Inequality in Finland: 1987–2021

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1. Executive summary

Employment, wages, hours and individual earnings

The deep recession in the early 1990s had a sharp impact on employment in Finland. During the recession the employment rates of prime-aged women and men fell from approximately 80% to 67% for both sexes, and unemployment rose fourfold from 5% in 1990 to 20% at its peak in 1993. Since then, employment rates have steadily increased to around 78% in 2021 for prime-aged women and men. Gender differences in employment among prime-aged workers are small. However, women have lower average working hours as they work part-time more often than men.

The 1990s recession created persistent long-term unemployment. Even as unemployment rates recovered during the late 1990s and early 2000s, unemployment remained at a new, higher level. The global financial crisis in 2008–09 again increased unemployment rates, albeit relatively little compared to the 1990s recession, from 9% to 11%. The following decade was a period of sluggish economic growth in Finland, and unemployment fluctuated around 11%. During 2018–19 unemployment went down to 9%, but in 2020 it peaked again at 13% as a result of a mass of furloughs during the COVID-19 crisis. Since the 1990s recession, the unemployment rate has not returned to the level seen in 1987–90.

Over the period 1987–2021, the overall education level has increased. While in 1987 44% of 25–60-year-olds had no further education after compulsory schooling, by 2021 this figure had fallen to 14%. In 1987 women and men had very similar education levels, but by 2021 women had surpassed men as fewer women had only compulsory education (ISCED 0–2; 10%, compared to 17% of men), an equal share had a medium-level education (ISCED 3–6), and more women had the highest-level education than men (ISCED 7–8; 20%, compared to 14% of men).

Median hourly wages increased by 27% in real terms between 1995 and 2008, but only by 9% between 2008 and 2021. The median wage was €19 in 2021. Women's hourly wages are approximately 82% of men's. Inequality in wages has been very stable, the Gini coefficient rising slowly from 0.17 in 1995 to 0.19 in 2006 and remaining there until 2021. Women have a more compressed wage distribution than men, but inequality in women's wages has increased more than men's. Average working hours fell by 1.8 hours during 1995–2021, due to increases in part-time work. Women, and especially low-educated women, work part-time more often than other groups, and their working time reduced by 3 hours between 1995 and 2021.

Median annual individual earnings grew by 27% in real terms from 1995 to 2008 but only by 10% between 2008 and 2021, being €37,000 in 2021. Women's median earnings are between 77% and 80% of men's earnings, despite their higher education level. The median earnings of high-educated women have slightly converged to the earnings of high educated men, from 75% to 79% of men's earnings. The trend is opposite for low-educated women, whose median earnings decreased from 81% to 74% of men's earnings with the same education level. The Gini coefficient has remained almost unchanged over the period at about 0.32. Women's earnings inequality has increased more than men's (from 0.27 to 0.30) but does not reach the higher level of inequality for men (0.32).

Among 25–60-year-old workers, on average 14% were self-employed during 1990–2021. Men are more often self-employed than women, and there is a negative correlation between education level and the probability of being self-employed.

Labour market institutions

Labour unions have traditionally had a strong role in the Finnish economy. Since 1970, labour union density has been above 60%, peaking at 80% in the early 1990s and returning to above 60% in the 2010s. Labour unions and employer organisations negotiate wage increases and minimum wage levels for particular industries and jobs. There is no general minimum wage in Finland. Wage contracts are extended to all workers in sectors where at least 50% of workers are union members,

resulting in a collective agreement coverage rate above 60% since the 1960s, and above 80% since the late 1980s. In retail trade and construction, the sectors' lowest wage categories were around 70% of median wages in the sector, and between 10% and 20% of workers received a wage close to this 'industry minimum wage'.

In the 1990s recession, the share of benefit income in gross income rose for all income groups, and most strongly for the bottom income quartile. After the recession, by the year 2000 the share of benefits had fallen to 1990 levels in all income quartiles except the lowest, reflecting the prevalence of unemployment after the recession. The share of direct taxes paid from gross income was affected by the dual income tax reform in 1993, which separated the taxation of earnings and capital. Average tax rates have reduced since the reform, and more so for the highest-income group. Taxes on earned income were later also reduced, and the share of direct taxes paid fell for all income groups in the 2000s, and then increased slightly in the 2010s.

Household incomes

The share of married/cohabiting individuals aged 25–60 has decreased steadily over time, from 78% in 1987 to 65% in 2021. This development has been faster for those with low levels of education (ISCED 0–2), for whom the share fell from 76% to 53%. For men there is a clear income gradient for being married/cohabiting, and it has become steeper over time.

The share of individuals aged 25–60 living in single adult households has increased the most for low-educated men and women. Furthermore, the share of individuals living with children has decreased the most for low-educated men. The trend in household composition is more stable for the highest-educated individuals. The share of individuals in a household where at least one member is in work decreased from 92% in 1990 to 80% in 1993. In the decades since the recession, the share has slowly increased but has not reached the 1990 level, being 87% in 2021.

The trend of working households' disposable income is very similar to the trend of earnings, although taxation and benefits smooth the trends of disposable income. Median disposable household income grew by 42% in real terms from 1995 to 2008, but by only 8% from 2008 to 2021. The gap in disposable income between working and non-working households has widened since the early 1990s. During the recession years of the early 1990s, disposable household income declined for all education groups. In contrast, the financial crisis in 2008–09 did not reduce disposable household income, even though GDP fell considerably in Finland. During the COVID-19 crisis in 2020, median disposable household income of 25–60-year-olds fell by 1%, recovering the following year.

Disposable household income inequality among the 25–60-year-olds increased considerably after the early 1990s. The Gini coefficient of disposable income increased from 0.20 in 1990 to 0.26 during 2003–07, and has remained close to this high level since then. Income shares of the top 1% of income earners more than doubled from 2.8% in 1990 to 6.1% in 2004. From this peak, the top 1% share reduced to 3.7% in 2014 and then rose sharply again to 5% in 2019. Relative poverty increased more slowly, from 6% during 1990–95 to a peak of 11% in 2010 and averaging 10% since the financial crisis. The COVID-19 crisis did not have any clear impact on these inequality measures, but naturally the longer-term effects of the crisis are not yet visible in our data.

Inequality between migrants and natives

Immigration is a relatively recent phenomenon in Finland. In 1987, only 0.6% of the population aged 25–60 were immigrants, and the share rose to 11% in 2021. Immigrants residing in Finland in 2019 had poorer labour market outcomes than natives despite quite high education levels among the migrant population. Annual earnings were approximately 20% lower than those of the native population, as was disposable household income.

2. Institutional background

Finland is a Nordic-style welfare state, providing a wide safety net financed by progressive taxation. Here we present some key features of Finland's social security, public services and tax system, focusing on working-age individuals.

Benefits for working-age individuals and families

Most benefits are provided through the national Social Insurance Institution.

Unemployed individuals can receive unemployment benefits through the Social Insurance Institution or unemployment funds. Earnings-related unemployment insurance (UI) is available for those who have made voluntary contributions to a UI fund. For individuals who are not members of UI funds, the Social Insurance Institution provides a flat-rate benefit (basic unemployment allowance). For individuals who exhaust the maximum duration of these benefits, or who recently entered the labour market, the Social Insurance Institution provides a flat-rate benefit (labour market subsidy), which has unlimited duration. The monetary amount is equal to the basic unemployment allowance but is means-tested. Each of these benefits is increased for unemployed individuals with dependent children, and for those participating in active labour market programmes. Partial benefits are available for individuals with part-time jobs, and since 2014 there has been an earnings disregard in place, reducing the effect of concurrent earnings on the benefit level. In addition, means-tested housing benefits and social assistance are available for the unemployed.

The replacement rate of earnings-related UI benefits thus depends on many factors, and the detailed rules have changed numerous times. In the 2000s, the average realised gross replacement rate of median-wage unemployed individuals fluctuated around 55–60% of previous wage.[1] The replacement rate declines rapidly as the past wage increases, but benefits are not capped from above.

For working families on low income, means-tested housing benefits and social assistance are available. Besides the family's income and assets, these benefits depend, for example, on housing type and costs, and family size. Some municipalities provide low-cost rental apartments on social grounds. Social assistance was provided by municipalities until 2016, since when it has been managed by the Social Insurance Institution. However, supplementary and preventive social assistance is provided by municipalities, and since 2023 by the larger regional entities called 'wellbeing services counties'. These benefits are intended to help with special circumstances, for example, to prevent individuals from becoming long-term dependent on social assistance.

Working-age individuals (both working and unemployed) who fall ill can receive sickness benefits, which are earnings-related (gross replacement rate approximately 70%), and the maximum duration is 1 year. Many employers also pay full salary for the first days or months of the sickness spell. If the illness continues beyond the maximum duration of sickness benefits, the person can, for example, apply for disability benefits, which can be granted as full-time or part-time, and as temporary or permanent. For those with sufficient work history, the pension provider provides earnings-related disability benefits, and for those with short work histories, the Social Insurance Institution provides flat-rate benefits. Rehabilitation services are also available through both institutions.

Families with under-age children are eligible for child allowance. Child allowance is universal, and the level increases with the number of children. Finland also has a job-protected parental leave scheme for fathers and mothers with earnings-related benefits (gross replacement rate approximately 70%). During the time period studied in this report, total parental leave (maternity, paternity and parental leave) has been above 40 weeks, and the main increase has been seen in paternity leave, from shorter schemes to a paternity leave of 9 weeks. In 2022, total parental leave increased to 60 weeks.

[1] We thank Heikki Korpela (University of Helsinki) for these calculations.

Most benefits are taxable as earnings under the progressive income tax, but benefit income is not subject to the same deductions that apply to earnings income. Tax-free benefits include social assistance, housing benefits, and the universal child allowance.

Public services

Children's daycare is publicly and privately provided, and heavily subsidised in both cases. A parent who cares for children below 3 years old at home instead of in a daycare centre (after exhausting their parental leave) can receive child homecare allowance. Like parental leave, this scheme is also job-protected.

The school starting age is 7, and a year of pre-school is mandatory at age 6. All pupils go through a uniform 9-year comprehensive school, that is, there is no school tracking. Earlier, mandatory education ended at age 16, but in 2021 this was raised to 18 years, meaning that all students at least start in upper secondary education, or go through other educational programmes (e.g., apprenticeship or preparatory education). Education is free at all education levels. Virtually all comprehensive education is publicly provided, and the few private providers are bound by the same national core curriculum as the public institutions. Private schools are not allowed to collect study fees or to make a profit.

Both academic and vocational fields are strong in Finland. Of pupils who finish compulsory education (9th grade) and continue to upper secondary education, 55–60% go to academic upper secondary schools, and 40–45% to vocational schools (Statistics Finland, 2022). In higher studies, academic universities offer academic education and universities of applied sciences offer vocational education. Before the 1990s, this higher vocational education was scattered across many small institutions, but in the 1990s vocational education was reformed. New institutions were created and training from old institutions concentrated into fewer new institutions. This reform is also important for the interpretation of results in this report. Vocational degrees (e.g., nursing, civil engineering) were previously classified as ISCED 5, but in the reform they were classified as ISCED 6, even though the content and extent of the degrees did not change. We therefore always consider ISCED 5 and 6 together (in the middle-education category ISCED 3–6).

Furthermore, it is noteworthy that virtually all university students complete a master's degree (ISCED 7), so the middle education category in this report, ISCED 3–6, in practice entails academic and vocational upper secondary schooling (ISCED 3), specialist qualifications (ISCED 4) and lower-level vocational degrees (formerly ISCED 5, then ISCED 6). Few university students only complete the bachelor's degree (ISCED 6) without continuing directly to complete the master's degree. The highest education category in this report, ISCED 7–8, then consists of academic university degrees (ISCED 7) and higher vocational degrees (ISCED 7), in addition to doctoral degrees (ISCED 8).

Public healthcare is universal, and public health services are either free of cost or involve a heavily subsidised user fee. These services are provided at the regional level: municipalities until recently, and since 2023 the new larger regional entities titled 'wellbeing services counties'. Private healthcare is widely available, and there is a small public subsidy to its use. Employers have to offer occupational health services to their employees via private healthcare providers, and this is also publicly subsidised.

Taxation

The state and municipalities both collect taxes on individual incomes. In state taxation earnings are subject to the progressive income tax, and capital is taxed separately at a two-bracket flat rate. This dual income tax system was implemented in 1993, before which all income from earnings and capital was taxed together at a progressive rate. In 1990–2004 a full imputation system (*avoir fiscal*) was applied to the taxation of dividends to avoid the double taxation of dividends. At first the capital income tax rate was flat and equal to the corporate tax rate. In 2012 the tax was changed to mildly progressive with two tax brackets. Municipalities tax earnings income at a flat, municipality-specific rate. Income taxation is levied at the individual level.

Due to the progressiveness of the state income taxation and the deductions in taxable income, people on low incomes pay very little or no state taxes. Municipal taxes are flat-rate but also involve deductions, which ensure that low-income individuals do not pay municipal income taxes.

All workers pay social insurance premiums from their salary towards social insurance, including pension, unemployment and sickness insurance.

The main consumption tax is the value-added tax, which has lower rates for some goods categories such as food and medicines. In addition, excise taxes are levied for example on energy, fuel, alcohol, tobacco and soft drinks.

Public sector responses to the employment impacts of the COVID-19 crisis

The progressivity of taxation and the safety net provided by social security benefits function as automatic stabilisers in times of economic crises. Kyyrä, Pirttilä and Ravaska (2021) estimate that during the COVID-19 crisis, average market income (gross earnings and capital income) across all working (employees only) households decreased by 4.5% in 2020, but disposable income only by 1.8%. They estimate that approximately two-thirds of the cushioning effect of automatic stabilisers comes from increasing benefit payments rather than declining taxes. Their estimate only includes the impact of pre-crisis policies, and not of any exceptional measures enacted during the crisis.

In addition to the policies existing before the crisis, the Finnish government enacted some legislative changes in response to the employment impact of the COVID-19 crisis. In particular, unemployment benefits (labour market subsidy) were extended to also cover the self-employed. Very low-income individuals (based on receipt of social assistance benefits) received an additional pandemic allowance. Isotalo and Ravaska (2022) estimate that employees who experienced unemployment or furlough in 2020 benefited mostly from the automatic stabilisers, whereas the legislation changes did not have much impact on their disposable income. In contrast, the self-employed benefited strongly from the legislated possibility to apply for unemployment benefits.

