

Chapter 6: Rising inequality in the egalitarian Nordics

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Europe's income, wealth, consumption and inequality

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Abstract:

The chapter demonstrates that while the Nordic countries remain relatively affluent and egalitarian, inequality of disposable household income has been on the rise over the past 30 years. The increase in income inequality and relative income poverty has been strongest in Sweden and more modest in the three other countries. In Sweden, and, to a lesser extent, in Finland and Denmark, a reduced role for social transfers among the working age population has contributed to a decline in relative income levels enjoyed by the bottom quintile. Often in the wake of serious macro-economic downturns, politicians have reduced the generosity of social transfers to improve labour market incentives. Even if these reforms have had the intended effect on employment, the increase in earnings has not been sufficient to replace the loss of social transfers.

1 Introduction

The Nordic countries of Denmark, Finland, Norway, and Sweden are renowned for following an egalitarian path as they combine wage compression and a comprehensive welfare state with a high exposition to global competition. For decades, all four countries are considered to have the lowest levels of income inequality and the highest levels of welfare generosity in the world. No wonder then, that the notion of a specific society model entered the popular debate.

What should the model be called? People in Sweden and influential international observers called it the Swedish model. Danes and the Norwegians preferred to talk about a Scandinavian model, insisting that all three countries were basically alike. In the end, the name converged to the shorter and maybe more accurate Nordic model. The implicit quarrel over the geographic pointer in the name may be misplaced. Nobody actually created the model by intelligent design. It evolved, exhibiting a seemingly self-enforcing egalitarian development path in small open economies with strong social organizations.

When reliable comparative micro-data on income distribution started to become available from the mid-1980s,¹ the new data confirmed the image of Nordic egalitarianism.² Not only did the Nordic countries show low initial levels of income inequality and poverty, they also seemed to be unaffected by the trends towards increasing inequality and higher unemployment observed in other countries at the time, particularly the US and the UK.

Three major developments have recently changed income and inequality in all OECD countries: 1) new labour saving technologies; 2) more migration and integration in the world economy and in particular the “China shock”³ that followed from the entrance of China in the world market; 3) a series of crisis, notably the financial crisis from 2008, and the early 1990 crisis that hit Finland and Sweden severely.

The Nordic model should be well suited to face such challenges. It insures against the impact of shocks and give employers an edge in the technological race. The egalitarian wage distribution speeds up the process of creative destruction. High levels of public spending on education and training provide an adaptive work force. Coordinated wage bargaining emphasizes the needs of the internationally exposed industries when wages are set for all sectors.⁴

Yet, also the Nordic countries have experienced rising income inequality and they have all been affected by economic crises, and periods with soaring unemployment rates. The Nordic countries have also tried to recalibrate their social security systems with a view to limit expenditure growth and to improve labour market incentives.

Since institutions differ and details matter, we need to explore more precisely how the Nordic countries have changed as they responded to the same challenges that also other countries faced. In particular, we want to know if their responses might have raised inequality at bottom of the income distribution. Have also the Nordic countries coped with the economic and financial problems by an indirect redistribution

¹ Of particular importance was the establishment of Luxembourg Income Study (LIS).

² See Smeeding et al (eds.) (1990) and Atkinson and Smeeding (1995).

³ As coined by Autor et al (2016).

⁴ All these aspects are further discussed in Barth, Moene and Willumsen (2014).

of income from the worst off to the better off? And if so, have they done it to the same extent in all four countries?⁵

The model is no doubt under pressure. Unions become weaker and the export led wage setting is difficult to maintain as the employment in the exposed industries shrinks. Outsourcing and immigration tend to increase wage dispersion, eroding one of the success features of the Nordic model. A higher dispersion of income also tends to diminish the political demand for social insurance, weakening the second key feature of the Nordic model. Rising inequality combined with retrenchments in social insurance have been prevalent in OECD countries since the mid-1980s.⁶ The questions are whether the Nordic countries are approaching international inequality levels and joining in the race to the bottom in taxation and welfare spending?

To answer these questions we take a closer look at the recent development in income and inequality in each of the Nordic countries. We explore whether rising inequality at least partly can be the result of an erosion of the two pillars of the Nordic model: generous welfare state arrangements and wage compressing labour market institutions. In his last book, Tony Atkinson (2015) suggested that too little redistribution was the root of the recent rise in inequality among OECD-countries. Zooming in on the low-income tail of the income distribution, we find support for the claim that social security retrenchment is indeed contributing to more dispersion of household incomes in the Nordic countries.

Before we defend this claim, we set the stage by a summary of past developments of the Nordic countries, emphasizing that they consist of small, open and rich economies exposed to a high level of international competition. None of them was among the countries that were hardest hit by the financial crisis. Yet, all of them have had their doses of macroeconomic shocks, but it seems that the comprehensive welfare state and the highly coordinated wage setting system have been able to dampen the worst consequences that other countries have experienced.

Overall, the Nordic countries have high employment rates, generous welfare states, and low wage differentials. In the concluding remarks, we briefly discuss the viability of these characteristics of the Nordic model in the light of the increasing inequality that we document.

2. Income, productivity, and crisis

The Nordic countries are similar, but not identical.

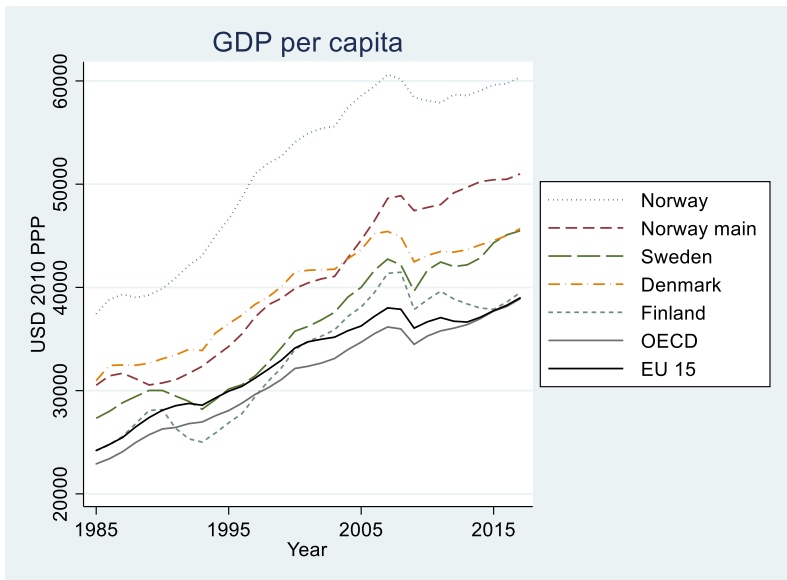
All four countries are small open economies. They rely heavily on international trade. Export as a share of GDP is 54 percent in Denmark, 38 percent in Finland and Norway, and 45 percent in Sweden (OECD Factbook 2014). The total population is small, slightly above 26 million people (UN 2015) with 5.7 million in Denmark, 5.5 million in Finland, 5.2 million in Norway, and 9.8 million in Sweden.

All four countries are among the richest countries in Europe. Figure 1 shows the development in per capita income (measured in constant Purchasing Power Parities) from 1985 to 2017. In 2015 Finland is at the average of EU 15, with Denmark and Sweden well above, and Norway even higher up, also when we disregard the direct contribution from the oil sector (mainland Norway, dashed line).

