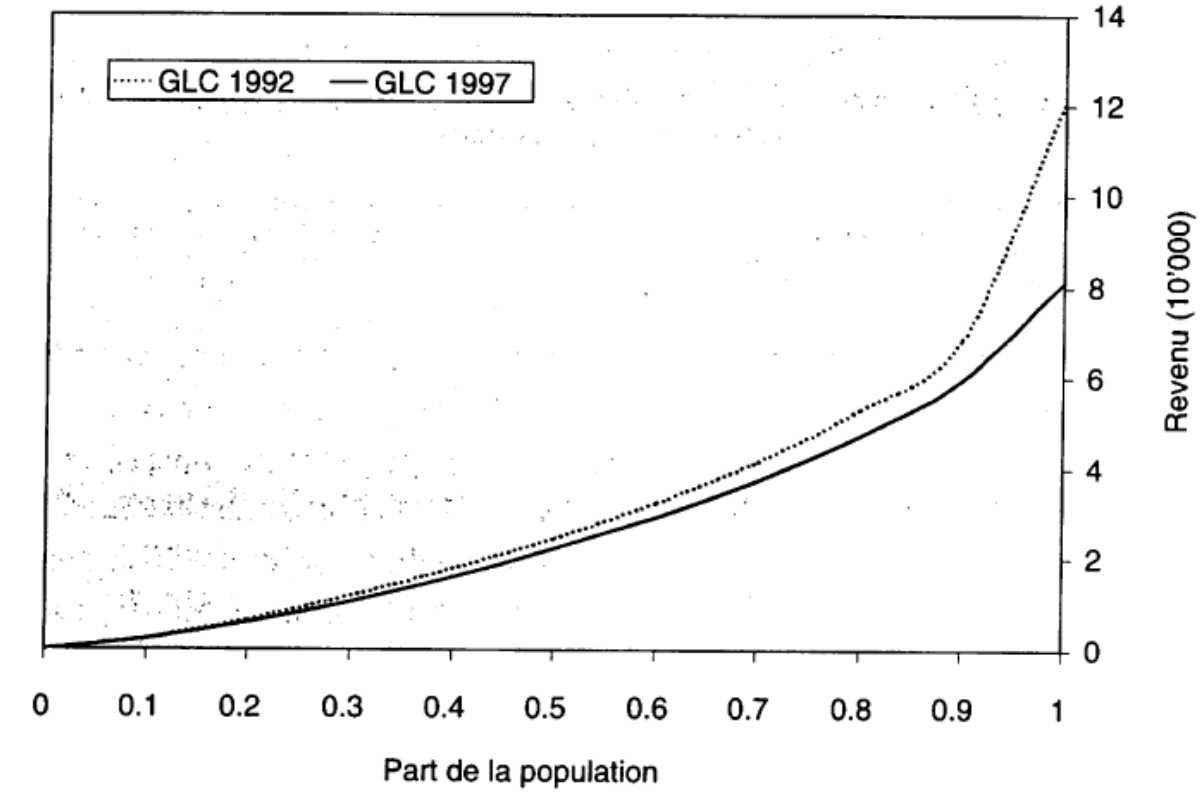

Figure A8: Generalized Lorenz Curves for Employees (Bolzani, 2002: 129)