Finland has a long-existing furlough scheme in place (since 1970), and it was heavily utilised in the COVID-19 crisis. In the crisis, furloughing was made easier for employers, and the entitlement and eligibility rules of unemployment benefits were relaxed. The sharp increase in unemployment benefit recipients in 2020 was largely due to furloughs (Kyyrä and Pesola, 2022). As most furloughed individuals were members of UI funds, they typically received earnings-related UI benefits during their furlough period, increasing the share of earnings-related benefit recipients among all unemployed. On the other hand, as employers have a responsibility to primarily call back furloughed workers, the unemployed had a harder time finding employment, which led to higher long-term unemployment in 2021.

3. Notes on measurement and definitions

Unit of analysis and sample:

- The sample is individuals aged between 25 and 60 inclusive, except where otherwise indicated. For figures on wages and earnings, the sample is further restricted to individuals (or households where applicable) with strictly positive wages or earnings respectively.

- Individuals are the unit of analysis throughout. For example, for equivalised household income, each individual is allocated their respective equivalised household income, so that income is counted as many times as there are individuals aged 25–60 in the household.

- In the figure on wage inequality (Figure 11), the top and bottom 1% of the gender-year-specific wage distribution are excluded. In the figure on overall income inequality (Figure 42), we show the Gini coefficient both with untrimmed data and with winsorised data, where we allocate all observations above the 99th percentile the amount equal to the 99th percentile, and negative incomes to zero. Otherwise, distributions are not trimmed.

Outcome definitions:

- **Employment rate:** the fraction of population that is employed according to the employment status in register data. Employment status is measured in the last week of the calendar year. A person is considered as employed if they have an ongoing work contract in that week (even if they are on leave that week, e.g., sick leave, parental leave), and they have positive earnings during the calendar year.

- **Employees and self-employed:** based on individual socioeconomic status (i.e., the main economic activity during the year). The definition guarantees that for the self-employed, annual self-employment income is greater than wage income.

- **Earnings**: gross annual real individual earnings (includes self-employed) among those who are employed and have strictly positive real earnings.

    - Includes wage income and self-employment income from all sources during the calendar year. Includes wage income from paid overtime hours.

    - Wages and earnings include employee taxes and social security contributions but not employer taxes or social security contributions. A few figures explicitly compare trends in gross earnings with and without employer social security contributions. Employer's social security contributions include health insurance, earnings-related pension insurance, unemployment insurance, occupational accident and disease insurance and group life insurance contributions.

    - We convert nominal gross earnings into real terms (2019 prices) using the cost-of-living index, which follows closely the consumer price index but does not suffer from revisions like the consumer price index.

- **Hours of work:** usual/typical paid hours worked per week, including paid overtime, among those who are employed and have strictly positive real earnings. Excludes self-employed workers. See the Data Appendix for more clarifications.

- **Wages:** individual real gross hourly wages (weekly gross employee earnings divided by weekly hours worked as defined above). Excludes self-employed workers. We convert nominal wages into real terms (2019 prices) using the cost-of-living index (see description under 'Earnings').

- **Gross household income** (household equivalised income including benefits, before deducting taxes):
    - Includes all incomes (earnings, capital income, income transfers) before direct taxes and employee social security contributions have been deducted.
    - Realised capital gains are included in gross income in Section 5.2. See the Data Appendix for further details.
    - Incomes are equivalised using the modified OECD equivalence scale.
- **Disposable household income** (household equivalised income after deducting taxes and adding benefits):
    - Includes all income (earnings, capital income, income transfers) and deducts all direct taxes and employee social security contributions.
    - Realised capital gains are excluded from disposable income in Section 6 and included in Sections 5.2 and 7. See the Data Appendix for further details.
    - Incomes are equivalised using the modified OECD equivalence scale.

Splits:

- **Sex:** female, male
- **Education:** education is split into three groups based on International Standard Classification of Education (ISCED) classification: ISCED 0–2 (low education), ISCED 3–6 (medium) and ISCED 7–8 (high).
    - Due to an education reform in the 1990s, degrees previously recorded as ISCED 5 were given an ISCED 6 status. We therefore depart from the classifications used in other country reports and pool ISCED 6 together with ISCED 5 (thus forming the medium education category as ISCED 3–6).
- **Household type:** Single without dependent children; single with dependent children; couples without dependent children; couples with dependent children; adult child; parent of adult child; other. A dependent child is a child aged 0–17.

Other clarifications:

- **Growth incidence curves**: These give the growth at each percentile of the distribution, where, for example, the 1st percentile is the level such that 1% of the population have less than that level. They do not give, for example, the mean growth within each percentile.

4. Individual employment and earnings

In this section we describe trends in employment, education level, hourly wages and hours worked, annual earnings, and self-employment. These factors were considerably affected by the deep recession during 1991–93. Some of the datasets cover this time period as well, whereas other datasets only begin in 1995, when the economic recovery had already started to gain speed. Another disruption occurred with the financial crisis, which hit Finland in late 2008, since when economic growth has been sluggish.

4.1 Trends in employment

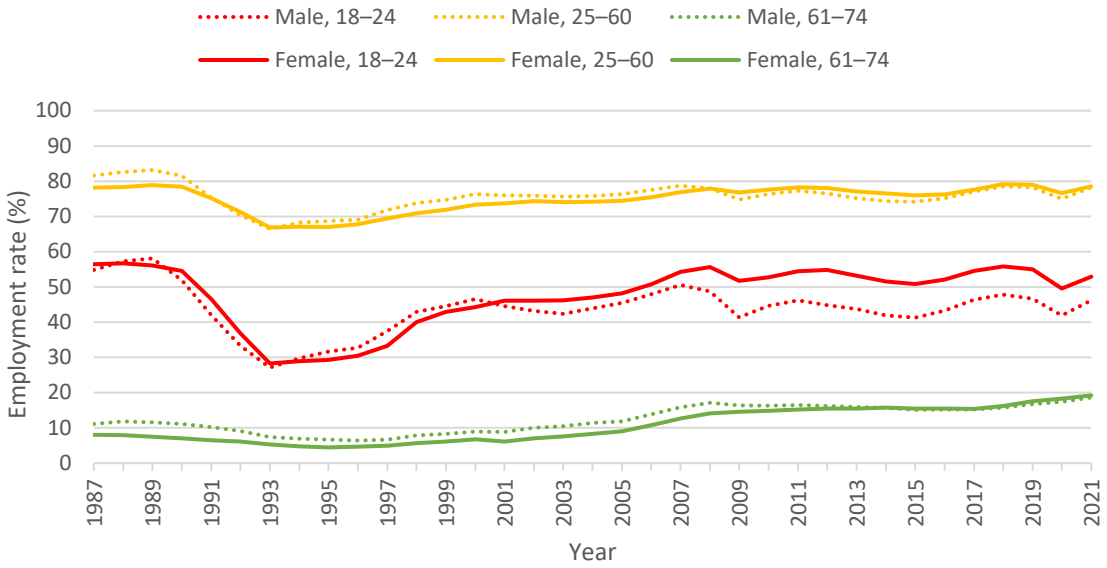
The recession of the early 1990s is clearly visible in employment trends in Figure 1. The employment rates of prime-aged workers fell from the level of approximately 80% to approximately 67% for both sexes. Since then, employment rates have steadily increased being 78% in 2008 for both genders. The financial crisis in 2008–09 and COVID-19 crisis in 2020 had little impact on the employment rate of prime-aged workers. Younger people were hit more by the 1990s recession, and additionally young men's employment suffered more from the financial crisis, leading to a clear gender divergence among the young (also visible in Figure 2). Young men's employment rates are about 8 percentage points lower than young women's. The elderly display very low employment rates, 8% for women and 11% for men before the 1990s recession, rising steadily to around 19% for both sexes in 2021. Overall, men and women in all age groups display very similar employment rates, despite the fact that Finnish mothers use the major share of parental leave (Statistics Finland, 2021; Social Insurance Institution, 2023), and are away from work after childbirth longer than their Nordic counterparts (Kambur and Pärnänen, 2017). (See also Box 4.1.)

It is also noteworthy that the population in Finland has been ageing rapidly, especially since the 2010s. In 2022, the proportion of elderly people (aged 65 and over) in the population was one of the highest among the countries in the Deaton Review country studies. Of these countries, only the Italian and Portuguese populations were older (OECD, 2023).

Box 4.1. Employment definition

The definition of an employed individual includes all individuals who had an ongoing job contract in the last week of the year, and who had positive earnings during the year. Part-time workers are therefore included. And as job contracts typically carry over during periods of parental leave, this measure of employment can therefore include workers who are on parental leave in the end of the year but had been working earlier in the year, workers on paid parental leave, or workers on parental leave who work part-time. Similarly, a worker with an ongoing job contract but who is on sick leave or rehabilitation is counted as employed.

Figure 1. Employment rates by age and sex, over time

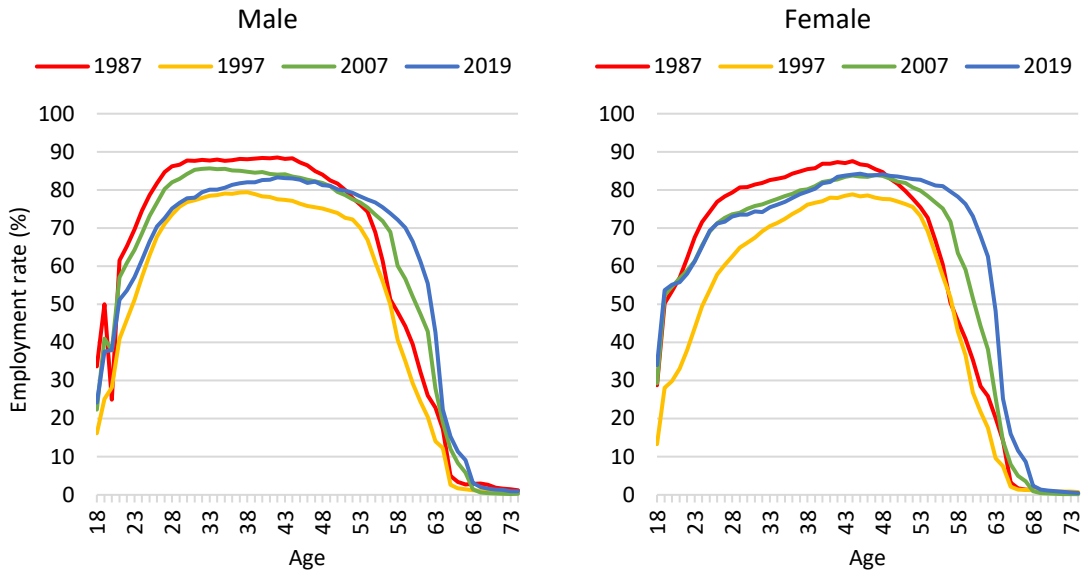


Note: Sample is individuals aged 18–74. Employment status is measured in the last week of the year. Persons who are on leave at the end of year (e.g., sick leave, parental leave) but have an ongoing job contract, and had positive earnings during the calendar year are classified as being employed. Part-time work is included.

Source: FOLK Basic data 1987–2021, Statistics Finland.

Figure 2 illustrates how employment rates of men and women evolve over the life cycle, and how this has changed over time. Note that men typically perform their compulsory military or civil service at ages 19–20. The effect of the 1990s recession shows that employment was lower at virtually all ages in 1997 (yellow line) than in 1987 (red line). Since then employment rates have risen above the 1987 level for both men and women over 50, but not for those under 50. The improvement in the employment rates of older individuals is likely related to several reforms in the pension system aimed at prolonging work careers (see, for example, Kyyrä and Wilke, 2007; Kyyrä, 2015). Part-time work and part-time pensions can also provide part of the explanation. For the under-50s, women's employment rates stagnated after the financial crisis, but deteriorated for men. For these younger workers, the gender gap in employment rate has considerably reduced over time, partially due to the lower employment rate among young men after the financial crisis.

Figure 2. Employment rates over life cycle by sex, selected years



Note: Sample is individuals aged 18–74. Employment status is measured in the last week of the year. Persons who are on leave at the end of year (e.g., sick leave, parental leave) but have an ongoing job contract, and had positive earnings during the calendar year are classified as being employed.

Source: FOLK Basic data 1987–2021, Statistics Finland.

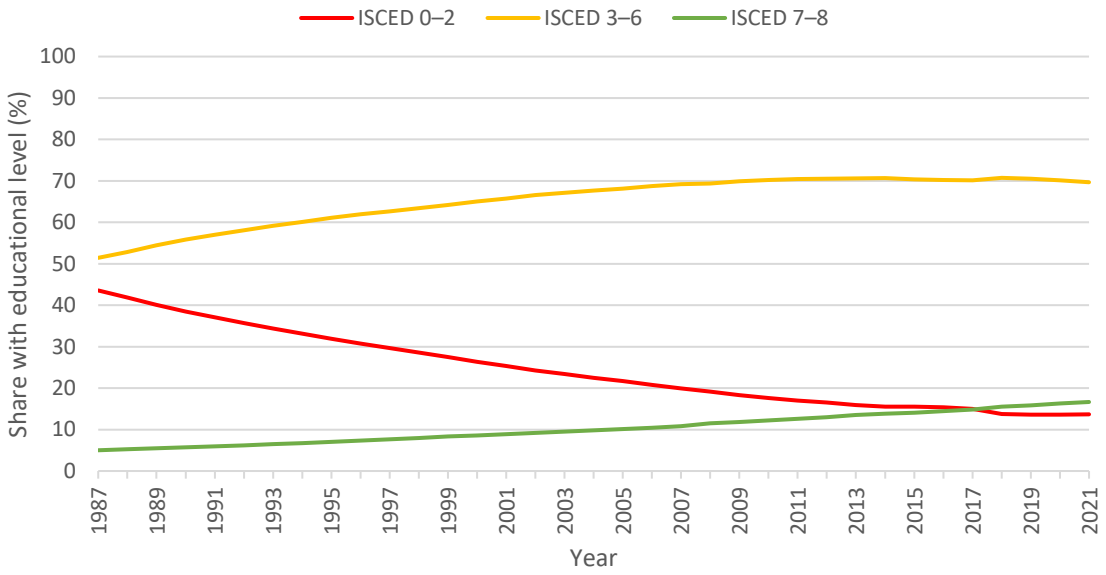
Figures 3 and 4 show trends in educational attainment. The average schooling level has increased considerably in this time period. In 1987 approximately 44% of people aged 25–60 had a low level of education (ISCED 0–2) but the share has rapidly decreased, standing at 14% in 2021. The share of those with medium-level education (ISCED 3–6) has increased from 51% to 70% (see also Box 4.2), and that with higher-level education (ISCED 7–8) from 5% to 17%. However, Kalenius and Karhunen (2017) have shown that entry rates to higher education are decreasing, and those born in the early 1970s have a higher share of highly educated individuals than any later cohort. In Figure 3, we see that the rising trend in medium-level education stagnated in the 2010s and even turns downwards slightly in the 2020s.

