

*Base and superstructure: the role of profit rates and welfare states in the shaping of income distribution. The Finnish case, 1960–2000*

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## Abstract

Abstract to be written here!

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# 1 The talk

The structure [*Gliederung*] of distribution is completely determined by the structure of production, not only its *object*, in that only the results of production can be distributed, but also in its *form*, in that the specific kind of participation in production determines the specific forms of distribution, i.e. the pattern of participation in distribution. It is altogether an illusion to posit land in production, ground rent [*sic*] in distribution, etc.<sup>1</sup>

Nordic countries are well-known for their low levels of societal and economic inequality. From the likes of Bernie Sanders to *The Economist*, these countries are hailed as the standard bearers of the ‘ideal’ type of society, something which their Anglo-American counterparts should take heed of. The pre-suffix ‘welfare’ is often associated with the Nordic states. It is often taken for granted that the extensive income redistribution policies, investments into public healthcare and education as well as a relatively tight regulation of the housing market have been among the factors which explain the societal equality in these countries.<sup>2</sup> In other words, it has been the state which has allegedly brought about these relative successes—other, perhaps non-superstructural factors have often been neglected either partially or been set aside as secondary, unnecessary and insufficient for the outcomes at hand.<sup>3</sup>

Evaluating the relationship between the ‘superstructural’ plethora of Nordic welfare state policies and the ‘base’ level socio-economic phenomena would require an exhaustive monograph. Therefore, this paper focuses on the narrower subject of income taxation, distribution, and profit rates, with the latter being the base against which the superstructural tax and redistribution policies are analyzed.

The brief history of Finnish income distribution from the early 1960s until the turn of the millennium can be summarized by typing the capital letter ‘U’. A period of lowering income inequality in the 1960s and 1970s was followed by a decade of relative stability (1980s), which in turn gave away to growing inequality in the 1990s. The income distribution has remained quite unchanged since the turn of the millennium, which is why this inquiry stops at the year 2000. These changes in the income distribution are often associated with the tax and social policies of the welfare state itself. Although the given policies have most certainly lead to a more equal income distribution, they are not the only ones to thank (or to blame, for that matter) This can be seen in Figure 1, which shows the plots for the Gini coefficient of gross income based on taxable income and wealth statistics (Gini, gross, w.), as well as Household and Income Distribution Surveys (Gini, gross).<sup>4</sup>

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<sup>1</sup>Marx, 1973 [1857–8], p. 95 (emphasis added).

<sup>2</sup>For instance, Haapala, 1993, p. 18.

<sup>3</sup>See for instance Uusitalo, 1989.

<sup>4</sup>Household Surveys relevant for this paper have been conducted by Statistics Finland (in Finnish: Tilastokeskus) in 1966, 1971, 1976, 1981 and 1985. From 1987, the annual data comes from the more specific Income Distribution Surveys. The annual Gini coefficient series (Gini, gross, w.) has been estimated by using a generalized inverted Pareto curve interpolation method developed by Blanchet et al. (2017). Given a number of structural changes in data itself, some of the discrepancies have been smoothed out to match the overall trend in the series. The Gini coefficient in this series has been ‘weighted’ by the ratio of taxable to total (including non-taxable) income.

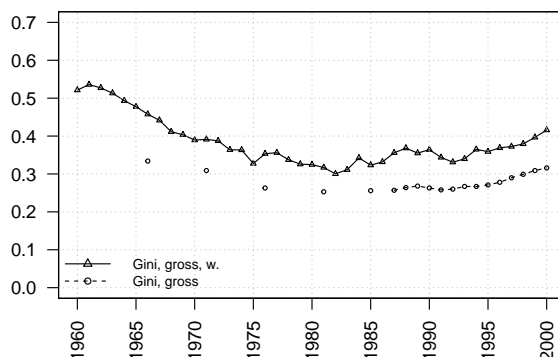


Figure 1: Gini coefficients of gross income in Finland, 1960–2000 (Source: Statistics Finland, 1964–88; 2019a)

A historical tendency of the Finnish state and municipal taxation has been towards a broader tax base and lower effective tax rates. Additionally, Finnish taxation has been moving toward a smaller number of tax deductions and exemptions; for example, whereas pensions, unemployment and student benefits, as well as capital gains and interest were completely exempted prior to the 1980s and 1990s, the remaining types of income were subjected to an increasing number of deductions, thus lowering the effective mean tax rates as well as increasing the dispersion of individuals', jointly taxed couples' (prior to 1976), businesses & corporations and other organisations' rates. In a way, one can use the law of entropy as an analogy to the development of Finnish taxation up until the late 1980s and early 1990s. Although the mean personal income tax rate increased substantially in the 1960s, 1970s and 1980s (Figure 1), these exceptions made the trend more gentle.<sup>5</sup>

The development of business & corporate taxation in the 1960s–80s differed from the tax treatment of individuals quite markedly. Even prior to this, the Finnish state authorities had been trying to encourage investments by taxing withdrawals and dividends more heavily than the gross profits of the companies themselves, as well as by lowering the business & corporate tax rates *vis-à-vis* state income tax rates.<sup>6</sup> By the late 1980s, limited corporations were able to deduct between 40–60% of their dividends from their corporate tax, which had effectively begun the move away from the 'double taxation' of capital incomes prior to the introduction of the formal *avoir fiscal* system in 1990.<sup>7</sup>

The historical development of the Finnish income taxation cannot be grasped effectively without an understanding of the development of the underlying trends in capital accumulation and profitability of capitalist businesses & other enterprises. According to Hjerpe (1988), the mean rate of investment in the Finnish economy picked up in the late 1940s and early 1950s, remaining, by global standards<sup>8</sup>, quite high until the great depression of 1991–3. On one instance, the Finnish economist Pohjola (1996) has even described the pre-depression pace of accumulation as a 'world record of investment', at least by post-war OECD standards.<sup>9</sup>

<sup>5</sup>An example of this was the income and wealth tax law of 1943 (TOL 888/1943 vp), which introduced a three-class model of taxation with three separate sources of income (personal, business & agricultural income). Prior to this, the first permanent state tax on income and wealth had only been introduced in 1920 (see Honkanen, 1993, p. 7,8,60 and Turkkila, 2011, p. 58–61).