⁵ Due to data-limitations, our analysis covers only the four larger Nordic countries: Denmark, Finland, Norway and Sweden

⁶ See Barth and Moene (2014, 2016)

Figure 1. Per capita income in USD Purchasing Power Parities 1985-2017



All four countries have coordinated wage setting in the labour market. The separate histories of wage bargaining in each country differ somewhat. It is rather parallel in Sweden and Norway with strong labour unions and employers' associations, formed in the late 1800s and early 1900s, and with an export led wage coordination established during the crisis in the 1930s. The system has remained intact except for a short period after 1983 when Swedish employers withdrew from the central negotiations – just to recentralize the system a few years later. Denmark had developed a similar a bit less coordinated system earlier and more gradually than Sweden and Norway. Finland was on a more dramatic historical path with its civil war and the early defeats of the social democratic labour movement in the end of that war. Finland did not established coordinated wage bargaining before the end of the 1940's.

All four countries have high levels of public expenditures. Table 1 shows general government revenues as percent of GDP, and how the revenue is spent, also in percent of GDP, on Health, Education, and Social insurance. The last column shows the difference in percentage points between the (unweighted) average of the Nordic countries, and the OECD average.

Table 1: Government revenues and public expenditure on health, education and social protection in per cent of GDP.

	Denmark	Finland	Norway	Sweden	OECD- Average	Diff
Government revenues as % of GDP	54.8	56.9	48.8	50.2	43.8	8.9
Health	8.6	7.2	8.4	7.0	6.5	1.3
Education	7.0	6.3	5.5	6.5	5.3	1.0
Social protection	23.6	25.6	19.4	20.9	16.5	5.9

Note: Figures from OECD public expenditure data base.

Accordingly, the Nordic countries let almost nine percentage points more of their GDP go through the government sector. A large part of this additional revenue is spent on social insurance, almost six percentage points. The Nordic countries also spend more on public health and education.

All four countries have high employment rates. One might think, however, that countries with compressed wages and a generous welfare spending should have low employment rates. Small wage differences could be expected to reduce the demand for low skill workers, and a generous welfare state could be expected to reduce the supply of marginal workers. This is not the case for the Nordic countries: Employment rates are among the highest in world.

Figure 2 Employment population ratio, per cent

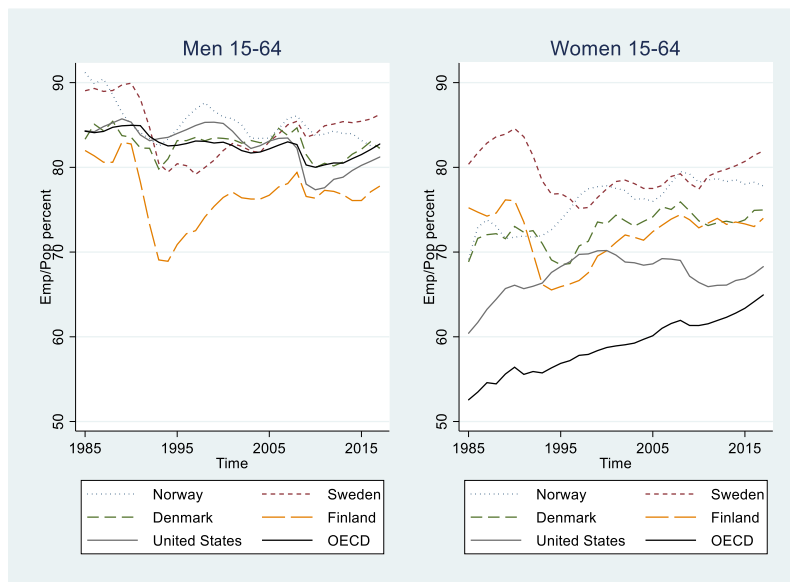
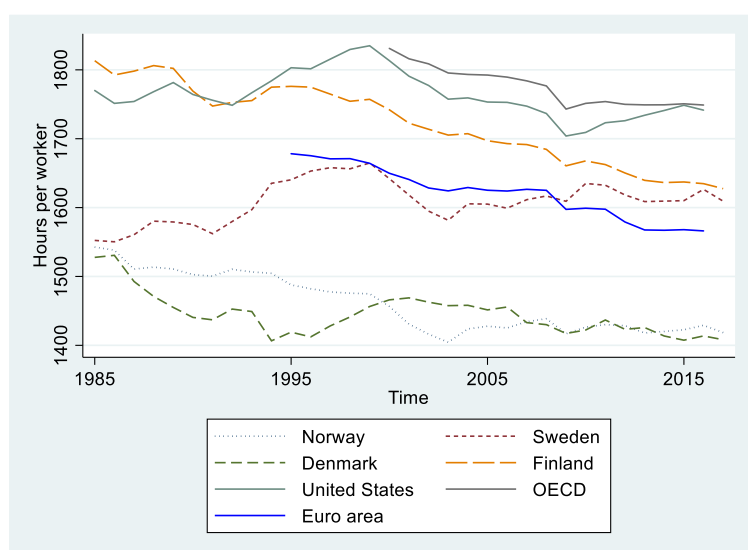


Figure 2 shows the employment population ratio for men and women of the age group 25 to 64 from 1985 to 2017. The figure shows higher employment rates for men in Denmark, Norway and Sweden compared to the OECD. Among women all the Nordic countries have higher employment rates than the OECD average. The US is closer to the OECD average than the Nordic countries. As in the figure for GDP per capita we see the decline in the early 1990s, in particular for Finland and Sweden. Throughout, Sweden and Norway have the highest employment rates. Sweden and Norway also saw a smaller decline in employment during the financial crisis, while Denmark took a larger hit. All countries have seen increasing employment rates after the crisis, with the exception of Norway, most likely due to the rise in unemployment following a fall in oil prices in 2014.

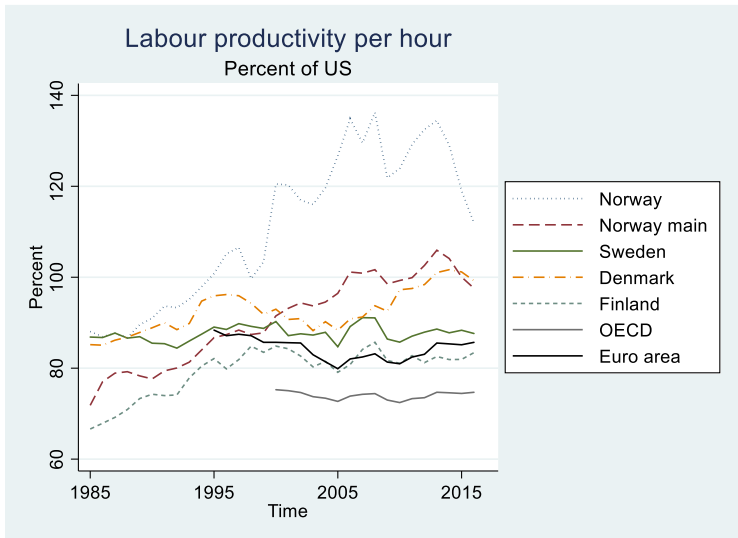
Figure 3 Annual hours per worker 1985-2017