It is also noteworthy that among the low-educated group are individuals whose education level is unknown. As many immigrants have completed their education abroad, their education is typically missing from Finnish registers. The group of low-educated is therefore a mix of truly low-educated (both natives and immigrants) and individuals with foreign credentials unknown to Finnish registers (both natives and immigrants). We discuss immigration patterns further in Section 7.

Box 4.2. Education categories

Due to an education reform in the 1990s, vocational degrees that were earlier at ISCED level 5, were upgraded to ISCED level 6, although the content of the degrees remained the same (Böckerman, Hämäläinen and Uusitalo, 2009). In our data it is not possible to separate ‘old’ ISCED 5 and ‘new’ ISCED 6 from other education levels.

Figure 3. Educational attainment over time

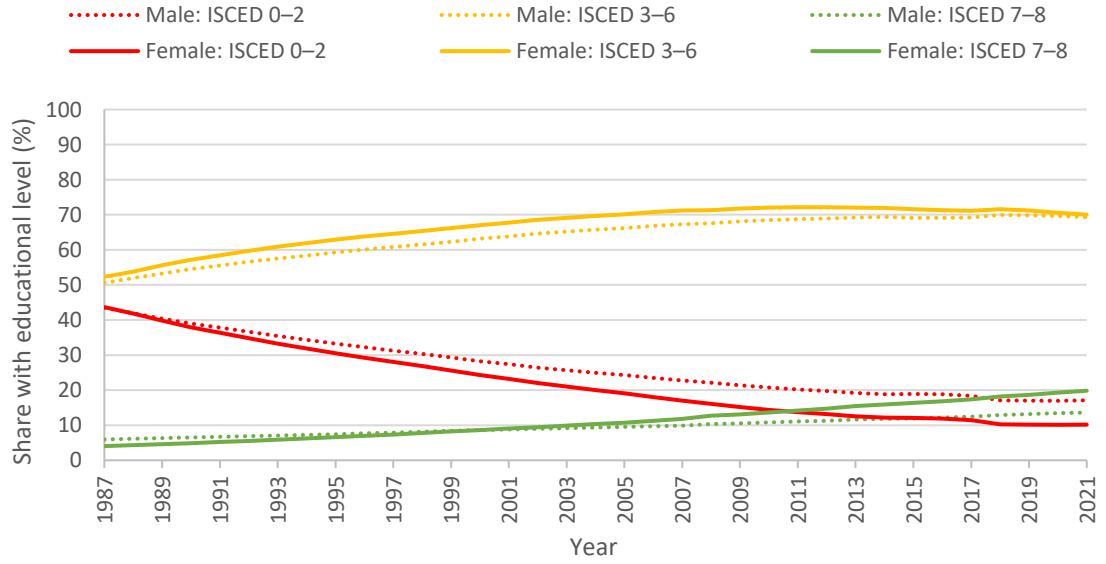


Note: Sample is individuals aged 25–60.

Source: FOLK Basic data 1987–2021, Statistics Finland.

In Figure 4 we see a clear diverging trend between the sexes. While only 10% of women had only compulsory education in 2021, the respective figure for men was 17%. The share of those with higher university degrees (ISCED 7–8) has increased rapidly, especially among women: In 1987, 4% of women completed higher degrees (6% of men), while in 2021 20% of women had such a degree (14% of men). At intermediate levels (ISCED 3–6) the gender difference is smaller, although within this category we see that women completed a higher level of education than men (in 2021, the share of individuals with an ISCED 4–6 level of education was 10 percentage points higher for women than for men, whereas the share with an upper secondary (ISCED 3) education was 9 percentage points lower for women than for men; both shares were more equal in 1987). Women's education level has therefore increased relatively faster in the past three decades.

Figure 4. Educational attainment by sex, over time

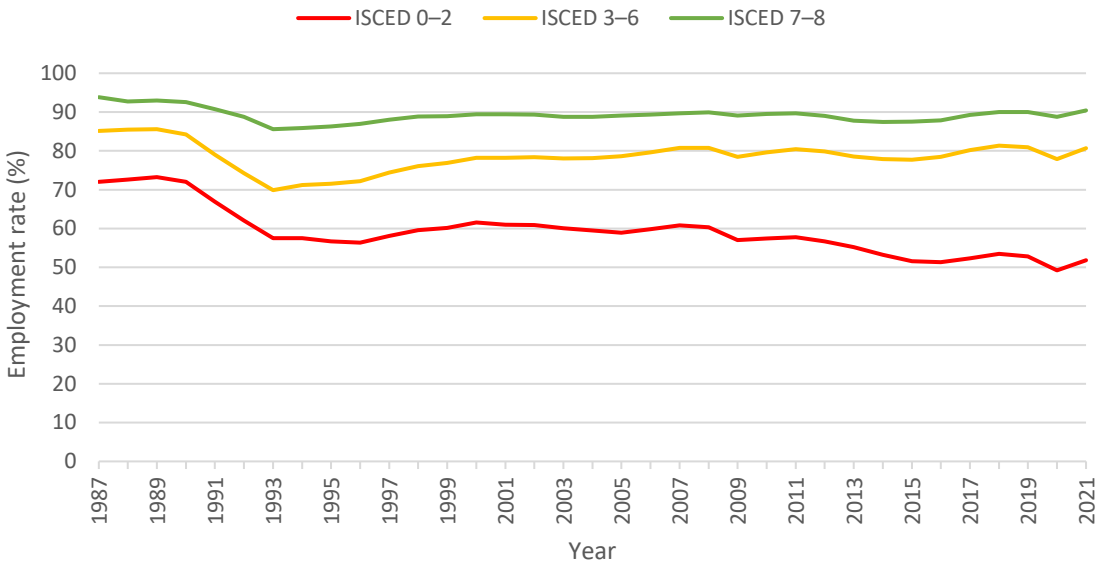


Note: Sample is individuals aged 25–60.

Source: FOLK Basic data 1987–2021, Statistics Finland.

Figure 5 shows employment rates by educational attainment and Figure 6 adds gender decomposition. The 1990s recession had large impacts throughout society. The employment rate of all education levels went down during 1991–93, and even as employment recovered, all education levels stayed at a lower employment level than before the recession. The average employment rate development in Figure 1 is therefore a result of rising average education levels in addition to general economic developments. The drop in employment in the 1990s recession was smallest for the highest educated, and since the mid-1990s their employment level has remained quite stable. The drop in employment was more dramatic for the middle-educated, but their employment level has also stabilised since the 2000s. In contrast, for individuals with a low education there is a decreasing trend in the employment rate, going from 72% to 52%.

Figure 5. Employment rates by education, over time

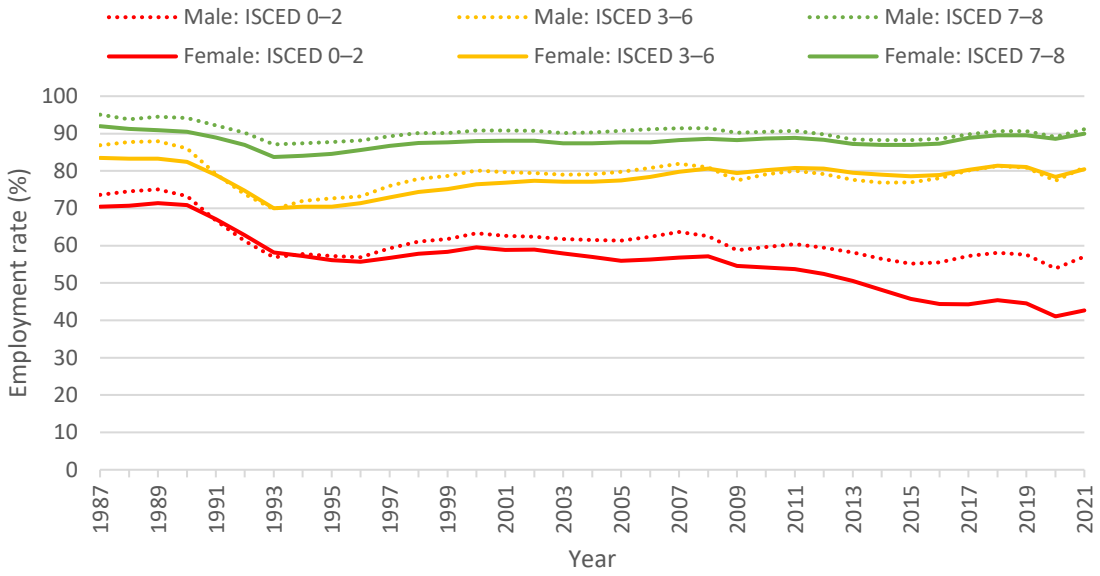


Note: Sample is individuals aged 25–60. Employment status is measured in the last week of the year. Persons who are on leave at the end of year (e.g., sick leave, parental leave) but have an ongoing job contract, and had positive earnings during the calendar year are classified as being employed.

Source: FOLK Basic data 1987–2021, Statistics Finland.

Decomposing the previous employment trends by gender reveals that women with only compulsory education have done worse than men with similar education since the late 1990s, and by 2021, the gender difference in employment rates had grown to 14 percentage points. For the other education groups, gender trends are very similar throughout the period.

Figure 6. Employment rates by sex and education, over time

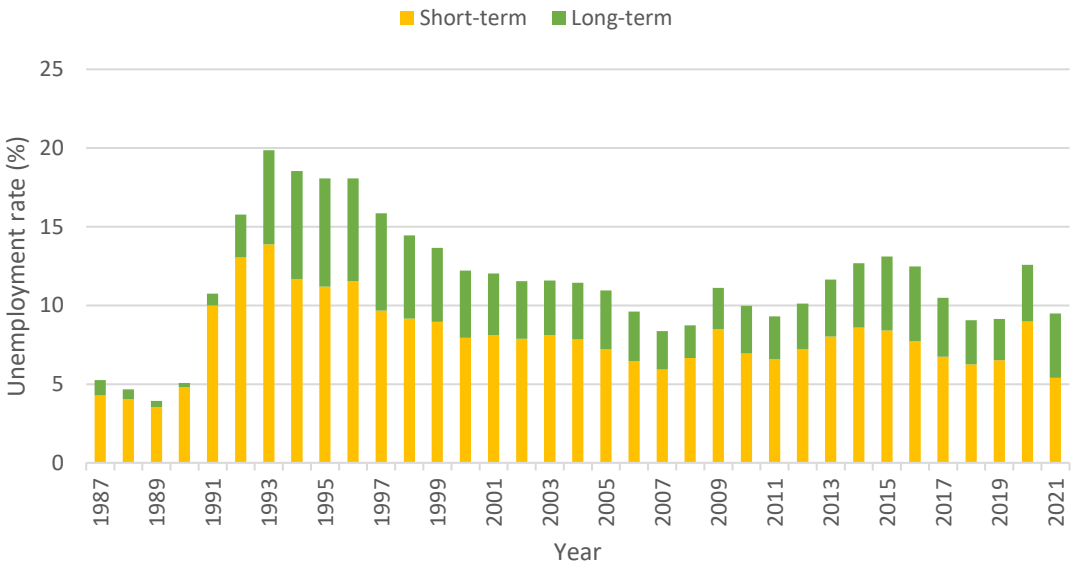


Note: Sample is individuals aged 25–60. Employment status is measured in the last week of the year. Persons who are on leave at the end of year (e.g., sick leave, parental leave) but have an ongoing job contract, and had positive earnings during the calendar year are classified as being employed.

Source: FOLK Basic data 1987–2021, Statistics Finland.

The severity of the 1990s recession is clearly visible in Figure 7. Before the recession, unemployment had been very low for several decades. Unemployment rose to unforeseen levels when the recession hit in 1991. Employment recovery was slow, and a new phenomenon of persistent long-term unemployment transpired. The boom years of early 2000s helped reduce unemployment, but especially long-term unemployment remained at a high level. The Global Financial Crisis and the downturn that followed in 2009 undid this positive development, and again unemployment remained at relatively high levels until 2017. Unemployment fell below 10% during 2018–19, but the COVID-19 crisis in 2020 again caused a spike in unemployment. The use of furloughs in both 2008–09 and 2020 crises was common, but nevertheless in both crises long-term unemployment increased in the following years. In 2021 the share of long-term unemployment was 43%, the highest of the period.

Figure 7. Unemployment rate by duration of unemployment, over time



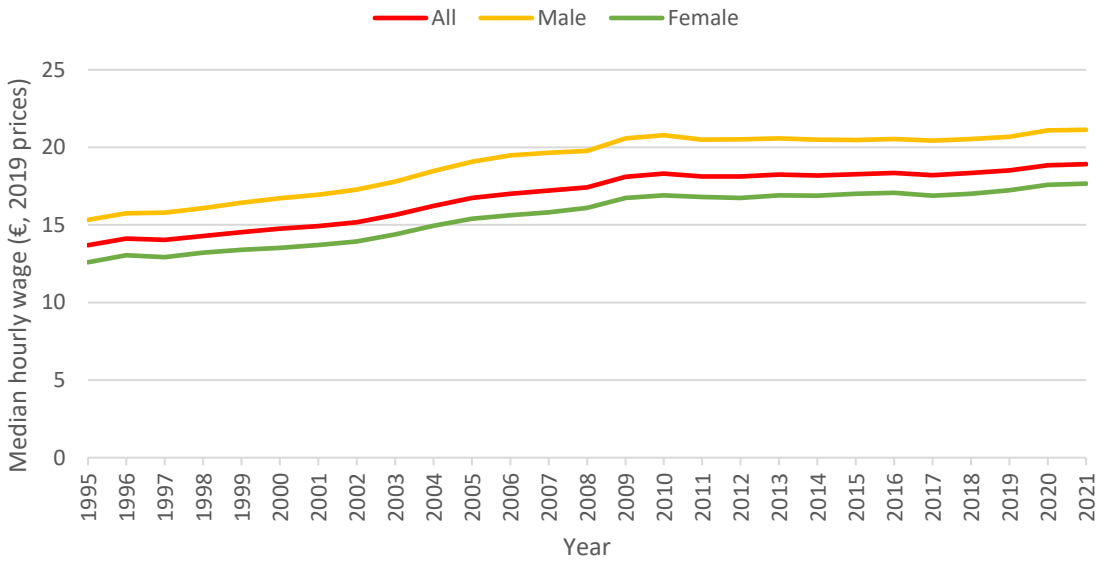
Note: Sample is individuals aged 25–60. Employment status is measured in the last week of the year. The unemployed are divided into short-term (less than 1 year) and long-term unemployed (1 year or more).