<sup>6</sup>Honkanen, 1993, p. 14.

<sup>7</sup>Niskakangas, 2011, p. 111.

<sup>8</sup>Hjerpe, 1988, p. 123.

<sup>9</sup>Pohjola, 1996, p. 36.

As the rate of accumulation remained high, the mean rate of profit in the Finnish business & corporate sector eroded (Figure 3). Although the descent of the rate of profit was not linear, the high accumulation rate itself meant that businesses & corporations became more reliant on external funding to keep up their expansion and replacement of machinery, plants and labour force. By the 1960s, complaints were being voiced aloud that Finnish corporations had effectively ceased to pay dividends, rather retaining their gross profits for investment purposes instead.<sup>10</sup> However, even if the Finnish income taxation did encourage businesses & corporations to ‘abstain’ from profit payouts, the tax exemptions for both interest and capital gains meant that these sources of income were clearly favoured over withdrawals and dividends, even if the exemption in the case of interest could be defended on grounds of inflation.<sup>11</sup>

Given this historical background, it is easy to question the belief in the heaviness of Finnish income taxation during the formative years of the welfare state. Although the nominal tax rates could climb up to 60% (and beyond), a multitude of tax deductions and exemptions meant that the effective tax rates could remain well below the nominal ones. In addition, different sources of income were treated unequally, which meant that the dispersion of taxpayers’ effective tax rates could be quite significant. Hence, when one contemplates about the relation between income distribution *vis-à-vis* the taxation and redistribution policies in Finland prior to the 1990s, one should pay emphasis to the *actual* changes in tax policies and effective tax rates, not on the explicit or implicit aims of the welfare state, given its arsenal of policies available at any given time—or, for that matter, the later historical narratives on the welfare state itself.<sup>12</sup>

The belief in the Nordic welfare states’ ability to effectively influence the level of societal equality (or lack thereof) has been illustrated vividly in the ongoing debate on the relation *vis-à-vis* taxation and income inequality since the 1980s and 1990s. In Finland, this debate has focused on the 1993 Income Tax Act, which introduced a dual system of state taxation for wages and capital income. Wages, as previously, continued to be taxed on a progressive scale. Capital income, on the other hand, was from 1993 onward taxed on a relative (or flat) scale, set initially (and nominally) at 25%. Whereas the top-most tax rates for wages could still reach up to 60% with municipal taxes included, the non-municipally taxed capital incomes obviously received a very favourable treatment by the tax authorities. In addition, taxpayers’ capital income was—and continues to be—only partially taxable, thus lowering the effective tax rates even below the  $\frac{1}{4}$  mark in the mid-1990s. Although similar tax reforms had previously been introduced in Norway and Sweden, the timing of the Finnish reform was crucial—introduced in the middle of the country’s worst post-war economic crisis, and in effect during the late-1990s recovery and growing income inequality, the tax reform has received much more attention in the Finnish literature and discussion than in its Scandinavian neighbours.

The discrepancy between wage and capital income tax rates (1993–) can be seen in Figure 1. Prior to the reform, taxes on capital income have been included in the longer series’ nominator and the taxable capital incomes themselves in the denominator.<sup>13</sup>

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<sup>10</sup>Jääskeläinen, 1968, pp. 15–16, 26. The author, however, dismisses these complaints and states that taxation as such was not an obstacle for dividend payouts.

<sup>11</sup>Yli-Olli, 1980, pp. 13–14. Capital gains from the sales of Finnish corporations’ stocks were tax-free after a five-year holding period. The state tried to encourage shareholders not to demand a high dividend-to-profit ratio from the corporations in order to keep the mean rate of investment high for employment and fiscal purposes.

<sup>12</sup>Hindess, 1987, pp. 9–10.

<sup>13</sup>The series for wages & entrepreneurial income is a quotient of state income taxes minus capital income taxes over wages & income on entrepreneurship and wealth, minus capital income (1993–). Entrepreneurial income has been treated partially as wage and in part as capital income with an imputed capital income share estimated on a rough rate of return on the stock of net capital in non-incorporated businesses. Given the complexity of its taxation, the nominator in this quotient has not been estimated for this split entrepreneurial taxation, which increases the value of the ‘Wages & Entrepreneurial’ series to an extent after 1993.

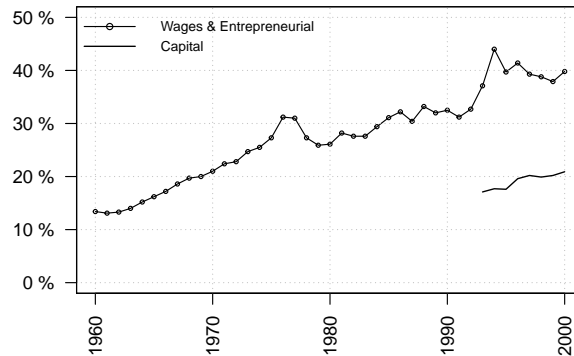


Figure 2: Mean wage & capital income tax rates in state taxation, 1960–2000 (Source: Turkkila, 2011, Table 1c (p. 250))

This tax reform, although hotly debated during its parliamentary processing, would probably not have received as much attention in the Finnish literature, had it not been for the rapid increase in income inequality in the latter half of the 1990s. Given the obvious bias toward capital incomes and the subsequent post-1993 rise in inequality, it is small wonder that many authors have held this reform either partially or wholly responsible for the hike in Finnish income inequality ever since.<sup>14</sup>

The motivation behind this paper is to provide a Marxian contribution to the ongoing debate on global income inequality and its historical trends since the 19th century. This discussion has, for the most part, been dominated by a kind of a Pikettian narrative, not least due to his 2014 *Capital in the Twenty-First Century*. This narrative suffers from a degree of determinism—income inequality has, as the argument goes, risen, unless a crisis, a shock, or a policy turn has shifted it off its course.<sup>15</sup> This stands in stark contrast with the formerly dominant Kuznetsian view, although Kuznets (1955) himself held a number of reservations on the universal applicability of his  $\cap$ -curve argument.<sup>16</sup>

What these contributions lack is an understanding of the role of capital accumulation and profitability on income inequality in modern-day capitalist economies. This is not to claim that this relation would be clear in Marxism or in the tradition of classical political economy, either. There is a marked discrepancy *vis-à-vis* the relatively straightforward quotation from Marx (1973 [1857–8]) in the beginning of this paper and the dynamics of income distribution in a contemporary welfare state, such as Finland, in its recent past. This paper seeks to bridge this gap somewhat by producing and analysing empirical evidence on the relationship between the rate of profit and the distribution of pre- and post-tax income in Finland in the 1960–2000 period.