Note: Data extracted on 24 Jun 2018 05:01 UTC (GMT) from OECD.Stat

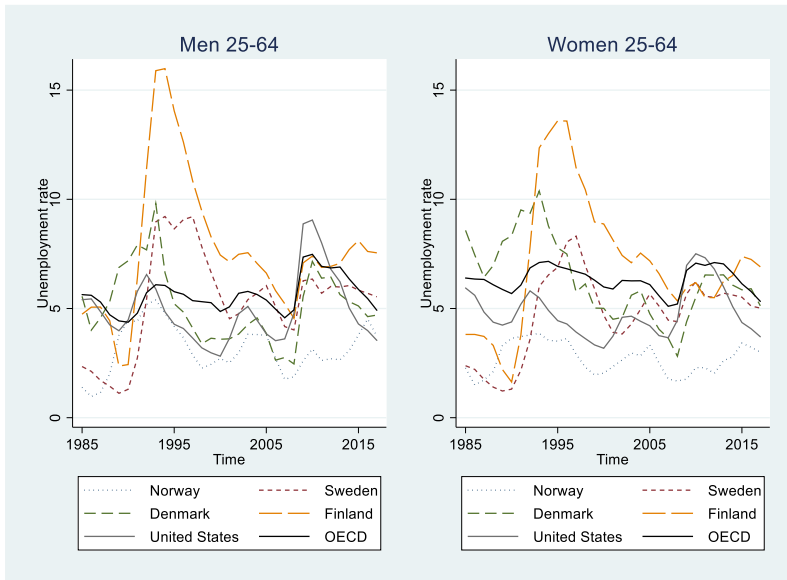
All four countries have low or declining levels of hours worked. Employment rates may hide large differences in hours per workers. Figure 3 shows hours per worker for the same time period. Denmark and Norway have less annual hours per workers than the other countries – and in particular compared to the high level in the US. Finland has seen a steady decline in hours per workers during the whole period. Combining these patterns with the GDP per capita measures observed in Figure 1 provides us with a picture of labour productivity in the four Nordic countries, measured as production per hour. Figure 4 shows the development compared to the US (US=100). Denmark and Norway display the highest level of productivity, mainland Norway has been more productive than the US since 2004, with Denmark following after 2013. Both countries have converged back to the US level by 2017. It appears that both Denmark and Norway has spent some of the productivity gain on reduced hours, while at the same time keeping employment rates high.

Figure 4 Labour productivity per hour 1985-2017. Per cent of US level.



All four countries have faced serious macroeconomic problems. In the period 1970-1990 Denmark was somewhat of a Nordic outlier with high persistent unemployment rates and severe deficits both on the state budget and in the balance of payment. In the early 1990s particular Finland and Sweden faced record-high unemployment rates. After a decade of recovery, all four countries were again negatively affected by the downturn in 2003, before the unemployment rates converged at very low levels in the years just before the advent of the financial crisis in 2008. The financial crisis hit all four countries, with Norway as a partial exception. In the decade that has passed after the onset of the financial crisis both Norway and Sweden have done relatively well in terms of economic growth, employment and unemployment rates, whereas Denmark and Finland have been struggling with sluggish economic growth. Norway experienced a recently relatively modest increase of unemployment as a result of a fall in oil prices.

Figure 5 Unemployment rates, ages 25-64

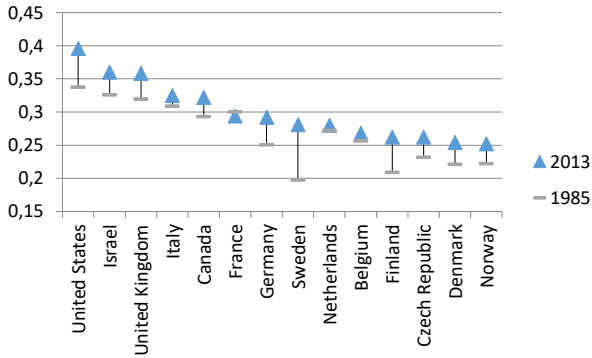


Source Data extracted on 14 Mar 2018 08:50 UTC (GMT) from OECD.Stat

3. Trends in income inequality

With these structural features as a background, we are now ready to compare how the Nordic countries perform as inequality rises in the rest of Europe. It is important to note that different data sources available are not perfectly aligned for various conceptual and methodological reasons. We thus explore the developments using several sources and methodologies. Figure 6 presents data provided by the OECD. It shows that the inequality in disposable income is on the rise in all Nordic countries, although from a lower level than in most other countries. The rise in inequality is particularly high in Sweden and lowest in Denmark and Norway.

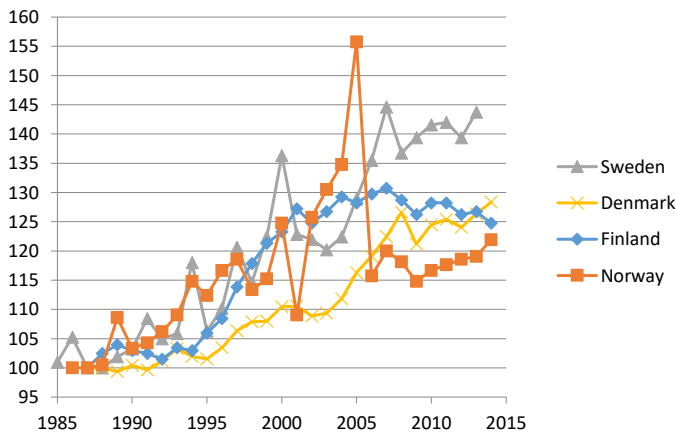
Figure 6 Gini-inequality Equalized disposable household income. Selected OECD countries 1985 and 2013.



Source: OECD Income distribution database

Figure 7 is based on data from the so-called Chartbook of Economic Inequality that in turn is based on national sources, showing time-series on inequality in disposable household income. Compared to the OECD-data, the Chartbook data build on less systematic efforts to standardise the measurement across countries. Yet, the internal consistency of the time-series for each country should be high. The figure gives the more detailed time trends where the starting point in 1985 is set equal to 100 for all countries.

Figure 7 Inequality trends in the Nordic countries. Gini-inequality in disposable equivalent household income. 1987=100.



Note: Source: The Chartbook of Economic Inequality. National data-sources

Apart from the Norwegian blip in 2005 (connected to a reform that would tax dividends at higher rates⁷) the Nordic countries show similar patterns of inequality in household disposable income with some non-trivial differences in magnitudes. The inequality went up in Sweden by almost 45% from the initial level in 1987, while the increase is smaller in the three other countries, ranging from 22% in Norway to 28% in Denmark with Finland in between at 25%.

In recent years there has been considerable interest in changes at the very top of the income distribution. How has the income share of the top one percent changed, and what role does increasing concentration of income among these top income earners play for the general increase in income inequality as measured, for instance, by the Gini coefficient? It has been shown, for instance, that almost all the increase in income inequality that has taken place in the US over the last 30 years can be attributed to the increased income share going to the top one percent.

In a recent paper Sogaard (2018) compares changes in the top income share between the US and the Nordic countries. He shows the well-known u-shape in top income shares over the last 110 years, with the US currently at 20 percent of total income going to the top one percent, and with the Nordic countries well below 10 percent to the top one percent. He calculates the approximate contribution to the Gini coefficient of top income shares in the respective countries.⁸ By comparing these calculated contributions to Gini-inequality and the actual, observed changes in the Gini coefficients, it is possible to indirectly assess the role played by increasing top income shares in explaining the general increase in Gini-inequality. The results are shown in table 2 for the US and the four Nordic countries.