Source: FOLK Basic data 1987–2021, Statistics Finland.

4.2 Trends in hourly wages (employees only)

Figure 8 shows trends in median real hourly wage. Here our data begin in 1995 and hence we do not observe the effect of the recession in the early 1990s. Among employees covered by our data (see the Data Appendix), the median hourly wage has increased by 38% in real terms since 1995, being €19 in 2021. Virtually all of the increase in the hourly wage happened before 2009, and since then the median hourly wage has remained stable, with only a small rise in 2020. In Finland, wages are negotiated centrally between employer and labour unions (for more details see Section 5). There are no remarkable differences in trends between sexes, women's hourly wages being approximately 82% of men's wages.

Figure 8. Median real hourly wage among employees, overall and by sex, over time

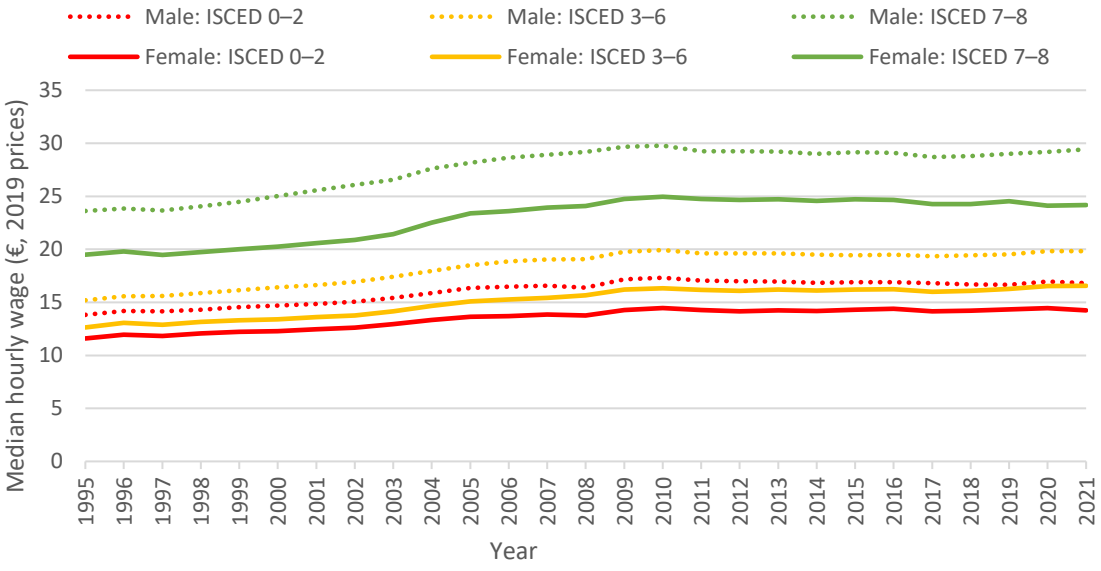


Note: Sample is individuals aged 25–60. For workers with multiple employers, the main employer is selected.

Source: Structure of Earnings Surveys (SES) for private, state and municipal sectors 1995–2021.

Figure 9 presents the median hourly wage by education group and sex. For both genders, the medium-education group has only a small wage premium compared to low education, and those with the highest levels of education have a much larger premium over those with medium education. Although women in Finland are more educated than men (Figure 4), and they are as often in employment (Figure 1), Figure 9 illustrates that they earn lower wages at each education level. Gender differences in median hourly wages are similar at all education levels and quite stable over the years. This illustrates the strong gender segregation of Finnish labour markets (see, for example, Statistics Finland, 2021, Table 3.17). The median hourly wage of women with medium education (yellow solid line) has been below the median hourly wage of men with only compulsory education (red dotted line) throughout the time period.

Figure 9. Median real hourly wage among employees, by sex and education, over time

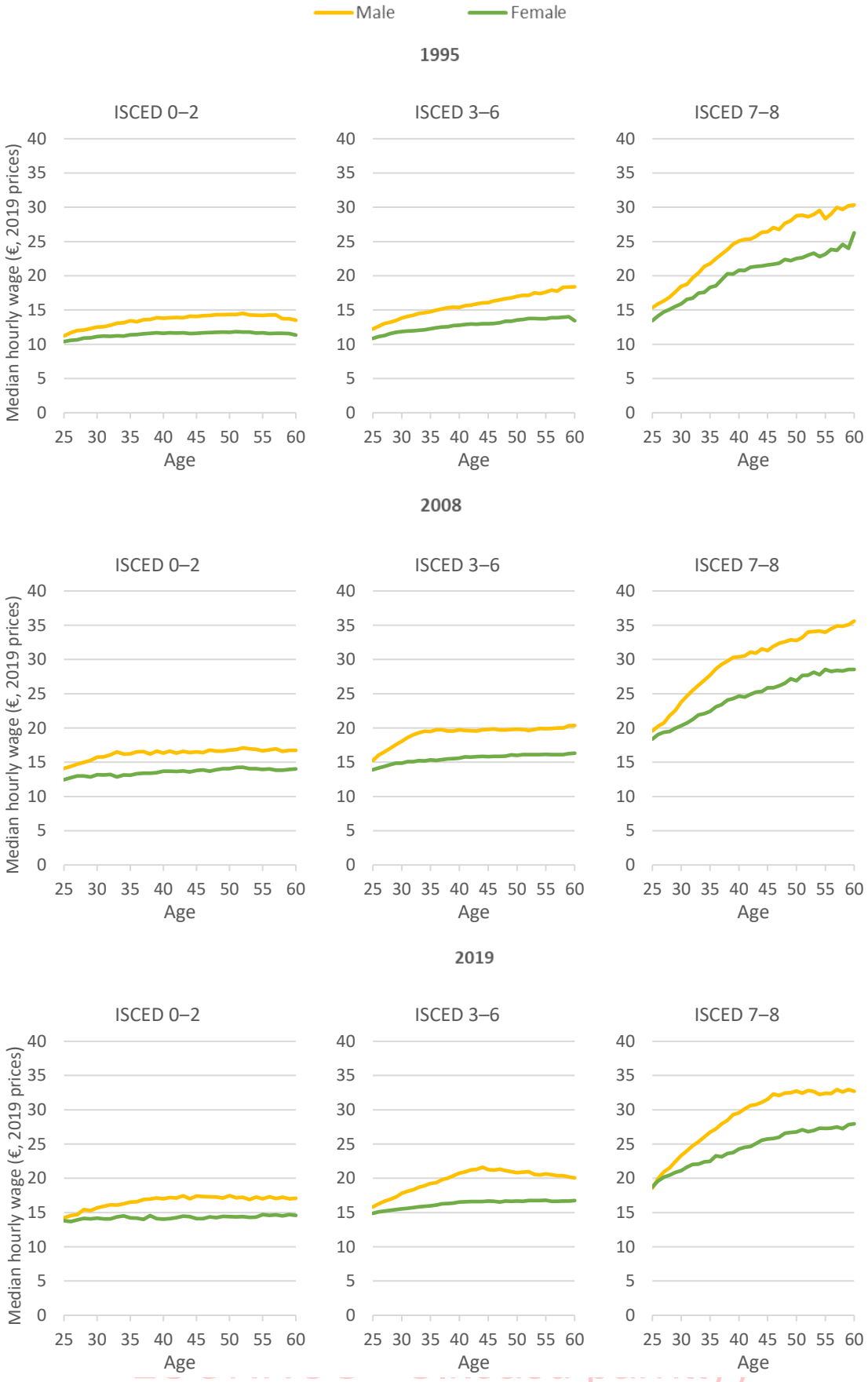


Note: Sample is individuals aged 25–60. For workers with multiple employers, the main employer is selected.

Source: Structure of Earnings Surveys (SES) for private, state and municipal sectors 1995–2021.

Figure 10 displays the evolution of median real hourly wages by educational attainment and sex, in different years. For the lowest-educated women, the real hourly wage is almost flat over the life cycle, while for men there is somewhat of a hump-shape, where prime-age workers have higher wages, which is commonly assumed as a wage trajectory over the life cycle. However, the differences between sexes at different ages are small at this education level. For the medium-education group, men experienced a continually rising wage over their life cycle in 1995, but in 2008 and 2019, the period in early career where wages rise steeply was shorter, followed by stagnating or even decreasing wages. Women experience less wage growth over their career than men. For the highest-education group, an age premium is observed for both men and women, although for men the gradient is steeper than for women. In all education groups, the age gradient in wages has grown less steep over the years, but gender differences remain roughly similar in relative terms.

Figure 10. Median real hourly wage among employees over life cycle, by sex and education, selected years

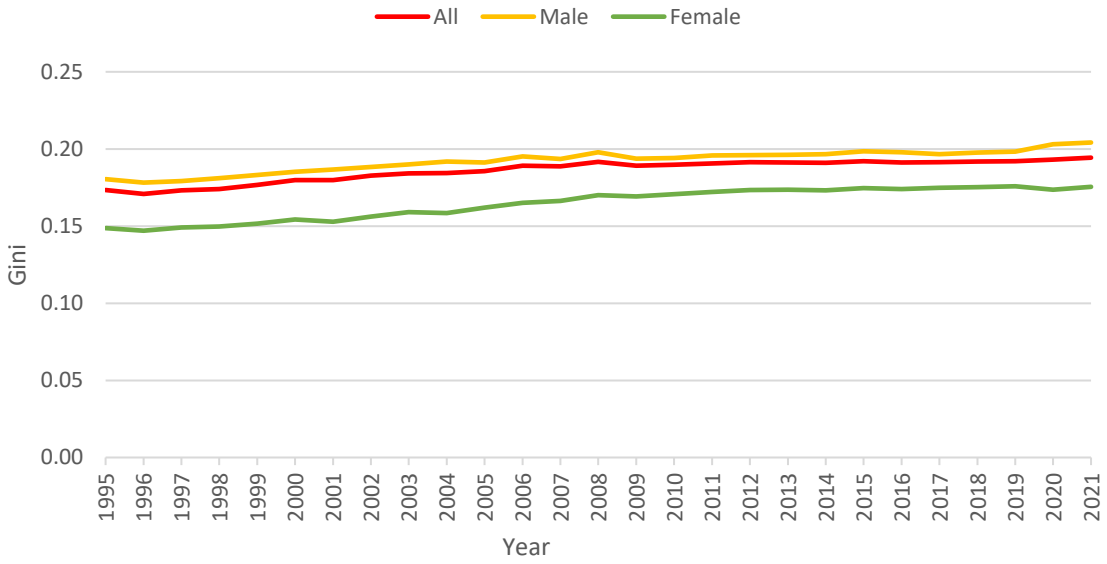


Note: Sample is individuals aged 25–60. For workers with multiple employers, the main employer is selected.

Source: Structure of Earnings Surveys (SES) for private, state and municipal sectors 1995–2021.

Figure 11 shows the Gini coefficient for hourly wages for employees covered by our wage data (see the Data Appendix). The overall Gini was 0.17 in 1995 and 0.19 in 2021. The Finnish wage setting system of collective bargaining with high contract coverage (see Section 5) could be one explanation to the relatively mild increase in wage inequality. Women have more compressed wages than men, but during 1995–2008 inequality in women's wages increased more than men's. Afterwards, women's Gini has been at approximately 0.17 and men's at 0.20.

Figure 11. Gini coefficient of hourly wages among employees, overall and by sex, over time



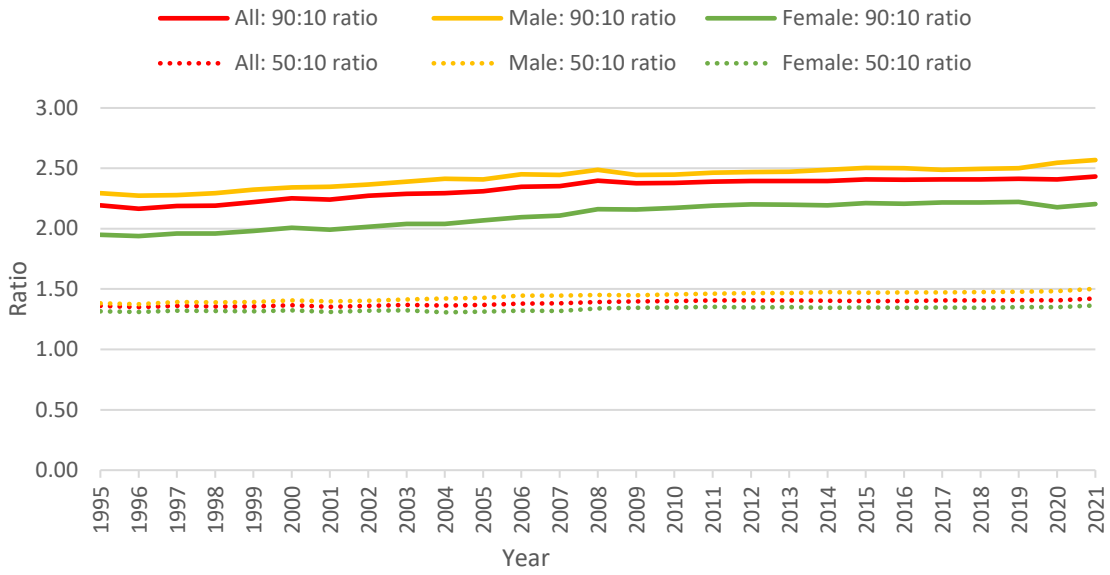
Note: Sample is individuals aged 25–60. For workers with multiple employers, the main employer is selected. The top and bottom 1% of the gender-year-specific wage distribution are excluded.

Source: Structure of Earnings Surveys (SES) for private, state and municipal sectors 1995–2021.