<sup>14</sup>For example, Riihelä et al., 2005, p. 16,17,19,22; Riihelä & Suoniemi, 2017, p. 202; Jäntti et al., 2010, p. 411.

<sup>15</sup>The lesser and relatively unknown debate on maximum feasible inequality, or the maximum Gini coefficient, goes on these same lines (for instance, Milanovic, 2013; Milanovic, Lindert & Williamson, 2007.)

<sup>16</sup>Kuznets, 1955, p. 1–3. Observe, how the development of the Gini coefficient in Finland during the paper’s research period ‘turns’ Kuznets on his head!

## 1.1 Casting doubt

This paper stands in contrast to the preceding views by arguing that the 1993 tax reform cannot be viewed as a causal factor behind rising inequality in Finland during the 1990s. On the contrary, it is argued that this reform is more aptly characterized as a secondary cause and inferior to changes in the average rate of profit of Finnish business & corporate capital after the great 1991–3 depression. This does not mean that the reform was irrelevant. It is, however, more accurate to describe it as an ‘aggravator’—a factor which in itself was unnecessary and insufficient for the post-depression rise in income inequality, yet which has certainly affected the *level* of post-depression income inequality ever since.

One of the key arguments behind the taxation driven analysis of the causes of rising inequality has been to claim that high-income taxpayers have been incentivized to ‘transform’ a part of their wage income into capital income in order to reap the benefits of the low capital income tax rate.<sup>17</sup> Even though this ‘income transformation’ has most likely been a real phenomenon, the aforementioned claims rest on an implicit assumption that the underlying profit rates of dividend, interest and withdrawal-paying companies has remained, in relative terms, still. This, however, could not have been farther from the truth. Figure 2 shows the mean rate of profit of the Finnish corporate and business sector in 1960–2000. The Figure includes also a series on the net-of-capital income rate of profit, which clearly shows that the profit payout ratio (*i.e.*, the ratio of capital incomes to the net profit (realised surplus value)) has not increased by any means since the 1991–3 depression.<sup>18</sup> On the contrary, this ratio has even *decreased* toward the end of the decade.<sup>19</sup>

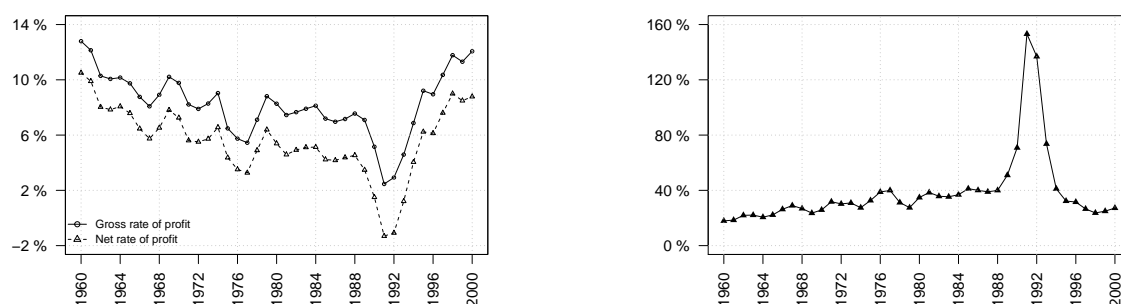


Figure 3: Gross and net-of-capital income rates of profit (left) & capital income payout ratio (right), 1960–2000 (Source: Statistics Finland, 1984, 1995, 2018, 2019c)

The spike in the latter series’ value amidst the 1991–3 depression speaks of the capitalist companies’ attempts to retain their annual flow of capital income as well as—and more crucially—of an explosive growth in the companies’ interest rates. As has already been mentioned, interest was exempted from Finnish state and municipal taxation until 1990. Yet it was interest which formed a relative majority of the Finnish households’ capital incomes amidst the depression. This can be vividly illustrated by the following Figure which plots the different sources of capital income in relational terms between 1960–2000. This decomposition does not itself reveal much about the distribution of

<sup>17</sup>These concerns have been spoken out already during the parliamentary processing of the 1993 Income Tax Act (Heino, 2015, p. 76). The author is, however, unaware of any attempts to substantiate these claims with causal evidence.

<sup>18</sup>The increase in the profit payout ratio is analysed in greater depth further on.

<sup>19</sup>The ‘net rate of profit’ series nominator is the difference between the corporate & business sectors’ net surplus and the sum of the households’ capital incomes. Therefore, this difference most presumably exaggerates the difference in the gross and net profit rates (defined accordingly). However, the vast majority of the households’ capital incomes have come from the corporate & business sector in any case.



capital income. Therefore, a second graph in Figure 3 plots the structure of the top 1% gross incomes with the capital and entrepreneurial incomes merged together for an easier comparison with wages.<sup>20</sup>