Table 2: Change in top one percent income shares in percentage points, the contribution of this change to the overall Gini-coefficient, and actual (observed) change in the Gini-coefficient

Country	Period	Increase in top income share	Contribution to the Gini coefficient	Actual change in the Gini coefficient
USA	1980-2014	9.5	6.6	7.7
Denmark	1985-2015	3.4	2.9	7.6
Finland	1981-2014	3.2	2.6	4.2
Norway	1986-2011	3.4	2.8	3.7
Sweden	1980-2013	3.2	2.6	10.9

Source: Sogaard 2018: 77, see also Atkinson and Sogaard 2016.

We see that the rise in the income share going to the top one percent is rather similar in all the four Nordic countries (between 3.2 and 3.4 percentage points) and only about one third of the corresponding rise in top income shares observed in the US over the last 30 years (9.5 percentage points). In the US, this rise in top income shares itself corresponds to an increase in Gini-inequality of 6.6 Gini-points which is only slightly below the actual, observed increase in Gini-inequality by 7.7 points over the same period. By contrast, the rise in top incomes explains much less of the total increase in inequality among the four Nordic countries. This is particularly so for Sweden where the contribution from increased top

⁷ The planned tax reform lead firms to increase their dividends before the rise in taxes. The blip comes because this is registered as a high increase in capital incomes. The blip, however, is a temporary change in the way capital income is paid out, and it is not an indication of an increase in the level of capital income. The amount paid as dividends went up and is better registered than increases in share prices that would constitute the alternative route. Hence, the blip does not represent any fundamental change in the distribution of incomes.

⁸ To approximate the contribution to total inequality by the top one percent income share Sogaard uses the following formula: $G \approx G_{99} + (1 - G_{99})S$, where S is the top one percent income share and G_{99} is the income inequality measured on the remaining 99 percent of the population.

income shares is estimated to 2.6 Gini-points, while the actual, observed increase in overall inequality amounts to 10.9 Gini-points.

It seems safe to conclude from this that increasing income inequality in the Nordic countries is not exclusively a matter of increasing top income shares.

To gain additional insights we also turn to micro-data to discuss changes in the degree of redistribution and in the contribution to overall inequality from different income components. We use two data-sources: LIS and EU-SILC. We need to combine these two data sources because we want to cover a long time period from the mid-1990 to the mid-2010s, and EU-SILC is only available from 2004 while unfortunately there is no LIS data for Sweden after 2005.

Table 3 shows the development in Gini-inequality of equivalent disposable income from 1995 to 2013. With the exception of the numbers for Sweden in 2013, the numbers are calculated on the LIS data⁹. Consistent with the pattern of figure 5, all the countries have experienced an increase in inequality over the period. Finland and Norway have more growth between 1995 and 2004, while Denmark and Sweden are catching up with higher growth in the last period. The intra-Nordic differences in inequality trends that we saw in figure 4 and 5 are less pronounced in the LIS and SILC data although the ranking is roughly similar, and we lack a satisfactory explanation for this phenomenon. One should note that the relative high inequality score for Norway in 2004 is related to the even more pronounced spike we saw in figure 5 for 2005, and as discussed above it should be interpreted as somewhat artificial.

Consider also the bottom row of table 3. It shows that the widening of income inequality is happening also within the age group 30-59 in all the Nordic countries. Clearly therefore, rising inequality in disposable household income is not only a result of changes in the age composition of the population or a decline in living conditions among the young or the elderly. It represents real changes in the allocations of relative income to different groups in society with implications for measures of poverty as well.

Table 3 Gini-inequality. Household disposable income per person. General population and population age 30-59

	Denmark			Finland			Norway			Sweden		
	1995	2004	2013	1995	2004	2013	1995	2004	2013	1995	2005	2013 ^a
General population	0.208	0.218	0.245	0.210	0.260	0.255	0.231	0.274	0.243	0.213	0.228	0.250
Age 30-59	0.190	0.199	0.229	0.213	0.258	0.249	0.213	0.257	0.236	0.201	0.221	0.231

Source: Luxembourg income study (LIS). a) The figures for Sweden for 2013 are calculated from EU_SILC. Household disposable income per equivalent household member (EU-equivalence scale).

To focus on developments in the lower part of the income distribution, we have also, in table 4, calculated relative poverty rates using the EU “At risk of poverty” indicator, where individuals are

⁹ To compare, we also calculated the figures for Sweden for 2005 using the EU-SILC data. The numbers were very close to the LIS data, 0.231 for the general population, and 0.219 for age 30-59 in 2005.

classified as poor if their household income is below 60 percent of the national median in a particular year.

Overall poverty rates have risen in all four countries, with the exception of Norway. Not surprisingly, the poverty pattern follows the general pattern of income inequality closely, and a substantial part of the rising inequality is, in fact, located at the bottom of the income distribution. Again we find a similar pattern among individuals of “prime-age”, 30 to 59 years.

Table 4. At-risk of poverty rates by age group. Relative poverty (poverty threshold=60% of national median, EU equivalence scale)

	Denmark			Finland			Norway			Sweden		
	1995	2004	2013	1995	2004	2013	1995	2004	2013	1995	2005	2013 ^a
General population	9.6	10.6	10.4	7.1	11.8	12.9	11.4	11.0	11.9	9.1	9.7	14.8
Age 30-59	3.9	5.1	5.8	5.1	7.8	9.4	5.4	6.1	8.3	4.6	6.4	10.2

Source: Luxembourg income study (LIS). Swedish figures for 2013 are calculated from EU-SILC.

Obviously, the finding of increasing relative income poverty does not necessarily mean that the absolute income standards of the lower deciles have deteriorated, and cross-national differences do not accurately reflect differences in real living standards.

The relative poverty threshold is by far the highest in real terms in Norway where the increase in the median real incomes has been the largest over the last two decades. Therefore the stability of relative poverty rates in Norway indicates an increase in the real incomes of the least privileged strata of the population. Also in Denmark, relative poverty rates have remained rather low and stable over time, but here real incomes are much lower than in Norway and hardly any improvements have taken place over the last decade. By contrast, the very substantial increase in relative poverty rates in Sweden must be seen in light of the fact that median incomes have increased, also over the last decade. So, while the lowest income deciles are lagging behind, their absolute income levels have not declined.

These points are born out in the Appendix table A1 where we show poverty rates for the Nordic countries when the poverty threshold is anchored in the level of median incomes received in Sweden in 2004. According to this measure, poverty rates are dramatically lower in Norway compared to the other three countries and rapidly declining over time. According to this measure, “absolute” poverty is also on the decline in Sweden and Finland over the last decade, but not in Denmark.

Consistent with our interest in inequality, we find the pattern and trajectory of relative income poverty worth noting. It raises questions about how successful the welfare state actually is. Do the Nordic countries fail, more than before, to reach the poor and alleviate their situation of relative deprivation with social assistance and social security benefits?

We should also fill out the picture by some observations of the tendency of increasing wealth concentration in the other end of the income distribution. Measuring richness is similar to measuring poverty. The head count measure of poverty informs us about the number of people with a lower income than a certain threshold called the poverty line. In the same way, we can look at the number of extremely wealthy people, the number of people with a wealth beyond a certain threshold called the richness line.

To measure wealth as the relative number of wealthy people in the population - the head count measure of richness - should be as natural as measuring the relative number of poor people. In practice, of course, it is not obvious where the richness line should be set, just as it is not obvious where the poverty line should be. There is no objective distinguishing line, neither for extreme poverty nor for extreme richness.