Figure 12 shows the wage inequality using 90:10 and 50:10 ratios. While the overall 50:10 ratio has remained flat at around 1.4, the 90:10 ratio has increased from 2.2 to 2.4, indicating that the growth in inequality observed in the previous figure stems from the top of the distribution. Again, the wage setting system is likely to affect more the wages at the bottom of the distribution, ensuring in particular that the lowest wages keep up with median wages. As with the Gini coefficient, with this inequality measure the growth in wage inequality among women (at the top) was slightly more pronounced during 1995–2008.

We do not have data on hourly wages for the years of the 1990s recession, but Kyyrä (2000) estimates that median monthly wages among private-sector males were very slowly increasing during 1988–96, with no dramatic changes during recession years in any of the income distribution quantiles he studied. Furthermore, the 90:10 ratio for monthly wages was very flat during the recession years and the first years of recovery. Similarly, the coefficient of variation of monthly wages was stable during his observation period. This suggests that among the employed, wages reacted very little in the recession.

Figure 12. 90:10 and 50:10 ratios of hourly wages among employees, overall and by sex, over time

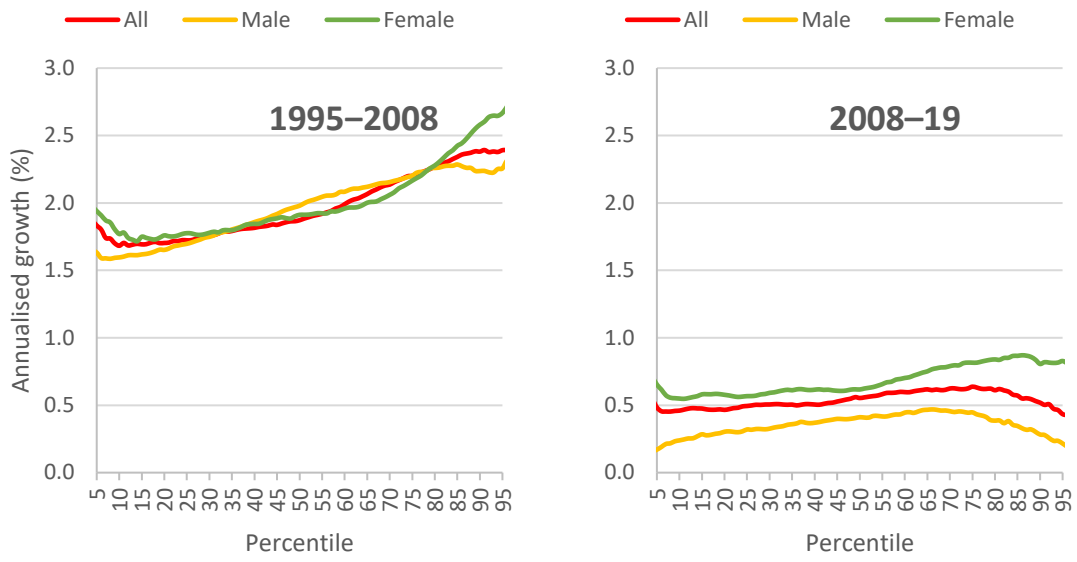


Note: Sample is individuals aged 25–60. For workers with multiple employers, the main employer is selected.

Source: Structure of Earnings Surveys (SES) for private, state and municipal sectors 1995–2021.

Figure 13 shows how hourly wages have grown over time (annualised growth rate) in each wage percentile. In the first period, 1995–2008, average growth was 2% over all wage percentiles, while in the latter period – the decade after the financial crisis – growth was on average only 0.5%. In the first period there is a clear gradient in wage growth. Among the top decile, the growth was on average 2.4% while among the bottom decile wage growth was on average 1.9%. For the latter period this gradient disappears, and the growth rate line is virtually flat across all percentiles. However, there are some gender differences. While in the earlier period a significant gender difference emerges at the top and bottom of the distribution for both genders, during the latter period there is a clear gender difference throughout the wage distribution, which is amplified at the top.

Figure 13. Annualised growth in hourly wages among employees by wage percentile, overall and by sex, selected periods



Note: Sample is individuals aged 25–60. For workers with multiple employers, the main employer is selected.

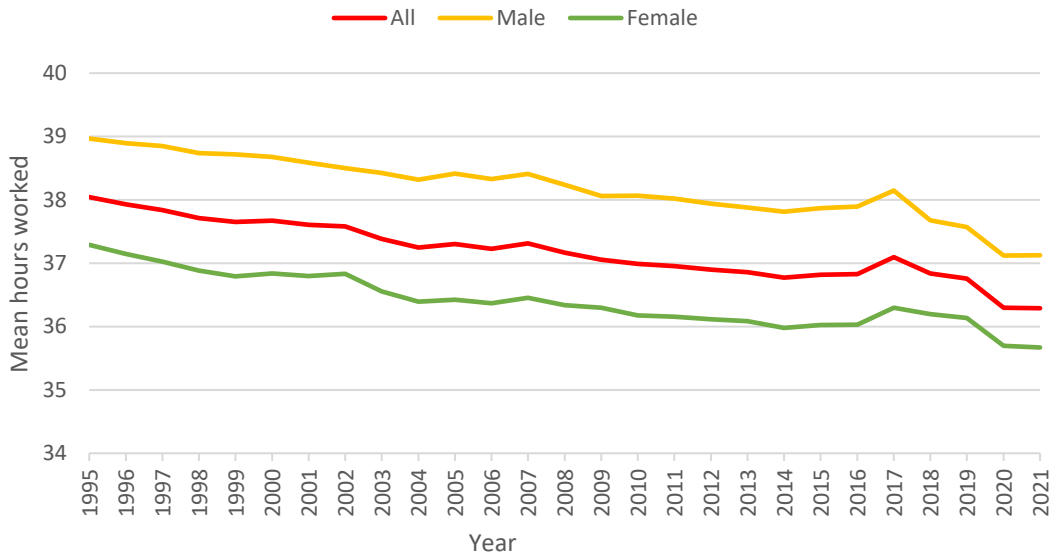
Source: Structure of Earnings Surveys (SES) for private, state and municipal sectors 1995–2021.

4.3 Trends in hours worked (employees only)

Figure 14 shows mean hours worked over time for employees covered by our data (see the Data Appendix), including regular contracted hours and paid overtime. Mean working hours decreased by 1.8 hours between 1995 and 2021, with a clear declining trend throughout the period. However, for those employed full-time, working hours are very stable at around 38.5 hours per week for both men and women. For those employed part-time, average hours fluctuate more over time, between 22 and 26 hours per week with no clear trend over time. During these years, the share working 30 hours per week or less has increased from 6% in 1995 to 11% in 2021 (4% to 8% for men; 8% to 14% for women). Women work part-time more often, which explains the gender difference in average working hours.

The measure of weekly working hours includes paid overtime hours. There is a downward trend in overtime hours as well as in total hours. Men also work more overtime hours than women, increasing slightly the gender difference in hours in Figure 14, but the difference largely stems from differences in part-time work.

Figure 14. Mean hours worked among employees, overall and by sex, over time

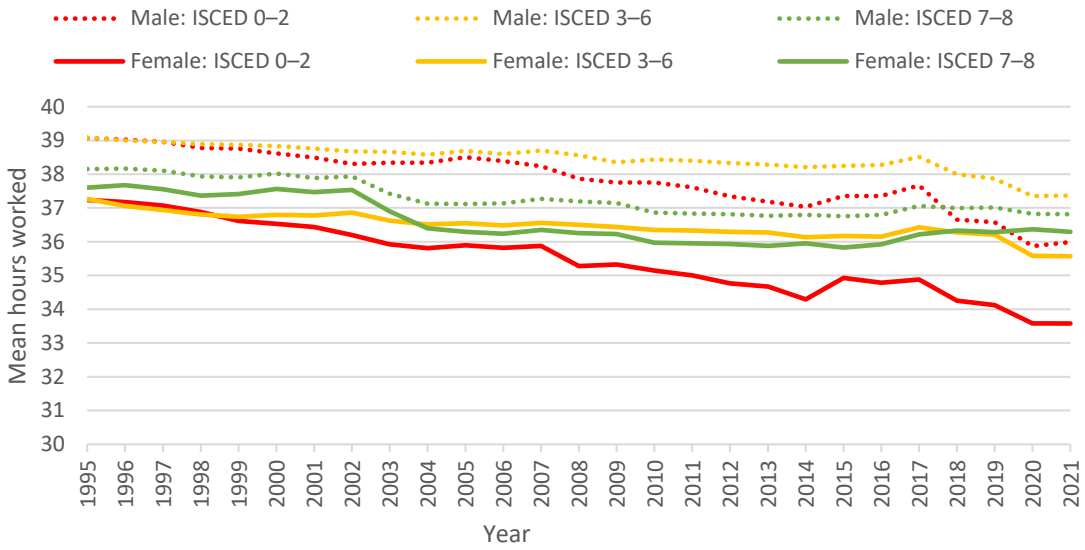


Note: Sample is individuals aged 25–60. For workers with multiple employers, the main employer is selected.

Source: Structure of Earnings Surveys (SES) for private, state and municipal sectors 1995–2021.

By educational attainment (Figure 15), we observe that the downward trend in hours worked is seen in every education group and for both sexes. In general, women work fewer hours than men, but the difference is smallest in the highest-education group and largest in the lowest-education group. Men in the highest-education group tend to work *fewer* hours than men in medium- and low-education groups, which could be partly related to the type of work and reporting of working hours (monthly paid white-collar workers might not report overtime hours similarly to hourly paid blue-collar workers). Conversely, highly educated women work *more* hours than less educated women, and since the 2000s about as much as medium-educated women, which is related to part-time work in the different education groups. The most striking change has happened among women in the lowest education group as their work hours have reduced by 3.7 hours in the 27-year observation period (–3.1 hours for low-educated men). Part-time work has become more common in each education group, but for low-educated women the increase in the share working 30 hours or less was 15 percentage points during 1995–2021.

Figure 15. Mean hours worked among employees, by sex and education, over time

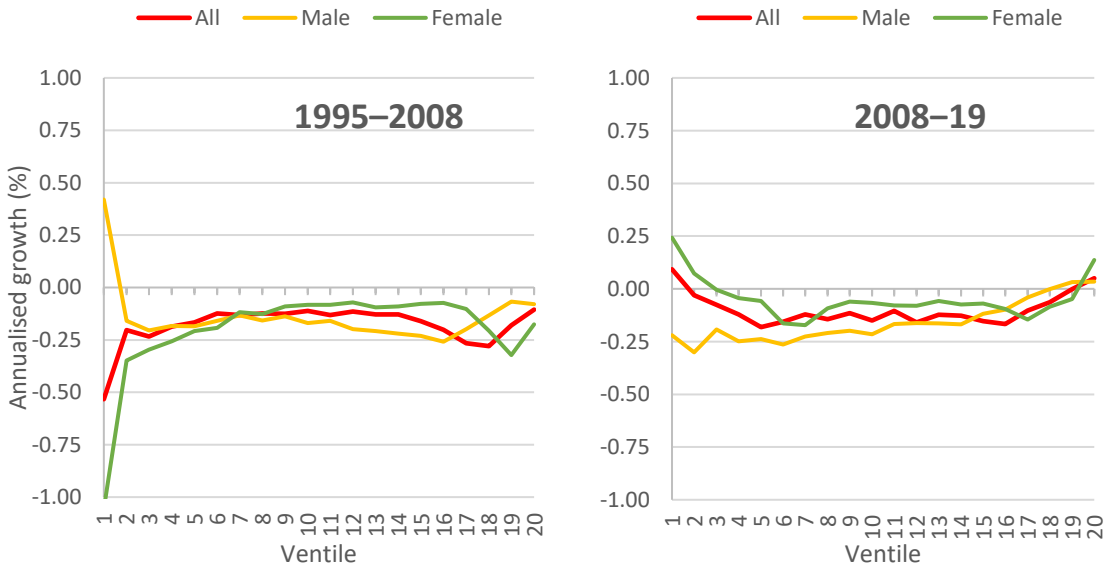


Note: Sample is individuals aged 25–60. For workers with multiple employers, the main employer is selected.

Source: Structure of Earnings Surveys (SES) for private, state and municipal sectors 1995–2021.

Figure 16 presents the annualised growth in mean hours worked among employees by wage ventile (5-percentile bins). Working hours have exhibited negative growth in both periods, with small differences at the bottom and top of the wage distributions.

Figure 16. Annualised growth in mean hours worked among employees by hourly wage ventile, overall and by sex, selected years



Note: Sample is individuals aged 25–60. For workers with multiple employers, the main employer is selected.

Source: Structure of Earnings Surveys (SES) for private, state and municipal sectors 1995–2021.

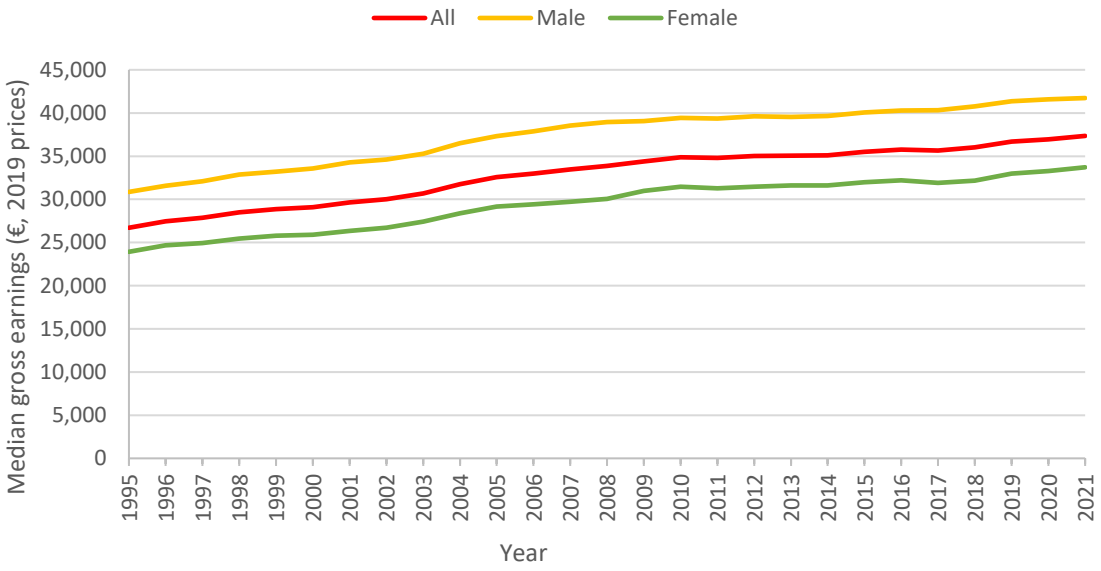
4.4 Inequality in individual earnings among those in work (employees and self-employed)

Real median gross individual earnings among the employed (employees and self-employed) are presented in Figure 17 by sex. Median earnings have increased from €27,000 in 1995 to €37,000 in 2021. Women's median earnings are between 77% and 80% of men's earnings. In Finland, the labour market is heavily segregated, and women are overrepresented in low-wage sectors (Statistics Finland, 2021; see also Figure 8). Part-time jobs are also more common for women than men. In the trends of earnings there are no remarkable differences between the sexes. Median earnings grew by 27% in real terms from 1995 to 2008, but only by 10% between 2008 and 2021. The financial crisis in 2009–10 did not reduce earnings among the employed, but after 2010 the prevailing increasing trend stopped. Similarly, the COVID-19 crisis did not reduce median earnings of the employed. This time trend resembles that of median hourly wages in Figure 8.