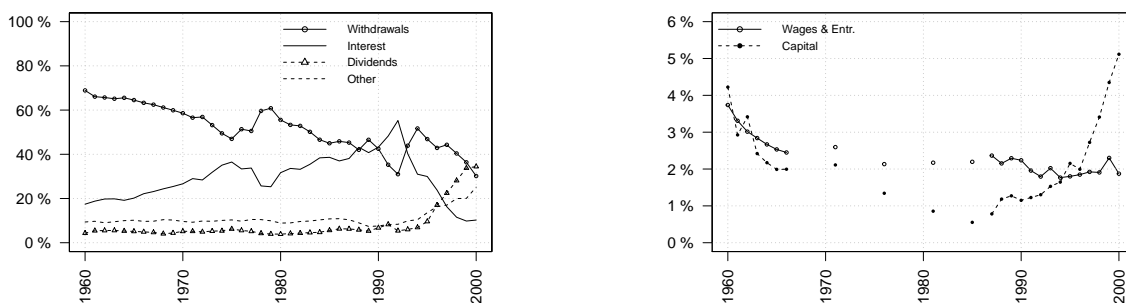


Figure 4: The structure of households' capital income (left) & top 1% gross share (right), 1960–2000 (Source: Statistics Finland, 1964–70, 2019a; Jäntti et al., 2010)

Even if ‘income transforming’ may have happened (e.g., doctors, lawyers & other professionals establishing limited liability companies in order to dodge high wage income tax rates) to an extent, it is difficult to ascertain its prevalence even at the very top of the distribution, as the top 1% gross wage share has remained almost stagnant after the depression, whereas the share of capital & entrepreneurial incomes has increased substantially (of these two, it is the former which has driven this development). Therefore, it seems implausible This seems to point again to the direction of the gross and net-of-profit rates of profit, as depicted in Figure 2—it is the increase in the (mean) rate of profit itself which has caused this structural shift in the top incomes' gross share and structure. Although the structural changes in the households' composition of capital income may have been the result of simultaneous changes in the companies legal status (*i.e.*, of more businesses becoming incorporated), it is difficult to see how this would have affected the changes in the composition and gross share of the top 1% (or any other top fractile, for that matter).<sup>21</sup>

Given these changes in the gross and net-of-capital income rates of profit as well as the households' and top 1%'s income composition, it is time to turn for a more thorough analysis of the effects of income taxation in Finland during the period at hand.

## 1.2 Progressivity and redistributiveness of income taxation

Redistribution of taxable income among households has been one of the few, or perhaps even the only explicitly stated aim of the Finnish welfare state during the post-war years.<sup>22</sup> This being given, it is no wonder that the ‘crisis of the welfare state’ and the rising income inequality in several industrialised capitalist countries in Europe and elsewhere have been seen as a testimony to the weakening grip of the welfare state over the economy. In order to grasp these intertwining phenomena, it is important to have an idea of what has really taken place in terms of the progressivity and redistributiveness of income taxation in Finland during the time. These have been measured by using the so-called

<sup>20</sup>The share of withdrawals in 1960–74 is based on an estimate.

<sup>21</sup>See Appendix for the changes in the legal status of Finnish companies between 1984–2000.

<sup>22</sup>Uusitalo, 1989, p. 17.

Kakwani index, which in essence is a difference of the concentration index of taxes and gross income, and the Musgrave–Thin measure, which is the difference of before to after-tax Gini coefficients.

Figure 4 gives the plots for the Kakwani index and the Musgrave–Thin measure of redistributiveness in state taxation. It is easy to note a degree of similarity between these series. This seems to indicate that both the progressivity and redistributiveness of state taxation have moved hand in hand during the research period. Third degree polynomial trends are given for clarity due to the lack of data between 1966–86.<sup>23</sup>

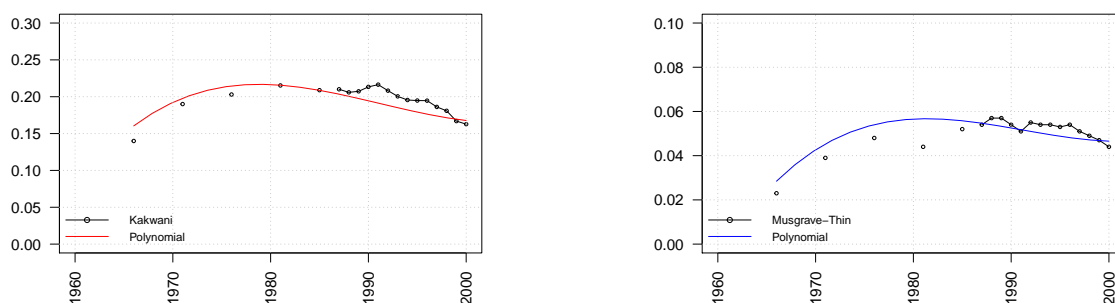


Figure 5: Kakwani index and Musgrave–Thin measures for state income taxation, 1960–2000 (Source: Statistics Finland, 2019b)

In terms of progressivity and redistributiveness, the Finnish state taxation seems to have been at its apex at the turn of the 1970s and 1980s. Afterwards, both series seem to have entered a gentle dive. This has most probably been due to reductions to the top-most tax rates since the 1980s. The 1993 Income Tax Act has continued this trend by lowering the effective rates of many high-income taxpayers. The trend towards lower progressivity and redistributiveness has, however, begun already earlier.

It does not take much effort to appreciate the fact that capital incomes have been the driving force behind rising income inequality in Finland after the 1991–3 depression. This can be gathered from another pair of graphs, as shown in Figure 5, which plot the inverse of the Kakwani index against the Atkinson measure and the inverted & weighted Pareto coefficient ( $\omega(\alpha^{-1})$ ) for the same set of years as previously. The inverse of the Kakwani index has been scaled down to 1% of its original value to make its trend more easily comparable to these variables. The weighted inverse of the Pareto coefficient is plotted on the right-hand y-axis.

<sup>23</sup>The statistical significance and explanatory power ( $R^2$ ) of the third degree polynomial trends have been found superior to linear, second and > 3 degree estimates. The OLS estimates are available through the author upon request.