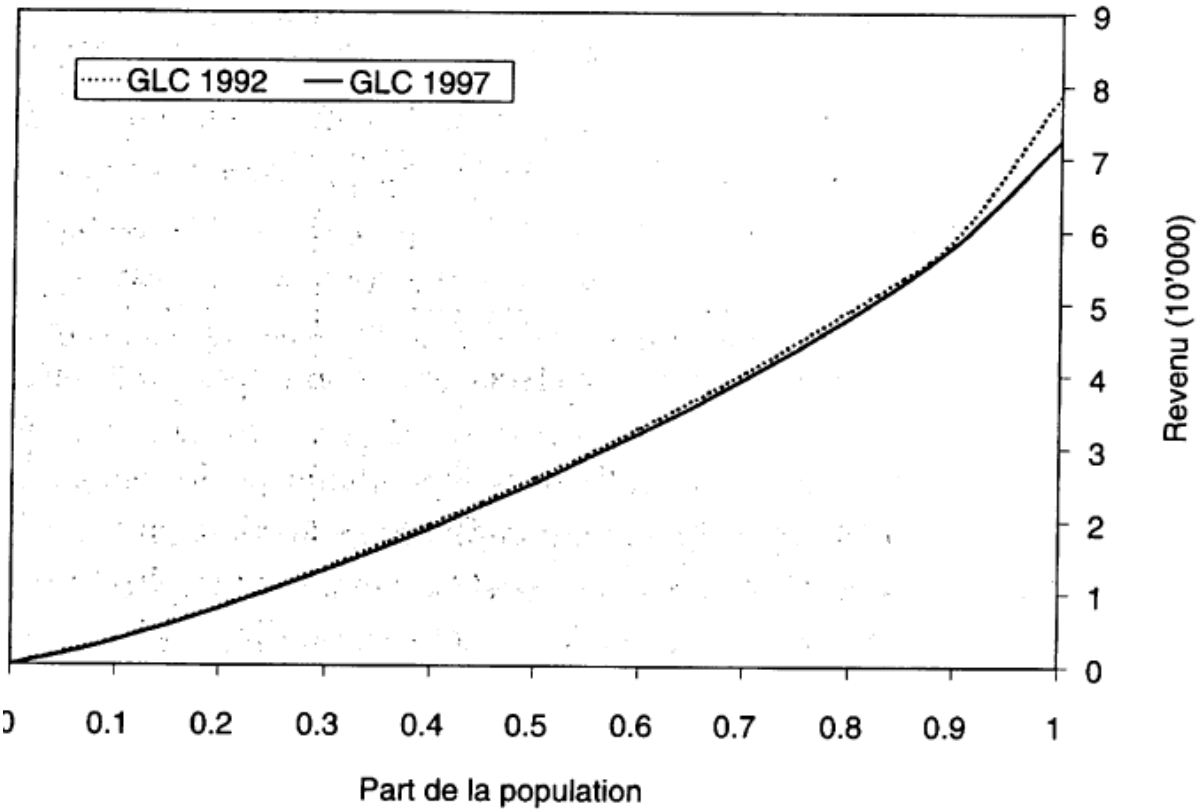

Figure A9: Inequality-Age Profile for Market Income with Pointwise Confidence Bands (Within-group Inequality) (Zürcher, 2004: 279)

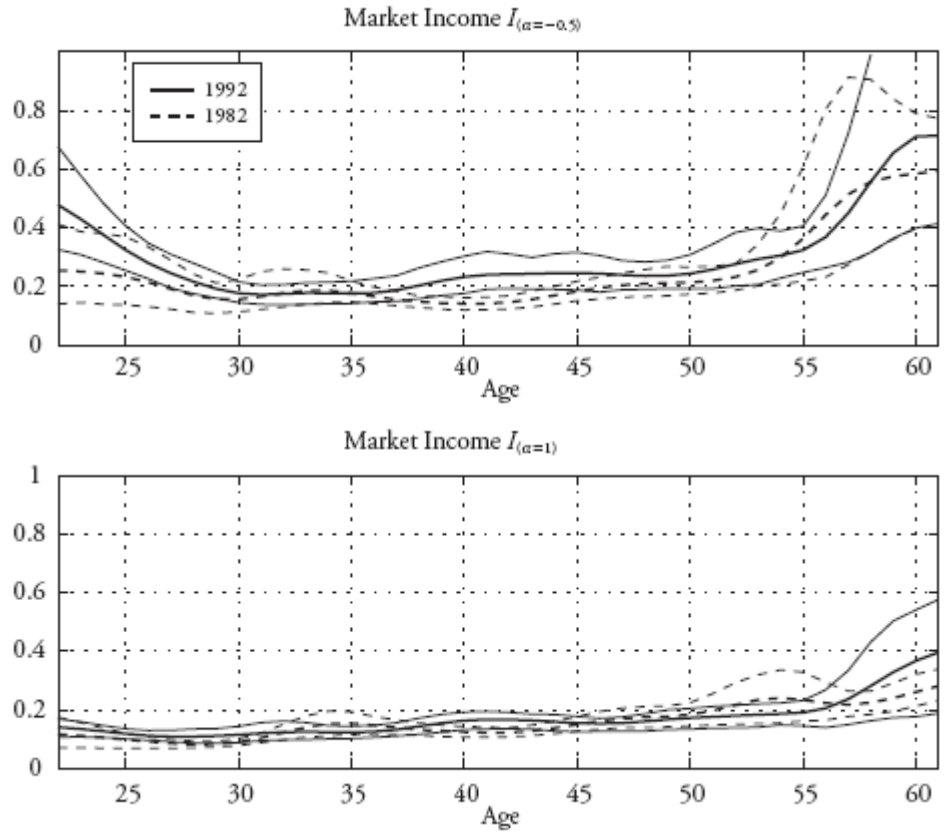

Figure A10: Inequality-Age Profile for Disposable Income with Pointwise Confidence Bands (Within-group Inequality) (Zürcher, 2004 : 280)