Box 4.3. Measurement of earnings of the self-employed

In this section we include both employees and self-employed in our population of interest, and our earnings definition covers both wage income and self-employment income Self-employment income includes income from agriculture and forestry, copyright fees, and for limited partnerships, for example, income from business activity. Self-employment income in agriculture also contains various subsidies and compensations such as agricultural subsidies. The self-employed who run limited liability companies can often decide whether to take out income from their company as salaries or capital income. We do not include capital income. In addition, the self-employed can retain earnings in their company, in which case they might receive these retained earnings as income in a later period. Such effects are not captured in the data. (See also Paukkeri, Ravaska and Riihelä, 2023.)

Figure 17. Median real gross individual earnings, overall and by sex, over time

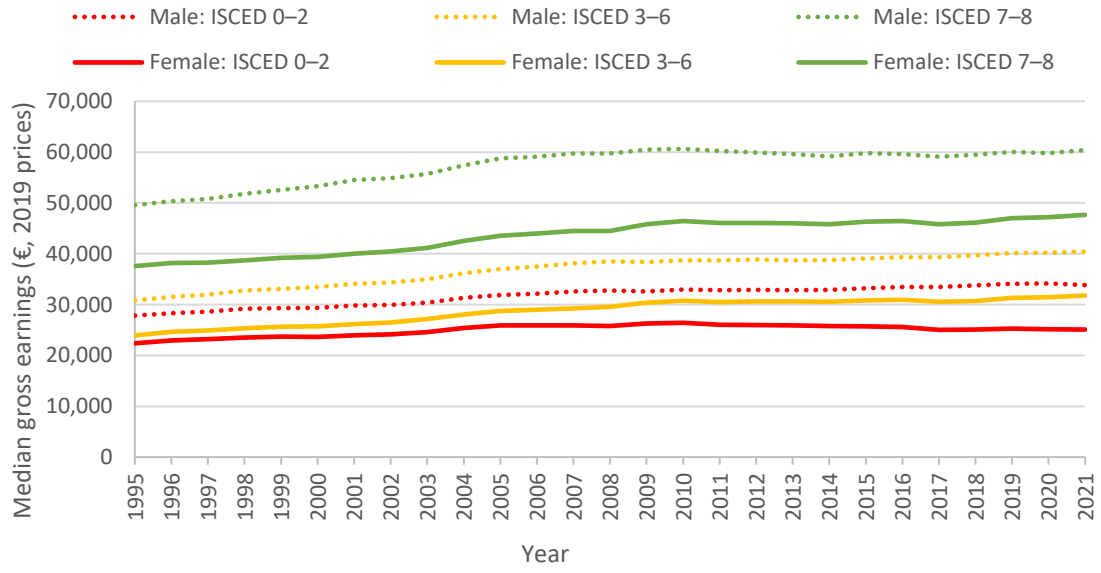


Note: Sample is individuals aged 25–60 who are employed at the end of the year and have positive earnings during the year. Earnings includes wage income and self-employment income.

Source: FOLK Income and FOLK Basic data 1995–2021 Statistics Finland.

Figure 18 displays median earnings by gender and education, and the trend is consistent with that of median wages in Figure 9. At all levels of education, men's median earnings are higher than women's. The median earnings of high-educated women have converged slightly to the earnings of high-educated men, from 75% to 79% of men's earnings. The trend is opposite for low-educated women, whose median earnings have decreased from 81% to 74% of men's earnings.

Figure 18. Median real gross individual earnings, by sex and education, over time



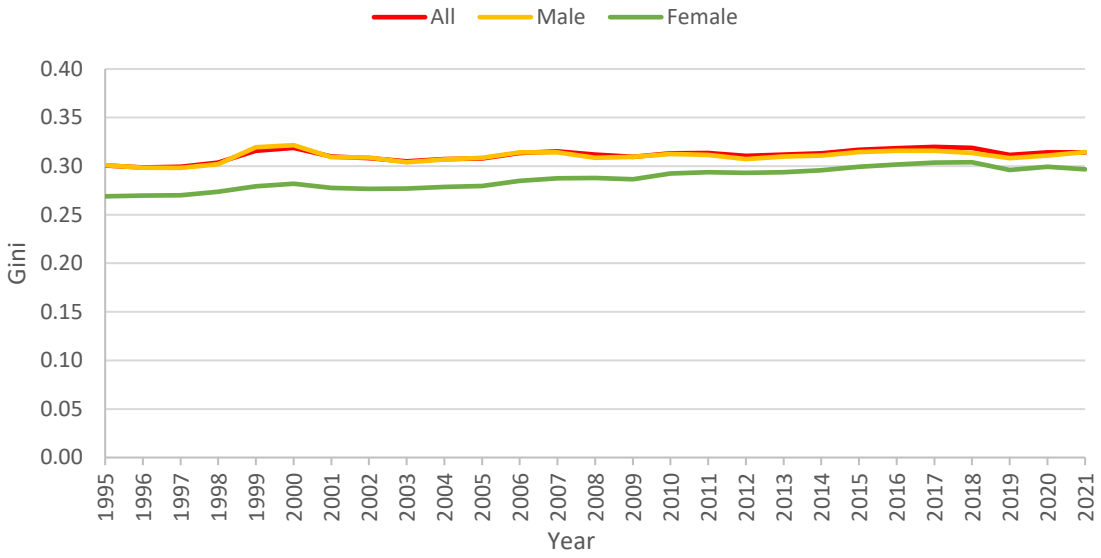
Note: Sample is individuals aged 25–60 who are employed at the end of the year and have positive earnings during the year. Earnings includes wage income and self-employment income.

Source: FOLK Income and FOLK Basic data 1995–2021, Statistics Finland.

Figure 19 describes the level and evolution of the Gini coefficient for earnings for the employed by gender between 1995 and 2021. The Gini coefficient has remained almost unchanged over the period at about 0.32. The slight increase in earnings inequality in 1999 and 2000 (by about 0.01) is

attributable to exceptional incomes from stock option programmes in those years, which is related to the IT boom and Nokia boom of the late 1990s. Earnings inequality for women has slightly increased from 0.27 to 0.30.

Figure 19. Gini coefficient of gross individual earnings, overall and by sex, over time



Note: Sample is individuals aged 25–60 who are employed at the end of the year and have positive earnings during the year. Earnings includes wage income and self-employment income.

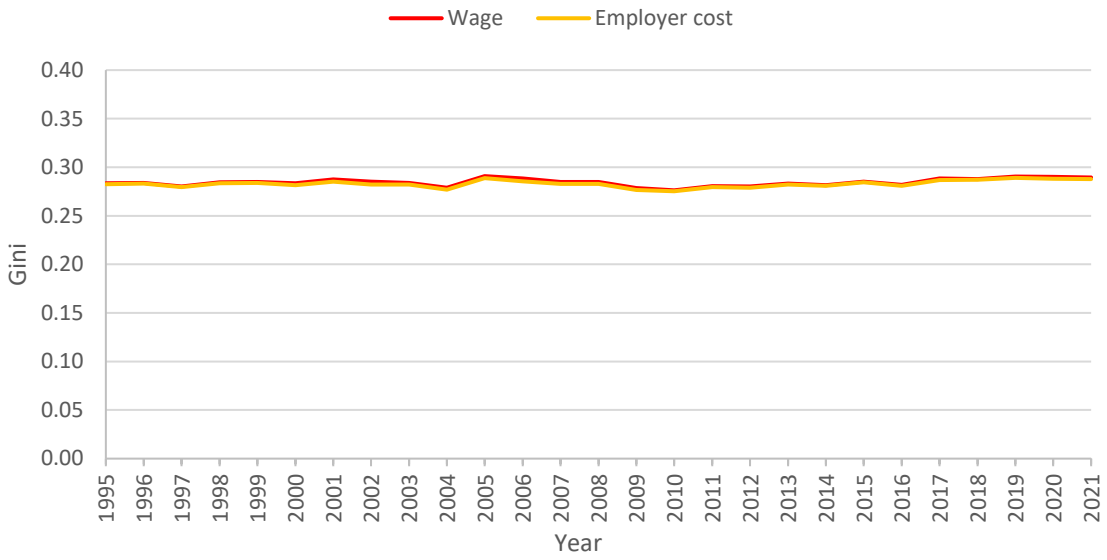
Source: FOLK Income and FOLK Basic data 1995–2021, Statistics Finland.

Figure 20 adds employer costs to gross earnings and calculates the Gini coefficient. Employer costs (compulsory premiums for employers; see Box 4.4) have no meaningful effect on the Gini coefficient, even though these costs depend on, among other things, the employer's sector (private, municipality or state). Notice that here the sample consists of employees only, as there is no meaningful measure of employer cost for entrepreneurs, and the Gini coefficient is therefore at a different level compared to Figure 19.

Box 4.4. Employer contributions

Employer contributions. Employers pay compulsory premiums from their employees' pay. These include health insurance, earnings-related pension insurance, unemployment insurance, occupational accident and disease insurance and group life insurance contributions. Some of the premiums depend on the employer's size or the employee's age, but do not depend on the employee's wage or occupation, for example. The premiums vary by employer sector as well (private, state or municipal sector). For example, in 2022 the average total employer premium in the private sector was 21% of wages and 24.3% in the municipal sector.

Figure 20. Gini coefficient of gross individual earnings and total employer cost, over time (employees only)

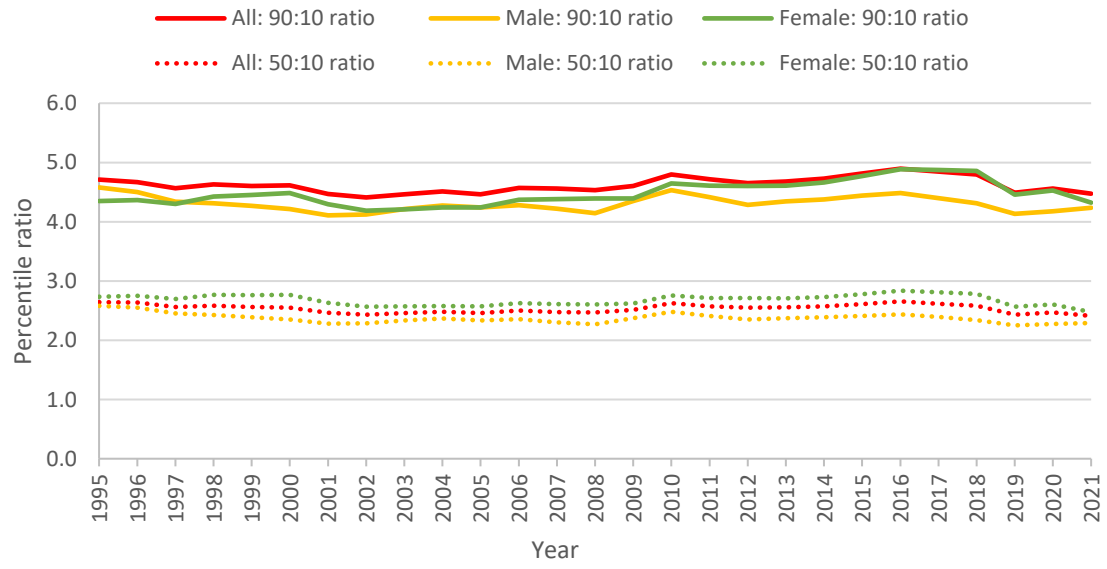


Note: Sample is individuals aged 25–60 (employee as main socioeconomic status). Earnings includes wage income and sample is wage earners. Employer costs are average values in state, municipal and private sectors, authors' calculations and IDS.

Source: Income Distribution Survey 1990–2021, Statistics Finland.

Figure 21 describes the gap between individuals' earnings between different income levels. The earnings gap between the top 90% and the bottom 10%, using the 90:10 ratio, decreased in the late 1990s and early 2000s, especially for men. After 2008, the 90:10 ratio increased a bit but decreased again in 2019. The 50:10 ratio has a similar trend to the 90:10 ratio. However, it is noteworthy that in 1999–2002 and since 2006, the women's 90:10 ratio was higher than the corresponding ratio for men. This indicates that women's earnings distribution has more disparities between very high and very low incomes than men's earnings distribution.

Figure 21. 90:10 and 50:10 ratios of gross individual earnings, overall and by sex, over time

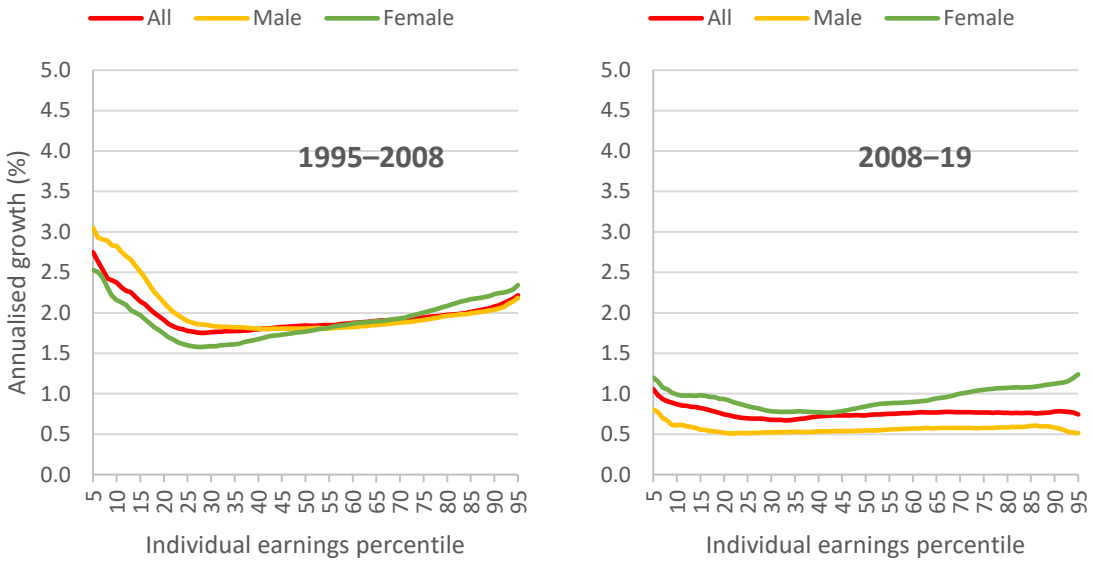


Note: Sample is individuals aged 25–60 who are employed at the end of the year and have positive earnings during the year. Earnings includes wage income and self-employment income.