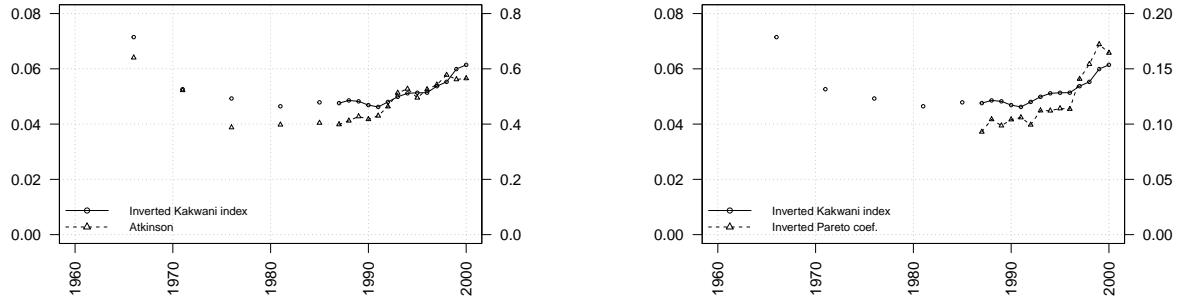


Figure 6: Atkinson measure and inverted (weighted) Pareto coefficients *vis-à-vis* the inverse of the Kakwani index, 1966–2000 (Source: Statistics Finland, 2019a & 2019b)

The reductions in the values of the Kakwani index clearly coincide with the rise in the significance of capital incomes (Atkinson measure) and top-income driven income inequality (the weighted inverse of the Pareto coefficient). The Finnish state taxation has become more progressive *and* redistributive *as* the significance of capital income as an explanatory variable for the dispersion of wages and capital income has been reduced in the 1960s and 1970s. As the importance of capital incomes has once again increased in the 1980s and 1990s, so have the progressivity and redistributiveness simultaneously decreased. There may be more than a mere coincidence behind these developments. As is both well known as a heuristic rule-of-thumb, capital incomes have been concentrated at the top. As is likewise known, the changes in the top income shares as in the overall income inequality as measured by the decomposition of the Gini index for the exponential and Pareto distributed parts of the percentile distribution in 1987–2000, have been very much capital driven. Hence the share of gross income above the last threshold(s) in the state taxation has fluctuated around the share of capital incomes concentrated at the top-most fractiles. Therefore, even if no changes to the state income tax rates had been conducted prior to the 1991–3 depression, the share of income in the ‘realm’ of relative (or flat) taxation would have grown higher (*i.e.*, beyond the last threshold even the most progressive taxation becomes relative, which speaks itself of the importance of the mean tax rates versus the progressivity of the taxation itself.)

How have these changes effected different fractiles’ gross and net shares? This can be answered by calculating a simple quotient of the difference between each fractiles’ gross and net shares over their gross shares, *i.e.*,  $\frac{(s_t^g - s_t^n)}{s_t^g}$ , in which  $g$  and  $n$  stand for gross and net and  $t$  refers to the year observed.

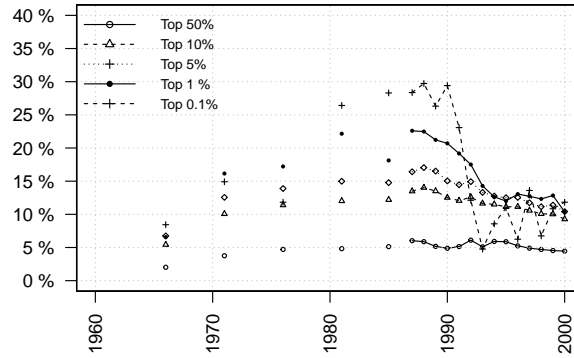


Figure 7: The gross-to-net ratio of top income shares, 1966–2000 (Source: Jäntti et al., 2010)

What this data shows us is that the top fractiles' relative taxation has become significantly higher between the 1960s and late 1980s. Since then the gross-to-net ratio between the gross and net shares has decreased significantly the higher in the distribution one travels. At the top 0.1%, the relative difference has collapsed way below that of the top decile average, not to mention the averages for the top 5 and 1%, respectively, when one relies on the survey-based, individual income distribution statistics, as in Jäntti et al. (2010).

### 1.3 The importance of profit

The gross and net-of-capital income rates of profit were shown to have presented a remarkable degree of similarity throughout the period. However, the profit payout ratio (*i.e.*,  $1 - \left(\frac{\bar{\varphi}_t^*}{\bar{\varphi}_t}\right)$ , in which the nominator is the net-of-capital income rate of profit and the denominator the gross rate) was seen to have increased substantially right on the eve of the 1991–3 depression, peaking in 1991 and collapsing below pre-depression figures in the later part of the decade. This spike in the right-hand graph in Figure 2 pays homage to the fact that Finnish businesses and corporations seem to have, on average, favoured a stable outflow of capital income payments over keeping it in line with the fluctuations in gross profitability.

There seems to be evidence of the existence of a ‘two-class’ structure of income distribution, in which the vast majority of people follow a stable exponential and a small top-earning minority an instable Pareto probability distribution.<sup>24</sup> In this explanation, changes in the income distribution are mostly due to fluctuations at the top-most fractiles’ income shares, which again are related to stock market price and yield indices and capital income in general. These, it can be argued, are again tied to businesses’ & corporations’ profit rates.

Similar evidence has been found in Finland.<sup>25</sup> Below a certain, fluctuating threshold, Finnish taxpayers’ and households’ gross incomes tend to follow an exponential distribution (*i.e.*,  $p(y)^{\text{Exp}} = \lambda e^{-\lambda y}$ , in which  $y$  is income and  $\lambda$  is a rate parameter, which, alongside  $y$ , determines the slope of the probability function). Above this threshold, the Pareto distribution seems to have taken hold ( $p(y)^{\text{Pareto}} = \left(\frac{y}{y_{\min}}\right)^{-\alpha}$ , in which  $y_{\min}$  is the minimum income above which the Pareto distribution takes hold (*i.e.*,  $y > y_{\min}$ ) and  $\alpha$  is the rate parameter, also known as Pareto’s alpha). Given the stability at the exponential part of the distribution, it seems plausible to suggest that the Pareto distributed tail of the distribution has been responsible for the post-depression increase in Finnish taxpayers’ and households’ income inequality.