To illustrate the head count measure of richness in the Nordic countries relative to others, we can use Forbes list of billionaires. It uses an implicit richness line of wealth equal to 1 billion USD. According to this measure, the US has 1.7 billionaires per million inhabitants, Denmark 0.9, Finland 0.9, Norway 2.0, Sweden 2.4. The head count measure of billionaires in other European countries is in the range of 0.5 to 1.3 per million inhabitants: For instance, Spain has 0.4, Italy 0.6, France, 0.7, UK 0.8 and Germany 1.2. So, compared to the rest of Europe there are more billionaires relative to the population in the Nordic countries.

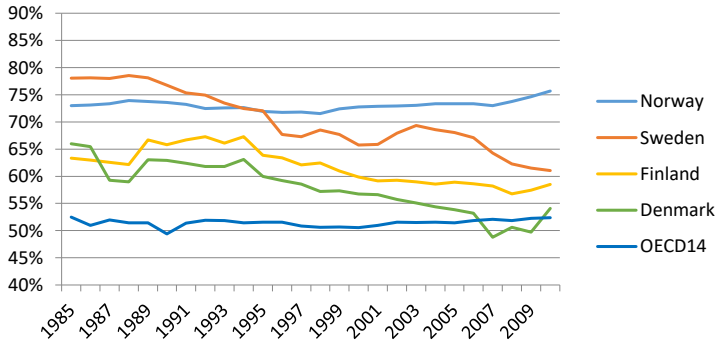
As seen, Norway and Sweden have even more billionaires relative to the population than United States. This feature is more thoroughly discussed in Moene (2016) who provides further evidence on the relative number of super rich, using different richness lines and different data sources. No doubt, the wealthiest persons in the US are clearly richer than the wealthiest persons in the Nordic countries. For example, the 0.1 percent richest in the US get 11 percent of the national income, while the 0.1 percent richest in Norway get 2.5 percent of the national income. Our basic point is about the level of the head count measure of richness. Relatively speaking, the upper-class in the Nordic countries seems to be larger than in most other countries – an indication that Nordic equality has special features that allow a rather larger fraction of the population to become super rich.

4. Developments in social security and labour market institutions

Since the mid-1980s, the social security systems of the Nordic countries have undergone significant changes. While all the Nordic countries used to provide a level of income security in case of sickness, unemployment, disability and old age that were clearly more generous than the level offered on average by the other OECD-countries, this is no longer the case to the same degree. Figure 8 shows the development over time in the average net replacement rates offered to an average full-time worker in the core social security programs – sickness benefits, unemployment benefits and old age pensions.

In the mid-1980s, all the four Nordic countries scored much higher than the average among the non-Nordic OECD countries. Social security was particularly generous in Sweden with an average net replacement rate of 78%. Norway came second with an average score of 73% followed by Denmark with 66% and Finland with 63%. From 1985 to 2010 the relative generosity of social security has declined in all of the Nordic countries except for Norway, while it appears to have remained stable on average in the non-Nordic OECD-countries. The drop in generosity is particularly strong in Sweden with 18 percentage points followed by Denmark (12 percentage points) and Finland (7 percentage points). In 2010 these three countries are still above the OECD-average in terms of social security generosity, but the differences are smaller than before. The trajectory for Norway is distinctly different with a stable net replacement rate at about 75% - in other words, at 22 percentage points above non-Nordic OECD average.

Figure 8: Average net compensation rates in core social security programs for workers with an average fulltime wage. The four Nordic countries compared to the average of 14 non-Nordic OECD countries.



Note: Average over sickness benefits, unemployment benefits, standard old age pensions and minimum old age pensions. Source: Comparative Welfare Entitlements Dataset 2

Figure 8 does not capture all aspects of the developments in social security over the last three decades. We know from other sources, however, that the generosity of minimum protection (social assistance schemes) shows a similar development (see Kuivalainen and Nelson 2012). In all the Nordic countries, including Norway, policy makers have in the last decades become more concerned about combating welfare dependency and ensuring that all possibilities for labour market integration are exhausted before social security benefits are granted to individuals in the economic active age brackets. As a result, not only the relative generosity of benefits has been reduced to a varying degree, but also the criteria for receiving benefits have been tightened and activation measures have been put in place in an effort to reinforce a work-first strategy. For Sweden, Ferrarini et al (2012) have documented the developments of reduced generosity and a more limited access to social security.

We believe therefore that a more comprehensive account would produce a similar picture as the one shown in Figure 8: Sweden has the largest negative change in the generosity and access to social security; Finland and Denmark have a more modest change from a lower level than in Sweden, while Norway has almost no change.

It is hardly a coincidence that the most dramatic decline in Sweden took place during and just after the profound economic crises in the beginning of the 1990s. Also in Finland, the decline appears to have gained momentum in the aftermath of the deep economic crisis of the early 1990s, when automatic stabilisers during the crisis had resulted in an increase in public debt. It is further worth noting that both in Sweden and in Finland, the periods of retrenchment aligns with periods of increasing wage inequality (see figure 10 below). Norway, in contrast, has healthy state finances for at least two reasons. The country has suffered only relatively mild economic setbacks over this thirty-year period; and it has benefitted from oil revenues since the 1980s. The healthy finances have in turn made it easier to maintain the relative generosity of social security.

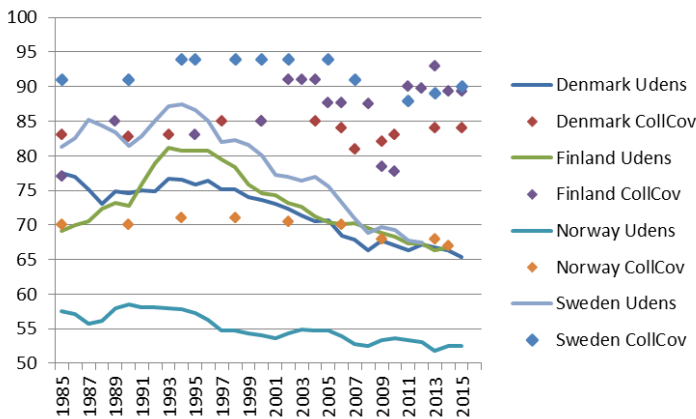
The more recent decline in social security generosity in Sweden started before the onset of the financial crisis. It is to a large degree driven by changes in the system of taxation introduced by the non-socialist

government that reduced taxes on labour income in an effort to make work pay (see Pedersen and Finseraas 2013).

The problems of the welfare state should be considered in connection with changes within the other cornerstone of the Nordic Model: the high degree of organisation of both the employee and the employer side of the labour market and the system of collective wage bargaining. Wage bargaining and coordination between the social partners are still strong features of the Nordic countries, as shown in Figure 9. However, in Denmark, Finland and Sweden, unions have been in steady decline. In Sweden union density has dropped from more than 85 percent to near 65 percent. Norway is the outlier among the Nordics, with a steady but lower union density, showing only a modest decline from 57 to 52 percent. The collective coverage of the wage settlements has been steadier than union density, with only a modest decline in Sweden and Norway.

Unionization is presumably important for raising wage levels at the bottom of the pay-scale and for mobilising political the support for welfare spending. Could it be that these institutional developments are partly responsible for the simultaneous increase in inequality, and if so, what is most important for the worst off groups, the decline in earnings or the retrenchment of welfare spending?

Figure 9. Union Density and Collective Coverage



Source Data extracted on 14 Mar 2018 08:56 UTC (GMT) from OECD.Stat

5. The sources of increasing inequality

To explore the possible importance of social security and changes in the distribution of pay and transfers, we now turn to a decomposition of the change in Gini-inequality. What is the contribution to change of changes in the different components of total disposable income: gross labour earnings (wages and self-employment income), income from capital, public transfers, and income taxes (a negative component in disposable income)?