Source: FOLK Income and FOLK Basic data 1995–2021, Statistics Finland.

Figure 22 illustrates that on average and for men, low earnings (10th percentile) grew faster than high earnings (90th percentile) during 1995–2008. For women, growth has been similar at the bottom (10th percentile) and top (90th percentile), and both higher than at median incomes. During 2008–19, incomes grew very little overall, but income growth was slightly faster at the bottom of the distribution than at the middle. Income growth has been faster for women at the top of the distribution.

Figure 22. Annualised growth in gross earnings by earnings percentile, overall and sex, selected periods

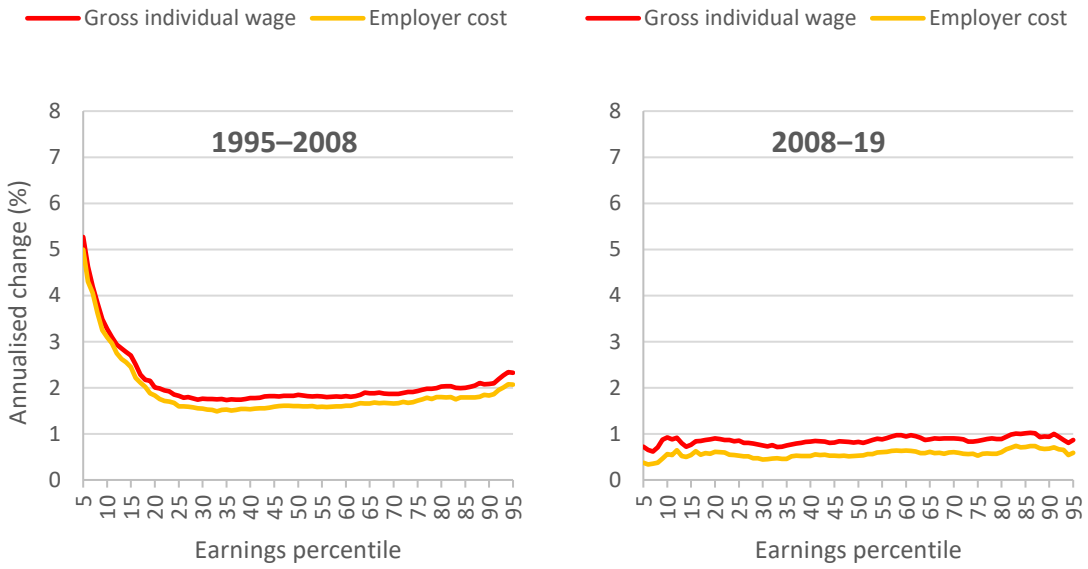


Note: Sample is individuals aged 25–60 who are employed at the end of the year and have positive earnings during the year. Earnings includes wage income and self-employment income.

Source: FOLK Income and FOLK Basic data 1995–2021, Statistics Finland.

Figure 23 illustrates average annual increases in wage income across the earnings distribution. There are no significant differences in growth rates in the distributions with and without employer contributions. Note again that like Figure 20, this figure only includes employees, not the self-employed, and hence the earnings distributions and growth rates are different from those in Figure 22.

Figure 23. Annualised growth in gross earnings and employer cost by earnings percentile, selected periods (employees only)



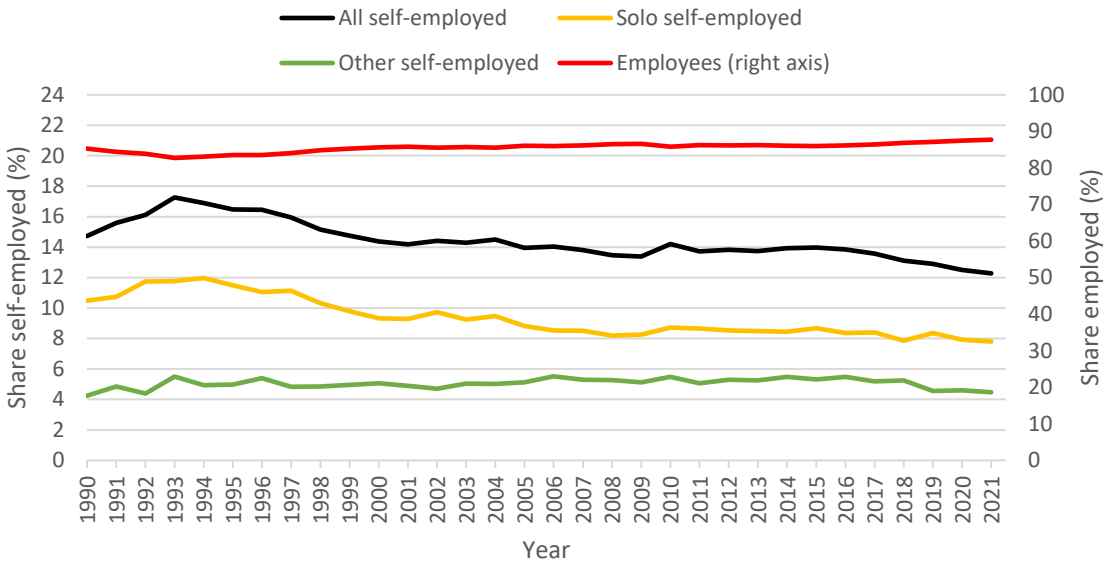
Note: Sample is individuals aged 25–60 (employee as main socioeconomic status). Earnings includes wage income and sample is wage earners. Employer costs are average values in state, municipal and private sectors, authors' calculations and IDS.

Source: Income Distribution Survey 1990–2021, Statistics Finland.

4.5 Self-employment

Figure 24 illustrates the relative shares of employees and self-employed people in the employed population aged 25–60. The share of self-employed has ranged between 12% and 17%. The share of the self-employed among this population went up during the 1990s recession due to rising unemployment among wage earners (see Figure 7), peaking at 17% in 1993. The share of solo self-employed (yellow line) fell slightly from 10% to 8%, reflecting mostly a reduction in the share of agricultural solo self-employed (from 5% in 1990 to 1% in 2021). As a result, the share of solo self-employed among all entrepreneurs has remained quite stable at 65–71% during the period. The share of all agricultural entrepreneurs (both solo and with employees) among all entrepreneurs has gone down from 40% to 15%.

Figure 24. Share of employees and self-employed workers, over time

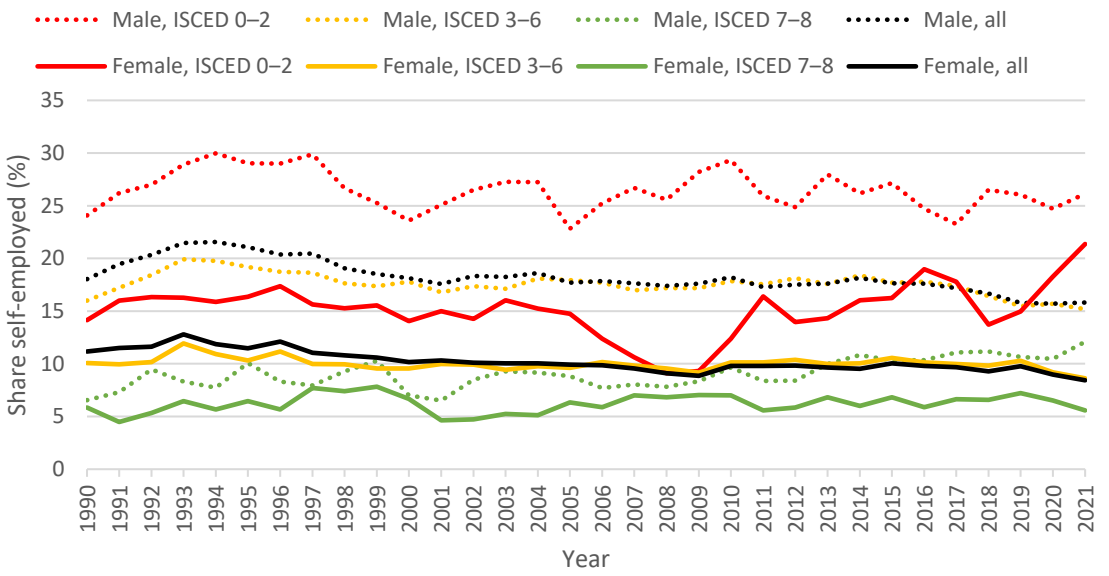


Note: Sample is individuals aged 25–60. 'Solo self-employed' are self-employed without employees, 'other self-employed' include self-employed with employees. Classification based on main socioeconomic status, whereby workers are defined as self-employed if they pay entrepreneurs' pension contributions and receive more income from self-employment than from employment.

Source: Income Distribution Survey 1990–2021, Statistics Finland.

Figure 25 illustrates that among the working population, men become self-employed more often than women: during the period, on average 18% of men were entrepreneurs, compared to 10% of women. There is a negative correlation between education level and the probability of being self-employed, as on average 26% of men with no education (ISCED 0–2) were self-employed, compared to on average 9% of men with the highest-level degree (ISCED 7–8).

Figure 25. Share self-employed by sex and education, over time

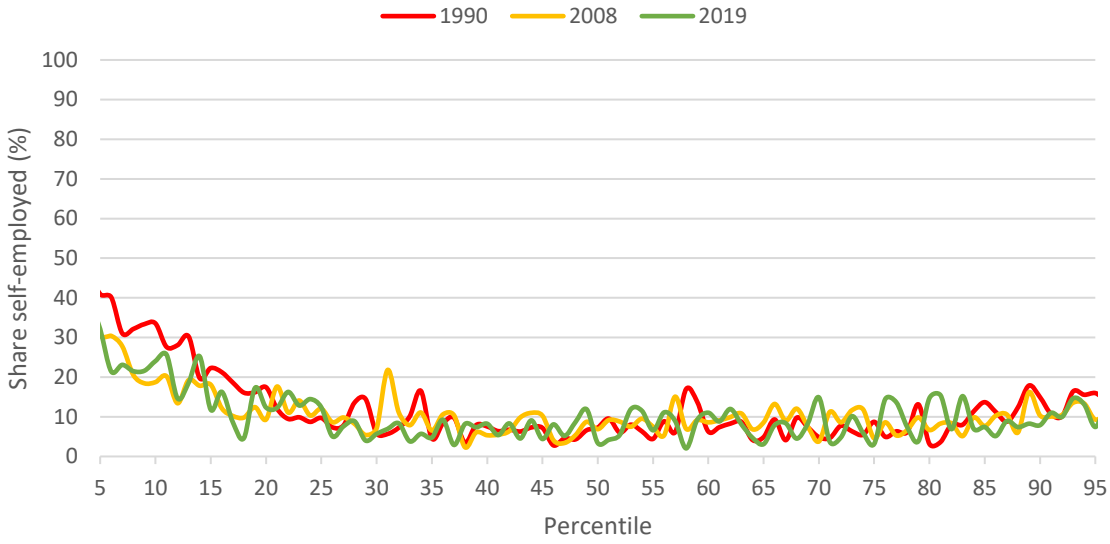


Note: Sample is individuals aged 25–60. Classification based on main socioeconomic status, whereby workers are defined as self-employed if they pay entrepreneurs' pension contributions and receive more income from self-employment than from employment.

Source: Income Distribution Survey 1990–2021, Statistics Finland.

Among all workers, the self-employed are more concentrated at the bottom of the income distribution when we focus only on wage income and self-employment income, as illustrated by Figure 26. However, this figure masks important heterogeneity, and furthermore the concept of income is important here. The earnings composition of entrepreneurs in Finland is strongly affected by the tax system (see, for example, Jäntti et al., 2010). Finnish entrepreneurs from limited liability companies can take out income from their firm as wage income, capital income, or retain profits within the company and potentially take them out in the future as capital income, or a mixture of these. (See also Box 4.3 and Paukkeri et al., 2023.) Figure 26 takes only wage and self-employment income into account. If we add capital income to the income measure on the horizontal axis, and furthermore look at entrepreneurial types separately, we find that the solo self-employed are more likely to be in the bottom income percentiles, and employer-entrepreneurs at the top percentiles. Harju, Juuti and Matikka (2023) also note that the position of the self-employed in the income distribution differs between incorporated and unincorporated business owners.

Figure 26. Share self-employed by percentile of individual earnings, selected years



Note: Sample is individuals aged 25–60. Earnings includes wage income and self-employment income. Classification based on main socioeconomic status, whereby workers are defined as self-employed if they pay entrepreneurs' pension contributions and receive more income from self-employment than from employment.