The importance of profit on the distribution of income can be illustrated vividly in the following Figure 8. Some explanation is needed in order to grasp what is happening in it. Firstly, the figure shows the gross rate of profit, as shown before. Atop of this graph, there are two measures which, firstly, ‘integrate’ or ‘weight’ (as in the following Figure) the changes in the profit payout ratio to the net-of-capital income rate of profit and, in the second case, add capital gains in the latter’s value.<sup>26</sup> Lastly, the top-most graph displays the Gini coefficient at the Pareto distributed tail, calculated on the basis of percentile-distributed taxable income data for the years 1987–2000.<sup>27</sup> The ‘integrated’ rate of profit, in the lack of a better term, can be expressed in

$$\omega \bar{\varphi}_t^* = ([\bar{\varphi}'_t - \bar{\varphi}_t^*][1 + \kappa'_t]) + \bar{\varphi}_t^*, \quad (1)$$

in which  $\bar{\varphi}'_t$  is the gross rate of profit,  $\bar{\varphi}_t^*$  the net-of-capital income rate of profit and  $\kappa'_t$  is the profit payout ratio. The addition of capital gains can simply be expressed in

$$\omega \bar{\varphi}_t^* = \omega \bar{\varphi}_t^* + \bar{\varrho}'_t, \quad \bar{\varrho}'_t = \frac{\text{capital gains}_t}{\left(\sum_{i=1}^n c_{t-1} + \sum_{i=1}^n v_t\right)}, \quad (2)$$

in which the denominator in  $\bar{\varrho}'_t$  is the same as in the gross and net-of-capital income profit rates, that is, the previous year’s stock of constant and the observed year’s flow of variable capital. These series are presented below side by side

<sup>24</sup>Drăgulescu & Yakovenko, 2001; Silva & Yakovenko, 2004; Shaikh, 2017.

<sup>25</sup>The authors’ research, forthcoming.

<sup>26</sup>Unfortunately, data on Finnish households’ capital gains is unavailable before 1987.

<sup>27</sup>This dataset is, again, unfortunately not available for the preceding years. It has been displayed here instead of Ginis calculated for longer time series due to the aforementioned issues with survey-based household income data as well as issues with the annual grouped taxable income and wealth statistics data, compiled by Statistics Finland.

with the inverse of the gross rate of profit and the profit payout ratio in order to emphasize the fact that Finnish businesses & corporations have been trying to maintain a stable annual outflow of capital income, even during times of crisis in the early-1990s depression. Interestingly, this does not hold for the post-oil crisis recession in 1975–7.

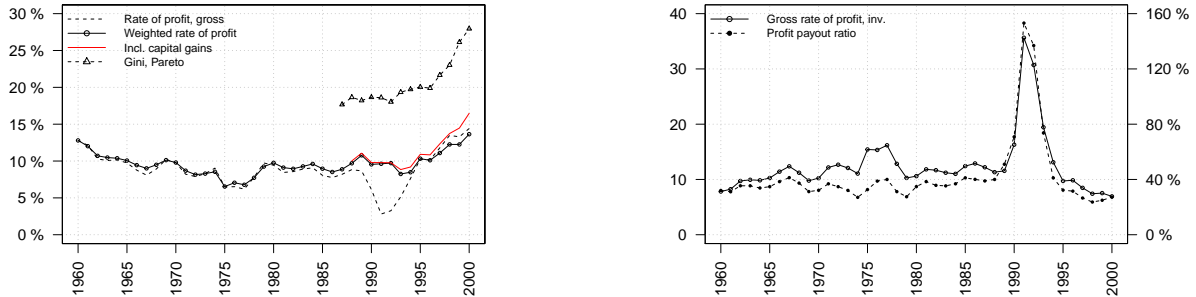


Figure 8: The stability of capital income *vis-à-vis* the rate of profit in Finland, 1960–2000 (Source: Statistics Finland, 1984, 1995, 1990–2007, 2019)

The ‘weighted’ rate of profit in both of its guises ( $\omega\bar{\phi}_t^*$ ,  $\omega\bar{\phi}_t^*$ ) is seen to have ‘carried’ the business owners’ and shareholders’ capital income over the deep slump during the early-1990s depression and its immediate aftermath. This may help to understand why the Gini coefficient for the Pareto distributed tail has remained stable during this time, despite the obvious trough in the gross rate of profit (or, rather, its mean). To exemplify this businesses’ & corporations’ ‘dedication’ to their owners, it is easy to see that the covariance between the inverse of the gross rate of profit and the profit payout ratio has been quite tight. Thus it is no wonder that the post-depression growth in income inequality was not preceded by a prior slump during the socio-economic hardship of 1991–3.

The impact of the Gini at the Pareto tail on the overall income inequality can be estimated via OLS, in which the Gini for the overall (percentile) distribution is regressed on the coefficients at the Pareto tail as well as the exponentially distributed ‘bulk’. This can be expressed in

$$\text{Gini}_t = \beta_0 + \beta_1 \text{Gini}_t^{\text{Pareto}} + \beta_2 \text{Gini}_t^{\text{Exp}} + \varepsilon_t, \quad (3)$$

in which  $\varepsilon_t$  is the residual. The results are shown in the Table below.<sup>28</sup>

<sup>28</sup>There is slight yet non-significant autocorrelation in the equation’s residual, with a Breusch–Godfrey test value of 4.064 and a Ljung–Box test value of 8.716, which stand above the critical  $\chi^2$  values of 1.232 and 1.777, respectively. A visual inspection of the residual’s autocorrelation function reveals, though, that it lacks a trend, with the serial correlation being limited to a few lag points. A multicollinearity diagnostics check using R’s `mctest` function reveals no statistically significant collinearity between the regressors.