The decomposition uses the so-called “natural” decomposition of the Gini-coefficient. A key role is played by the *concentration coefficient*. The concentration coefficient is a pseudo-Gini coefficient, with

the important difference that the ranking of the different income sources is decided by total disposable income, even when calculated on components of total disposable income. The concentration coefficient for a given component can be further decomposed into the product of the Gini-coefficient for this component, and a measure of correlation between this component and total disposable income (Lerman and Yitzhaki 1985).

Appendix table A3 provides the full decomposition of total inequality in 1995 and 2013. At each point in time the overall pattern is similar in all countries. Earnings and capital income contribute positively to inequality in total income, while social transfers and taxes are redistributive and contribute to reducing inequality. Gross labour earnings constitute the dominant positive component (making up between 110 and 130 percent of total disposable income) and it generally has a concentration coefficient that clearly exceeds the Gini-coefficient for disposable income. This means that earnings are by far the most important positive contribution to total inequality. Income from capital is more highly concentrated, but the contribution to inequality from this income source is rather modest because capital income takes up a relative small share of total disposable income (in the area of five per cent in all countries at both times). Social transfers are redistributive throughout because they are disproportionately distributed towards the poorer segments of the population. Taxes are also redistributive, resulting from a combination of a positive concentration coefficient and a negative share in total income.

We can extend the simple decomposition of the Gini-coefficient to analyse changes in Gini-inequality between two periods. Table 5 presents the decomposition of changes in Gini-inequality in total disposable income for prime age adults (age 30-59) in each of the Nordic countries between 1995 and 2013 (the formula used for decomposing income inequality changes over time is given in Appendix I).

Consider the first column: If an income component is more concentrated than disposable income, and its share in total disposable income goes up, the result is increased inequality in disposable income. For components that are less concentrated than total disposable income, an increase in the share contributes to lower inequality. Hence, the first column gives an estimate of the contribution from changes in the share that a component takes up in total disposable income to the change in the overall Gini-coefficient.

Consider the second column: If a positive income component becomes more concentrated over time, it contributes to increased inequality in disposable income. If a negative component, such as taxes, becomes more concentrated, it contributes to reduced inequality.

Consider the third column: Summing the first and second columns gives us the total contribution of each component to the observed change in the Gini of disposable income, and the sum of the contributions from each component is equal to the overall change in Gini-inequality between the two time-points.

The overall picture is clear. Even though the magnitudes of the increases were similar in the four countries over this period, the sources of the increase were quite different. In Denmark and Norway, increased inequality in gross earnings gave the largest contribution to the increase in the Gini of disposable income. Earnings inequality contributed close to nothing in this period to the change in inequality in Finland and Sweden, where retrenchments in the system of social transfers stood for the largest contribution to the increase in the Gini. Also in Denmark, changes in transfers contributed to increased inequality, albeit to a lower extent.

In Denmark, overall inequality in total disposable income increased with 0.036 points. The most important impetus comes from a stronger concentration of gross labour earnings, which alone is responsible for a contribution to change of 0.041 Gini-points. On top of that comes a contribution of 0.014 Gini-points from changes in social transfers, which is the net effect of a decline in the share of

transfers (contributing 0.027 Gini-points) and an increase in the concentration coefficient for transfers (contributing -0.014 Gini-points). Changes in the incidence of taxes contributes moderately to decrease inequality (-0.012 Gini-points), while changes in capital incomes (primarily lower concentration) contributes modestly to decrease inequality (0.007 Gini-points)

In other words, social transfers have become slightly more redistributive, but their share in the incomes of prime age adults has declined, adding up to a modest inequality increasing effect. Both changes in capital income and in taxes point in the direction of decreased inequality and they help to contain the inequality increasing impetus from changes in earnings and transfers.

Turning to Finland, we see a somewhat different pattern, even though the scope of change in the overall Gini-coefficient is about the same (at 0.034). Here a relatively strong decline in the share taken up by social transfers in disposable household income is the main source of increasing overall inequality among prime age adults. The lower share taken up by social transfers gives an inequality increasing contribution of 0.047 Gini-points. At the same time, however, social transfers have become more strongly concentrated among the poorest section of the population and this means that the total net effect of changes in social transfers is reduced to 0.027 Gini points. Changes in the other income components play only a marginal role.

The pattern is again very different in Norway. As for Denmark, gross labour earnings contribute to an increase in inequality of 0.041 Gini points. Yet, Norway is the only country where changes in social transfers have not led to an increase in inequality, but rather to a modest decline. Taxes have also alleviated the impact of higher gross earnings inequality.

Finally, the Swedish pattern is rather similar to Finland. The main contribution to increased inequality in disposable income comes from social transfers. The higher inequality, arising from changes in social transfers, is associated with a considerable decline in the share taken up by social transfers in the income packages of prime age adults. Since transfers tend to compress the earnings distribution, this decline goes together with higher inequality in disposable income. The gross effect is 0.048 Gini-points, but it is modified by a stronger concentration of social transfers among the lowest income brackets, resulting in a net effect of 0.033

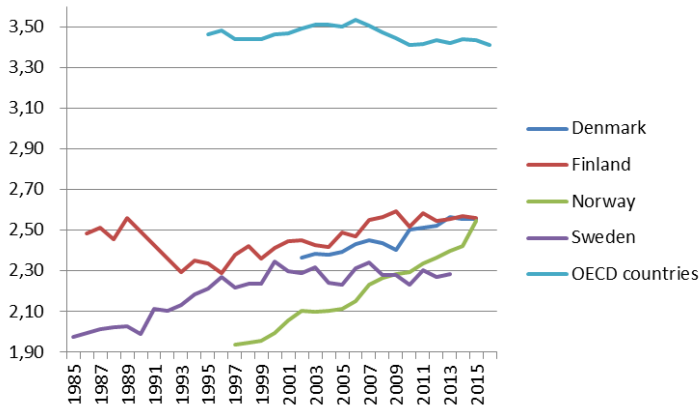
Table 5. Decomposition of change in inequality between 1995 and 2013; age 30-59

Denmark	Contribution to change 1995-2013		
	From changes in the share of the component	From changes in the concentration of the component	Total contribution to change
Gross earnings	0.000	0.039	0.041
Capital income	-0.002	-0.005	-0.007
Transfers	0.027	-0.014	0.014
Taxes	0.006	-0.019	-0.012
Disposable income			0.036
Finland	Contribution to change 1995-2013		
Gross earnings	0.004	0.002	0.005
Capital income	0.003	-0.002	0.001
Transfers	0.047	-0.023	0.027
Taxes	0.014	-0.012	0.000
Disposable income			0.034
Norway	Contribution to change 1995-2013		
Gross earnings	-0.004	0.045	0.041
Capital income	0.000	0.007	0.007
Transfers	-0.019	0.013	-0.007
Taxes	-0.001	-0.018	-0.019
Disposable income			0.022
Sweden	Contribution to change 1995-2013^a		
Gross earnings	0.005	-0.009	-0.004
Capital income	0.000	0.009	0.009
Transfers	0.048	-0.016	0.033
Taxes	0.008	-0.015	-0.008
Disposable income			0.031

The first column gives an estimate of the contribution from changes in the share that a component takes up in total disposable income to the change in the overall Gini-coefficient. The second column shows the contribution stemming from changes over time in the concentration coefficient for each particular component. The third column is the sum of the two first. Source: Luxembourg income study (LIS). a) Swedish figures for 2013 are calculated from EU-SILC. Income measures defined per equivalent household member (EU-equivalence scale).