Table 1: OLS results for the decomposition of the Gini coefficient, 1987–2000

	Estimate	Std. error	<i>t</i> -value
(Intercept)	0.000	0.000	0.744
$Gini_t^{\cdot\text{Exp}}$	0.762	0.077	9.847***
$Gini_t^{\cdot\text{Pareto}}$	0.485	0.037	13.216***

Sig.: \*\*\* < 0.001, \*\* < 0.01, \* < 0.05  
 Resid. std. error: 0.001 (10 df), adj.  $R^2$ : 0.963  
 $F$ : 159\*\*\* (2 + 10 df),  $n = 14$   
 Source: Statistics Finland, 2019a

Now, the time period covered by this model is extremely short—given that the series have been made trend stationary by a first-order differencing, there are only thirteen observations left out of the fourteen possible. Not much can therefore be said of the longer term impact of the exponential and Pareto distributed parts of the total income distribution on the overall Gini coefficient. The results nonetheless indicate that the Pareto distributed tail of the overall income distribution may have had a greater impact on the total Gini than the exponentially distributed ‘bulk’.

Given that Gini coefficient calculated for the Pareto distributed part of the overall distribution seems to be somewhat more powerful as an explainer for the total distribution Gini, it can be analysed, what may have been the causal factors behind the changes in this ‘partial’ Gini. Again, a simple OLS equation

$$Gini_t^{\cdot\text{Pareto}} = \beta_0 + \beta_1 \tau_t' + \beta_2 \bar{\phi}_t^* + \beta_3 \text{Top } 1\%_t^{\text{Gross}} + \beta_4 G:N_t + \varepsilon_t, \quad (4)$$

in which  $\tau_t'$  is the tax rate (ratio of total taxes to gross income) at the top 1%,  $\bar{\phi}_t^*$  is the ‘weighted’ rate of profit (including capital gains),  $\text{Top } 1\%_t^{\text{Gross}}$  is the gross income share at the top 1%, and  $G:N_t$  is the ratio of gross-to-net income shares at this fractile (*i.e.*,  $\frac{(\text{Top } 1\%_t^{\text{Gross}} - \text{Top } 1\%_t^{\text{Net}})}{\text{Top } 1\%_t^{\text{Gross}}}$ ). Again,  $\varepsilon_t$  is the residual. The results of this ostensibly preliminary and ballpark type of an equation are shown below. Standard errors are given in parentheses.<sup>29</sup>

<sup>29</sup> Again, Breusch–Godfrey and Ljung–Box tests detect some serial correlation within the residual, with test values 7.528 and 8.764, respectively. As before, a closer inspection of the residual’s autocorrelation function reveals that it lacks a trend or other symptoms of heteroskedasticity. The results of the `mcetest` for multicollinearity are inconclusive, with some diagnostics detecting and some not detecting statistically significant collinearity among the regressors. Given the fact that the tax rate variable  $\tau_t'$  and the gross-to-net ratio  $G:N_t$  are quite close to each other by definition, this may somewhat bias the values of their individual estimates.

Table 2: OLS results for the Pareto Gini

	<i>Dependent variable:</i>
	Gini, Pareto
Constant	0.0003 (0.001)
$\tau_t'$	-0.224** (0.084)
$\bar{\phi}_t^*$	0.040* (0.021)
Top 1% <sup>Gross</sup> <sub>t</sub>	1.668*** (0.096)
G:N <sub>t</sub>	0.100* (0.050)
Observations	13
Adjusted $R^2$	0.969
Residual Std. Error	0.002 (df = 8)
$F$ -statistic	94.055*** (df = 4 + 8)
Significance	* <0.1; ** <0.05; *** <0.01

Source: Statistics Finland, 1984, 1995, 2019a

It is easy to see that the gross share of the top 1% has by far outweighed the significance of the other regressors in the equation—the other statistically significant variable at the 5% level is this percentile’s tax rate itself. Obviously, it is somewhat of a bold estimate to assume that the top 1% would be as powerful a regressor for the Gini at the Pareto distributed tail. This estimate is therefore by far not the last word on the topic. What the results do reveal, though, is that the ‘weighted’ rate of profit,  $\bar{\phi}_t^*$ , nor the gross-to-net ratio of the top 1% have been significant enough at this chosen level, even though they are not far behind this threshold, either.

Given the already mentioned fact that it is somewhat ‘bold’ that the top 1% would be the only fractile to be affected by changes in taxation during this era, it is recommendable to try and see if other fractiles, too, have been affected by the 1993 tax reform. A quick way of doing this is by constructing a panel model, including observations from a number of fractiles. The following panel has been constructed for the top 5% of individual, percentile grouped taxpayers, covering the aforementioned years 1987–2000. Although a selection of the top 5% may be somewhat arbitrary, one should be able to discover the potential effects of the 1993 tax reform among the taxpayers within these fractiles, given the concentration of capital income and ownership at the very top. The regressors, or independent variables, remain the same, and the model aims to capture the effects of tax rate, gross share, profit rate and gross-to-net share ratios on the fractiles’ net share of income. Hence, for the  $i$ th fractile at time  $t$ ,

$$\text{Top } i\%_t^{\text{Net}} = \beta X_{it} + \alpha_i + \varepsilon_{it}, \quad (5)$$



in which  $i$  is the fractile,  $X_{it}$  is a vector of regressors (as mentioned),  $\alpha_i$  is the time-invariant individual effect of the  $i$ th fractile and  $\varepsilon_{it}$  is the individual, time-variant error term. As such, we are running a fixed effects model, in which the individual effect may correlate with the regressors in matrix  $X_{it}$ . The results are given in the table below.

Table 3: Fixed-effects regression results for the top fractiles' net share

	<i>Dependent variable:</i>
	Top $i$ th %, net share
$\tau'_t$	-0.002 (0.005)
$\bar{\phi}_t^*$	-0.006*** (0.002)
Top $i$ th %, gross share	0.858*** (0.009)
G:N $_t$	-0.046*** (0.004)
Observations	70
Adjusted $R^2$	0.996
$F$ -statistic	4748.358*** (df = 4 + 61)
Significance:	* < 0.1, ** < 0.05, *** < 0.01

Source: Statistics Finland, 1984, 1995, 2019a

As can be seen, the significance of the gross share again outstrips those of the other independent variables in the model. Although both the 'weighted' rate of profit and the gross-to-net ratio are significant at the 1% level, the model would have only little explanatory power without the gross share. What this shows is that top percentiles' net shares have tracked the gross shares rather closely, not departing from the latter in any significant way before or after the 1993 tax reform. Although this may seem somewhat obvious at first, the fact that these two ratios have not moved away from each other (or gotten closer, for that matter), does point out to the relative insignificance of taxation in explaining the changes in these top fractiles' or percentiles' shares. This argument is highlighted by the fact that the tax rate variable,  $\tau'_t$ , although negatively correlated with the fractiles' net share, is all but insignificant, with its standard error exceeding the estimate value. Interestingly, the profit rate variable,  $\bar{\phi}_t^*$ , is negatively correlated with the net shares. This is most likely due to the fact that the growth in the top 1% gross share has exceeded that in the other fractiles' shares so greatly that these shares have actually decreased in favour of this very top percentile.