In Denmark and Norway, we find an impetus for higher inequality from a higher concentration of earnings, while this is not the case for Sweden and Finland. This corresponds reasonably well with the pattern in wage inequality over the same period, as shown in Figure 10, showing the ratio between the 9th decile and the 1st decile of the gross earnings distribution among full time workers. Between 2000 and 2015 we find the largest increase in Norway and Denmark, a positive, but smaller increase in Finland, and a flat or slightly decreasing earnings ratio in Sweden. It appears that the early 1990's were a period of wage compression in Finland, whereas in Sweden the large increase in the earnings ratio occurred between 1985 and 2000.

Figure 10. P90/P10 gross earnings.1995-2015.



Note: Gross earnings of full-time dependent employees. Data extracted on 19 Mar 2018 19:07 UTC (GMT) from OECD.Stat

In all countries, with the exception of Norway, a distinct part of the rise in income inequality seems to stem from changes in social transfers. This is particularly visible for Sweden, where the increases due to retrenchments in transfers are larger than the total increase in disposable income inequality. Changes in capital income did not amount to much in these data.

Finally, in Table 6 we examine the household incomes of the bottom 20 percent of the gross labour earnings distribution. The pattern is clear for Denmark, Finland, and Sweden with a strong decline in the average transfer to the bottom 20 percent over this period, measured in percent of median gross income in the population. At the same time, relative gross labour earnings has increased somewhat. Yet, the growth in earnings does not compensate for the loss in transfers. All in all, the average disposable income of the bottom 20 percent among prime age adults has declined relative to the median disposable income of the population as a whole and the poverty rates at the bottom of the gross earnings distribution have gone up.

Norway displays a rather different pattern: a rise in transfers, and a decline in labour earnings, with an overall reduction as the end result. Poverty rates at the bottom quintile have increased in Norway as well, but more modestly than in Finland and Sweden.

Table 6. Household incomes received by the lowest earnings quintile, population aged 30-59.

	Denmark			Finland			Norway			Sweden		
	1995	2004	2013	1995	2004	2013	1995	2004	2013	1995	2005	2013 ^a
Relative mean transfers*	51,7	45,9	45,7	56,5	42,9	39,7	34,8	45,8	41,1	59	48,5	28,2
Relative mean earnings*	14,7	17,1	16,4	9,3	15,6	16,7	27,2	18,8	18,1	12,8	15,3	27,6
Relative mean disp income**	79,1	73,1	71,1	78,8	72,7	66,1	75,3	74,3	67,4	80,8	73,9	60,5
Poverty rate	18,7	26	28,4	22,6	39,3	45,1	26,2	28,9	37,6	19,3	30,2	50,0

*In percent of median gross income in general population ** In percent of median disposable income in general population

Source: Luxembourg Income Study. a) Swedish figures for 2013 are calculated from EU-SILC. Income measures defined per equivalent household member (EU-equivalence scale).

Even though there are some divergences across the Nordic countries, it is clear that there are important changes in the generosity of the Nordic welfare state. It moves in the direction of how social protection works in other countries. The consequences are particular evident for the worst off groups that the defenders of the Nordic model used to be so proud to support.

6. Concluding remarks on the viability of the model

The Nordic countries are small open economies renowned for combining egalitarian labour market institutions and comprehensive welfare states with highly productive and competitive economies. As we have seen, the Nordic countries continue to perform comparatively well in terms of labour force participation and employment rates, the general level of prosperity, productivity and economic growth. Even if each of the Nordic countries have experienced economic recessions and periods with sluggish economic growth, they have – at least so far – shown a remarkable ability to recover and return to a persistent growth path. While we do see increasing income inequality in the Nordic countries and increasing relative income poverty, it generally happens in the context of overall economic growth. While some segments tend to fall behind in relative terms, they do not often suffer absolute declines in material well-being.

One of the keys to the Nordic success-story is that labour earnings compression and generous welfare states appear to reinforce each other. Barth and Moene (2016) labelled this the “equality multiplier” where equality creates more equality. But the multiplier also works the other way. When inequality of labour earnings goes up, the generosity of the welfare states comes under pressure. Crises tend to reinforce this “inequality multiplier” as both a majority of voters and politicians feel that they cannot afford generous welfare states in periods of low income and large insurance pay outs. This mechanism can help understand why Denmark, Finland, and Sweden are trimming down their welfare spending, while Norway has not yet implemented the same level of retrenchment.

The Nordic countries still feature low levels of income inequality relative to other countries. The latest decades have shown, however, that factors that tend to increase the dispersion in market incomes are felt in the Nordic countries as well.

The underlying forces that tend to erode wage equalizing institutions in the labour market are at work also here. These factors, together with economic downturns, put pressure on the generosity of their

welfare states. Retrenchment of the social transfers weakens the bargaining power of the low-paid workers, which in turn may fuel further inequalities in market incomes as well.

As we have shown, inequality of disposable household income has been on the rise in the Nordic countries over the last 30 years. The rise came at different times and with somewhat different intensities. Sweden has had the highest and most consistent growth in inequality overall, while Finland had a particularly large growth from 1995 to 2000. Norway, in contrast, had an increase in inequality for the whole period from 1985 to 2005, but the rise in Denmark was particularly strong between 2000 and 2005. In all the Nordic countries with the partial exception for Sweden it seems that the growth in income inequality has tapered out somewhat in the last decade.

Similar increases in inequality have occurred in most OECD countries. Coming from a low level of inequality, the Nordic countries have not yet caught up with the inequality in the rest of the world. The Nordic countries remain among the most egalitarian countries. Yet, the period since 1990 has demonstrated that even with earnings compressing wage bargaining and high welfare state spending, the Nordic economies are susceptible to some of the same underlying forces that have raised inequality in the rest of the developed world.

The rise in inequality of disposable income is associated with both more inequality in gross labour earnings, and a retrenchment of the social transfers. In Sweden, the rise in the inequality of labour earnings came early, most likely because of the dismantling of the centralized bargaining system in the early 1980s. Denmark and Norway followed suit in the late 1990s and early 2000s without much change in the bargaining system. In Finland, the growth in earnings inequality followed a period of compression in the early 1990s.

What is to be blamed, the rise in earnings inequality or the retrenchment of the welfare state? The answer is both. From a descriptive point of view, it is fair to say that from 1995 to 2015, the rise in gross labour earnings inequality provided a *major impulse* to inequality in disposable income only in Denmark and Norway. In Finland and Sweden, the retrenchments in the generosity of the social transfers were the main impulse behind the rise in inequality of disposable income. Denmark, actually, had both a major rise in earnings inequality and a major decline in welfare generosity. The concurrent occurrence of an increase in gross earnings inequality and a decline in welfare generosity is not a big surprise, and most likely the two developments feed on each other. This pattern has been evident in many other European countries as well, who have experienced a process of institutional reciprocity where higher gross earnings inequality contributed to lower political demand for welfare generosity, which in its turn fuelled more earnings inequality (Barth and Moene 2014).

Why do we have these differences across so similar countries? Finland and Sweden came out of a severe crisis and leading politicians accepted the idea that their countries could not afford so generous welfare spending any longer. Their views gained support from considerable parts of the population. Decisive voter groups may have felt that they were lagging behind in the average income rise, and that they could not afford the high taxes needed for the high public spending. The voters may have felt that the welfare state came in competition with other pressing needs for higher disposable incomes. A more general decline among the social democratic parties may have added to this momentum.