The top percentiles' net income shares themselves have seemed rather 'unresponsive' to the profit rate variable. This may very well be due to changes in their composition. As can be readily obtained from Figure 3, wages and entrepreneurial income seem to have held the top 1% gross share relatively unchanged throughout the 1970s and early 1980s, with the growth in this percentile's gross share being based almost entirely on capital income. In the future, an addition of the gross shares' subcomponents (wages, entrepreneurial & capital income, and transfers) may increase the

explanatory power and statistical significance of  $\bar{\phi}_t^*$ .

## 1.4 Conclusions

The 1993 Income Tax act did substantially decrease the tax rates of many top-income individuals and households. However, neither this Act nor the state and municipal income taxation in general can be thought as necessary and sufficient for the changes in Finnish income inequality during the period at hand.

Pekka Kosonen (1987) has presented the key question of this paper accordingly:

[t]he crucial problem and source of debate about welfare state capitalism has been: in what ways does the expansion of the welfare state change the way capitalism functions? Is this expansion strengthening or weakening the social, moral and political structures of capitalism? Is it a supporter or a hindrance on economic growth and accumulation?<sup>30</sup>

Although this paper makes no attempt at answering to this question in its totality, it can be given that the changes in Finnish state income taxation seem to have been of secondary importance in determining the changes in the distribution as a whole. Therefore, it seems plausible that the temporary coincidence of the 1993 tax reform and the post-depression recovery of the mean rate of profit ( $\bar{\varphi}_t'$ ) and its 'appearance' to the businesses' & corporations owners and shareholders,  $\bar{\phi}_t^*$ , have lead many authors to conclude, in disregard of these simultaneous changes in profitability, that the reform is to thank (or blame) for the post-depression increase in income inequality. This being given, it can be argued, the state could have 'chosen' differently, and the outcome, increase in inequality, becomes a matter of principle, or a voluntary feat. This, however, is to ignore the (base) structural constraints every state faces when deciding upon taxation. To quote Hindess (1987),

the analysis of social conditions in terms of the realization of principles depends on an essentialism not unlike the one we have noted with regard to the market. To analyse social conditions or policies solely in terms of the realization of some general principle is to ignore the unavoidable complexity both of social conditions and of attempts to change them. Principles do indeed play a part in political life, but they do so always *in conjunction* with a variety of other concerns, interests and objectives. Political parties and governments act in terms of existing institutional conditions and social forces will invariably restrict their room for manoeuvre in certain respects. Some of those conditions may well be changeable as a result of political action, but many have to be regarded as more or less fixed, at least in the short term. *It makes no sense to analyse societies or parts of them in terms of the realization of general principles.* That point has serious implications for the use of principles in the evaluation of the success of policies and political strategies. If society cannot be organized as a realization of a single general principle, then governments and political parties *cannot reasonably be blamed for failing to bring about that change of affairs.*<sup>31</sup>

Given that a good number of the prominent authors on Finnish income inequality have either been unaware or ignorant of the changes in the underlying profitability of capital in the country, it is understandable that many have treated the 'functional' distribution of income either as a given, stationary variable, or susceptible to changes in profit payout incentives after the 1993 tax reform.<sup>32</sup>

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<sup>30</sup>Kosonen, 1987, p. 78; the author's translation.

<sup>31</sup>Hindess, 1987, pp. 9–10 (emphasis added).

<sup>32</sup>There have also been attempts to explain the changes in the functional income distribution via shifts in the bargaining power of workers *vis-à-vis* capital (for instance, Kyyrä, 2002; Sauramo, 2016).

## Appendix: The legal status of Finnish companies in 1984–2000

Table B.1 below shows that the share of limited companies had already increased during the late 1980s and early 1990s, prior to the 1993 Income Tax Act. In addition, major structural shifts have taken place *vis-à-vis* private businesses and limited partnerships, with the former becoming more prominent between 1993–4. This may have been due to the favourable tax treatment of non-incorporated businesses in relation to limited partnerships and other forms of business, as incomes withdrawn from private businesses were considered partially capital and partially wage income, with the share of the former determined by the imputed general rate of return over these businesses' net capital stock.

**Table B.1** The legal status of Finnish companies, not weighted by turnover or workforce, %.

Year	Private	Partership	Limited part.	Limited comp.	Co-operative	Other
1984	39.6	8.4	21.6	27.2	1.0	2.2
1985						
1986	36.3	7.8	24.0	28.1	0.8	2.9
1987						
1988	32.3	7.1	25.0	32.0	0.7	2.9
1989	30.3	6.8	24.9	34.8	0.7	2.5
1990	28.5	6.6	25.5	36.6	0.6	2.2
1991	27.2	6.5	26.3	37.5	0.6	1.9
1992	27.3	6.3	25.7	38.5	0.5	1.8
1993	25.5	5.8	24.0	42.5	0.6	1.7
1994	40.2	4.7	16.2	37.4	0.4	1.0
1995	39.6	4.4	14.9	39.3	0.4	1.4
1996	40.4	4.2	13.8	39.8	0.5	1.3
1997	40.3	4.0	12.6	41.2	0.5	1.4
1998	40.7	3.8	11.9	41.8	0.5	1.3
1999	39.8	3.7	11.6	42.3	0.6	2.0
2000	39.9	3.7	11.2	42.7	0.6	1.0

Source: Statistics Finland, 1990–2002

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