The formation and development of the Nordic model has been one of gradual adaptations rather than of large big-jump transformations. Dissolving the model may mirror its rise. Yet, history also teaches us that most of the planned funerals of the Nordic model of the past have been cancelled, because the old man, after all, was still alive.

One reason why the Nordic model is not yet dead is that the Nordic countries enjoy high levels of trust and social cohesion within and across groups with the encompassing organizations of both workers and employers. This potential for collective action is stabilizing the economic and political system. It may also act as a countervailing power against the rising inequality that we now see. Thus, to understand whether Nordic egalitarianism is actually dissolving or not, it may not be enough to observe, as we have done above, that the arrows are pointing in the wrong direction according to the main historical emphasis of the model. Any investigation of the possible decline of the model has to start from the success of the arrangement that may give inspiration to self-correction also today.

Much of the behaviour of the organizations is still anchored in a common understanding of what is the real economic situation (via routine consultations), and what are the required responses to achieve common goals. On the individual level, many people still follow the social ethos to make his or her contribution to society, in full expectation that others do the same. This kind of consonance, cooperation and reciprocity may again stabilize the model. Yet in the age of welfare retrenchment and union decline, many people doubt that the arrangement will work equally well in the future as it has done in the past.

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Appendix I: A procedure for decomposing changes in the Gini-coefficient over time.

It is well known that the Gini-coefficient for total disposable household income (G) at time t can be decomposed according to the following formula, where C_k is a so-called concentration coefficient for the k^{th} component and S_k is the share in the total income package taken up by the same component:

$$G_t = \sum S_{kt} C_{kt}$$

The concentration coefficient is a pseudo-Gini coefficient with the important difference that the ranking of income units is decided by total disposable income. The concentration coefficient can be further decomposed as the product of the Gini-coefficient proper for this component, and measure of correlation between this component and the total income package (Lerman and Yitzhaki 1985).

If a component is negatively correlated with the distribution of total disposable income, it will have a negative concentration coefficient and this means that it contributes to reduce overall inequality – unless we are talking about a component with a negative share (like income tax).

It has been pointed out that the “natural” decomposition of the Gini-coefficient in its most simple form has serious weaknesses. A uniform transfer to all income units will appear to make no contribution (either positive or negative) to overall inequality since the concentration coefficient will be zero. In reality of course a uniform transfer is highly equalising, but this effect will only show up indirectly as a decrease in the shares taken up by the other, inequality enhancing income components and hence a decrease in *their* contributions to overall inequality. In order to overcome this problem, the formula can be extended to give the elasticity of overall inequality with respect to marginal changes in the size of each specific component (Lerman and Yitzhaki 1985).

The “natural” decomposition of the Gini-coefficient can also be extended to provide a decomposition of changes in total Gini-inequality between two time-points (G_1 - G_2) according to the following formula (Hoffman 2013):

$$\left[\frac{1}{2} (C_{k,1} + C_{k,2}) - \frac{1}{2} (G_1 + G_2) \right] \Delta s_k + \frac{1}{2} (s_{k,1} + s_{k,2}) \Delta C_k$$

Also this formula overcomes the weakness of the natural decomposition by capturing the redistributive effects of expanding a uniform income component (and the in-egalitarian implications of a corresponding cut back).

The first part of the expression measures the role played by changes in the relative size of the component. It says that an increase in the share of income component will contribute to increasing inequality if the concentration coefficient for this component is higher than the overall Gini-coefficient. The second part measures the contribution to the overall change from changes in the concentration of the component. It says that any increase in the concentration of a component will lead to higher level of inequality in total income – unless we are talking about a negative income component (read: a tax) –, and that the size of the contribution depends on the relative size of the component.

Appendix II: Tables

Table A1. Absolute Poverty (Poverty rates using a poverty threshold anchored in median incomes in Sweden 2004)

	Denmark		Finland		Norway		Sweden	
	2004	2013	2004	2013	2004	2013	2004	2013
General population	4.0%	4.8%	11.5%	6.6%	3.8%	2.1%	9.1%	5.4%
Age 30-59	2.3%	2.7%	7.6%	5.5%	1.9%	0.7%	5.6%	4.0%

Note: Poverty thresholds adjusted for country specific inflation rates. Source: EU-SILC.

Table A2: Gini inequality in market income, gross income (including transfers) and disposable income (net of taxes). Difference from income component to the next. Household income per member.

	Denmark				Finland			
	1995		2013		1995		2013	
	Level	Change	Level	Change	Level	Change	Level	Change
Market income	0.350		0.361		0.399		0.382	
Gross income	0.232	-0.118	0.262	-0.099	0.263	-0.136	0.292	-0.090
Disposable income	0.190	-0.042	0.229	-0.033	0.213	-0.050	0.249	-0.043

	Norway				Sweden			
	1995		2013		1995		2013	
	Level	Change	Level	Change	Level	Change	Level	Change
Market income	0.321		0.370		0.369		0.328	
Gross income	0.247	-0.074	0.276	-0.094	0.238	-0.131	0.264	-0.064
Disposable income	0.213	-0.034	0.236	-0.040	0.201	-0.037	0.231	-0.033

Source: Luxembourg Income Study and EU-SILC (Sweden 2013). Income measures defined per equivalent household member (EU-equivalence scale).

Table A3: Decomposition of inequality in disposable income 1995 and 2013. Age 30-59.

	Percent of Disposable Income	Concentration coefficient	Contribution	Percent of Disposable Income	Concentration coefficient	Contribution
Denmark	1995			2013		
Gross Labour Earnings	123.23	0.300	0.379	125.59	0.331	0.417
Capital Income	5.46	0.584	0.032	4.94	0.480	0.024
Transfers	24.32	-0.235	-0.057	18.46	-0.299	-0.055
Taxes	-56.01	0.290	-0.162	-48.99	0.325	-0.160
Disposable Income	100.00	0.191		100.00	0.225	
Finland	1995			2013		
Gross Labour Earnings	109.92	0.338	0.371	111.90	0.341	0.382
Capital Income	5.90	0.632	0.037	6.54	0.613	0.040
Transfers	29.61	-0.117	-0.035	16.89	-0.216	-0.036
Taxes	-45.44	0.353	-0.160	-35.33	0.389	-0.137
Disposable Income	99.99	0.213		100.00	0.248	
Norway	1995			2013		
Gross Labour Earnings	116.66	0.283	0.330	111.96	0.322	0.361
Capital Income	5.70	0.561	0.032	5.56	0.695	0.039
Transfers	14.49	-0.208	-0.030	19.48	-0.131	-0.026
Taxes	-36.86	0.324	0.120	-37.10	0.376	-0.139
Disposable Income	99.99	0.213		99.99	0.235	
Sweden	1995			2013		
Gross Labour Earnings	111.82	0.313	0.350	117.66	0.305	0.359
Capital Income	5.03	0.373	0.019	5.17	0.548	0.028
Transfers	27.25	-0.121	-0.033	14.30	-0.196	-0.028
Taxes	-44.10	0.306	-0.135	-37.12	0.344	-0.128
Disposable Income	100.00	0.201		100.01	0.231	

Source: Luxembourg Income Study and EU-SILC (Sweden 2013). Income measures defined per equivalent household member (EU-equivalence scale).