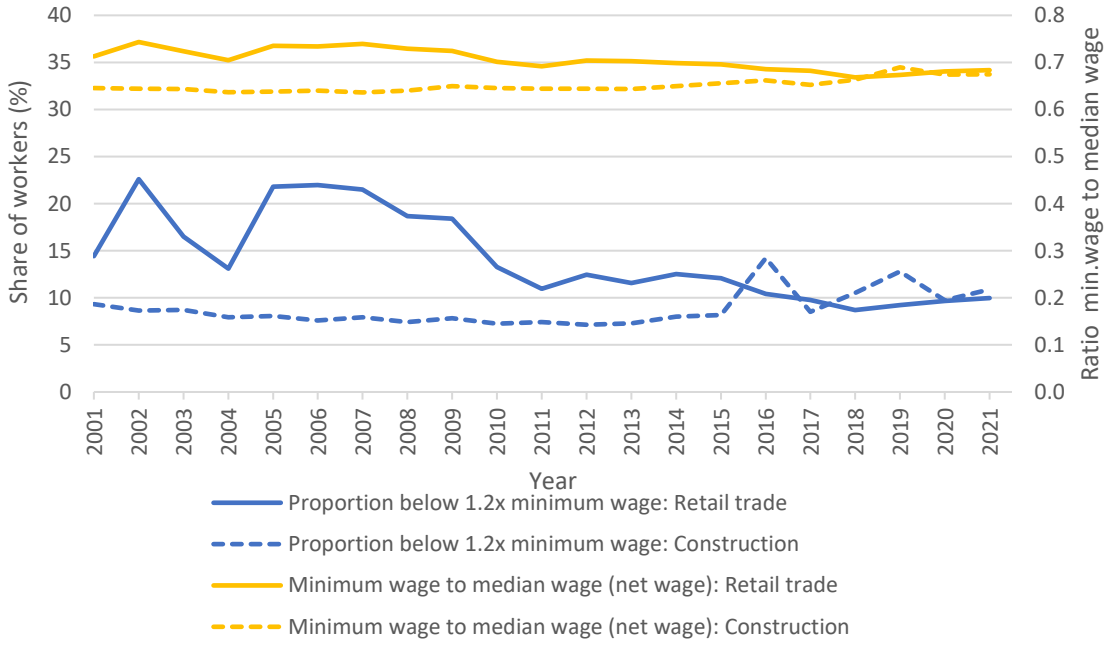
Source: Income Distribution Survey 1990–2021, Statistics Finland.

5. Labour market institutions

5.1 Minimum wage and unions

There is no general statutory minimum wage in Finland, but numerous sector-specific collective bargaining agreements stipulate minimum wages for particular jobs, depending for example on job characteristics or the worker's education or experience in the field. Here we illustrate the bite of the minimum wage in the construction and retail trade sectors. To do this, we use the lowest task wages in the industry and compare the wages of all workers in that sector to this wage level. Even though the true, individual-specific minimum wage would be higher for many workers, these industry lowest wages can be thought of as comparable to a statutory minimum wage, as lower wages than this cannot be paid to anyone in the sector. Figure 27 illustrates that wages are more concentrated towards this sector minimum in the retail sector than in the construction sector (blue lines), even though these lowest sector wages are quite high relative to the industries' median wages (yellow lines). The differences between sectors diminished in the late 2010s. However, Böckerman et al. (2017) show that wages are more strongly concentrated towards the individual-specific minimum wages in both sectors, which is expected as they are the true binding minimums for individual workers.

Figure 27. Bite of the minimum wage, over time, selected sectors



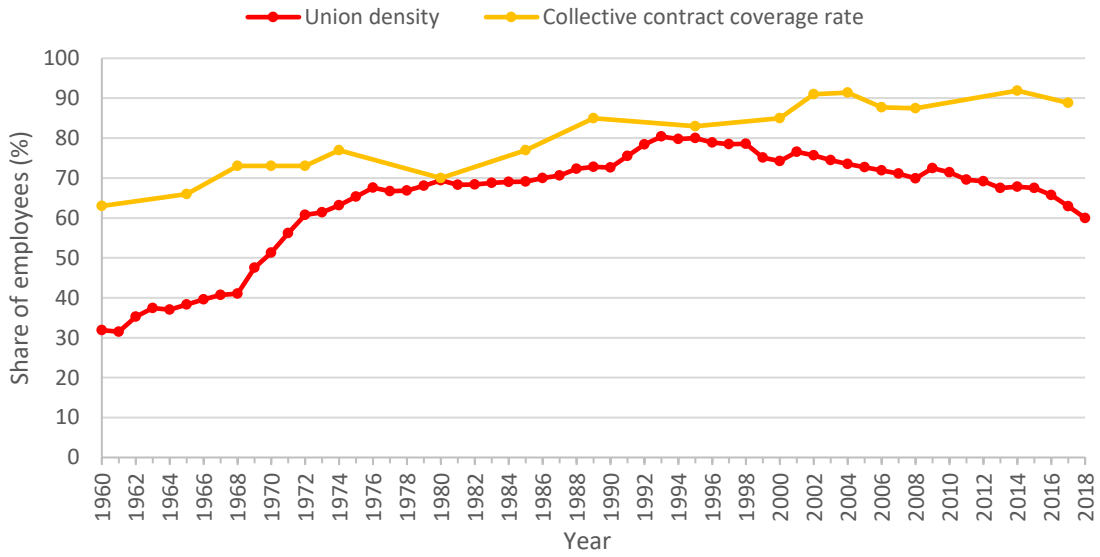
Note: Sample is individuals aged 25–60 who are full-time workers with main employment in construction (hourly contracts) or retail trade (monthly compensation contracts). Wage measure is hourly wage (construction) or monthly compensation (retail) for contracted hours without overtime. 'Net wage' referes to wage excluding employer social security contributions. Minimum wages are sector's lowest wages stipulated in collective agreement contracts in each year (excluding trainee wages).

Source: Structure of Earnings Surveys (SES) for private, state and municipal sectors 1995–2021, Statistics Finland, and collective agreements for retail trade and construction sectors, 2001–21. We thank Tuomas Kosonen for the data on collective agreements.

Figure 28 illustrates how labour union density is and has traditionally been very high in Finland, peaking at 80% in the early 1990s. Since then, there has been a steady decline in membership rates, but nevertheless the coverage rate remains very high due to the fact that contracts are extended to all workers in sectors where more than 50% of workers are union members. In the state and municipal sectors, the negotiated contracts always cover all workers, and hence coverage in those sectors is 100%. According to estimates of the Ministry of Economic Affairs and Employment

(Ahtiainen, 2019), in 2017 the private sector coverage rate was 84%, making the overall coverage rate across sectors 89%.

Figure 28. Union density and fraction of workers covered by collective bargaining agreements, over time



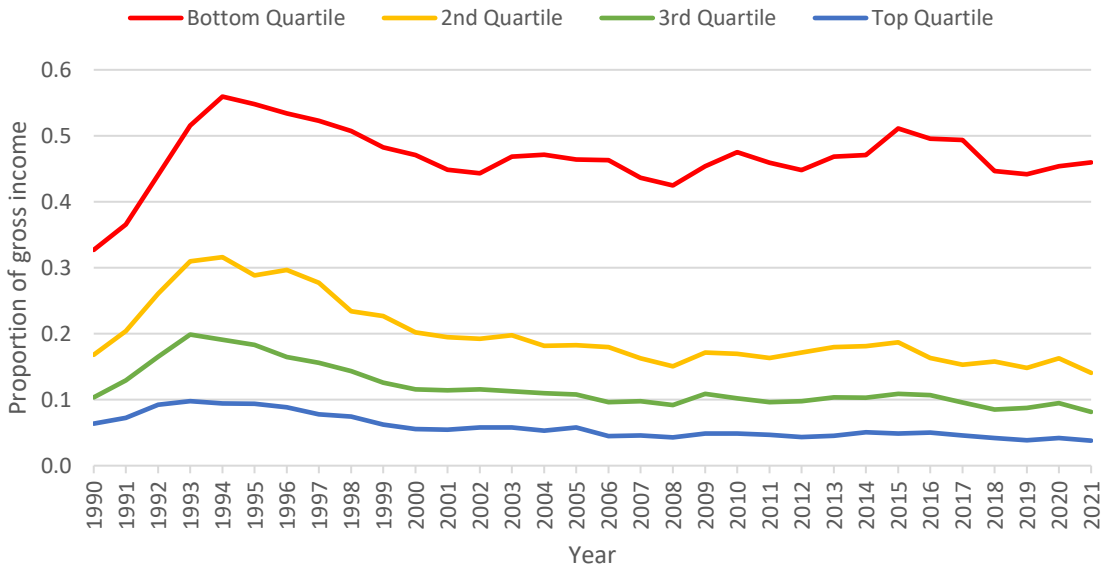
Note: Union density is union membership as a proportion of employees. It takes into account all union members regardless of age, excluding students, pensioners and unemployed. The coverage rate gives the proportion of employees covered by a collective agreement.

Source: OECD/AIAS ICTWSS database.

5.2 Role of direct taxes and benefits (financial transfers from the state)

Figure 29 displays the share of benefits in gross income by net household income quartile for individuals aged 25–60. During the 1990s recession, the share of benefits rose in all income quartiles, the most in the bottom quartile. After the recovery from the recession, in the 2000s the share of benefits remained at around 46% in the bottom quartile. By 2000, the share of benefits had fallen to 1990 levels in all other income quartiles except the bottom quartile. In this quartile, unemployment benefit recipiency remained permanently at high levels. Benefits are much less important in other income quartiles, but even the top quartile have received around 5% of their income from benefits since 2000.

Figure 29. Benefits as a proportion of gross income, by net household income quartile

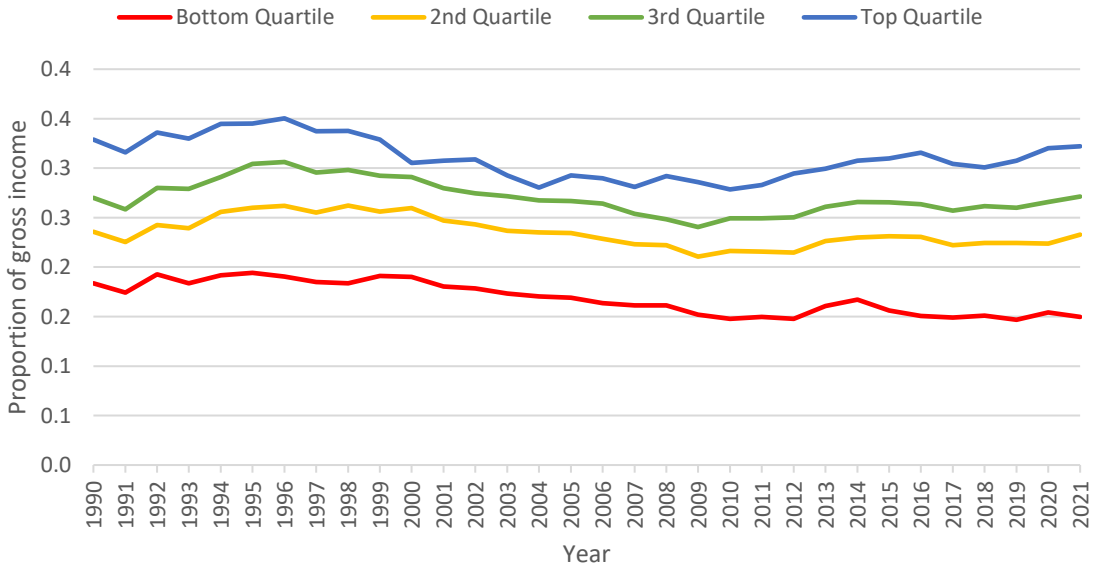


Note: Sample is individuals aged 25–60. All incomes equivalised using the modified OECD equivalence scale. Gross benefits as a proportion of overall gross income. Here, gross income includes realised capital gains.

Source: Income Distribution Survey 1990–2021, Statistics Finland.

Figure 30 illustrates the share of direct taxes paid from gross income. These include income tax, capital tax, wealth tax until 2005, and employee social security contributions. In 1993, a major tax reform was implemented, where formerly joint taxation of earnings income and capital income was changed into a dual income tax model, with flat capital income tax rate and a progressive earnings tax rate. As a consequence, for high earners capital income was taxed at a lower tax rate than the progressive state income tax rate. This is visible in the reduction of average tax rates especially at the top of the distribution since 1995. Earnings income taxation has also been lowered since 2000, reducing tax rates for all groups. Since 2012, taxation has been tightened across all income groups.

Figure 30. Direct taxes as a proportion of gross income, by net household income quartile

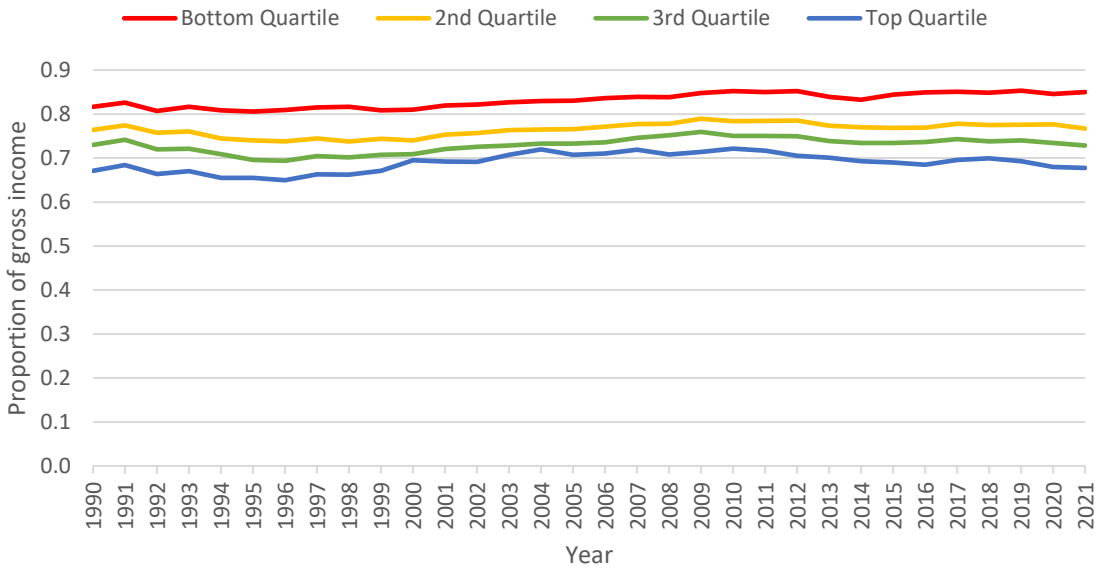


Note: Sample is individuals aged 25–60. All incomes equivalised using the modified OECD equivalence scale. Here, disposable income and gross income include realised capital gains.

Source: Income Distribution Survey 1990–2021, Statistics Finland.

Figure 31 illustrates the mirror image of Figure 30, disposable income relative to gross income. Those in the bottom quartile in 1990 kept around 83% of their gross income, whereas those in the top quartile kept around 69%. Figure 31 illustrates that taxation has been progressive, but the progressiveness has decreased at the upper end of the distribution. After the change in the tax system in 1993, the share of disposable income in gross income for the top income earners converged to that for the third quartile, but has again become slightly differentiated since 2012.

Figure 31. Disposable income as a proportion of gross income, by net household income quartile

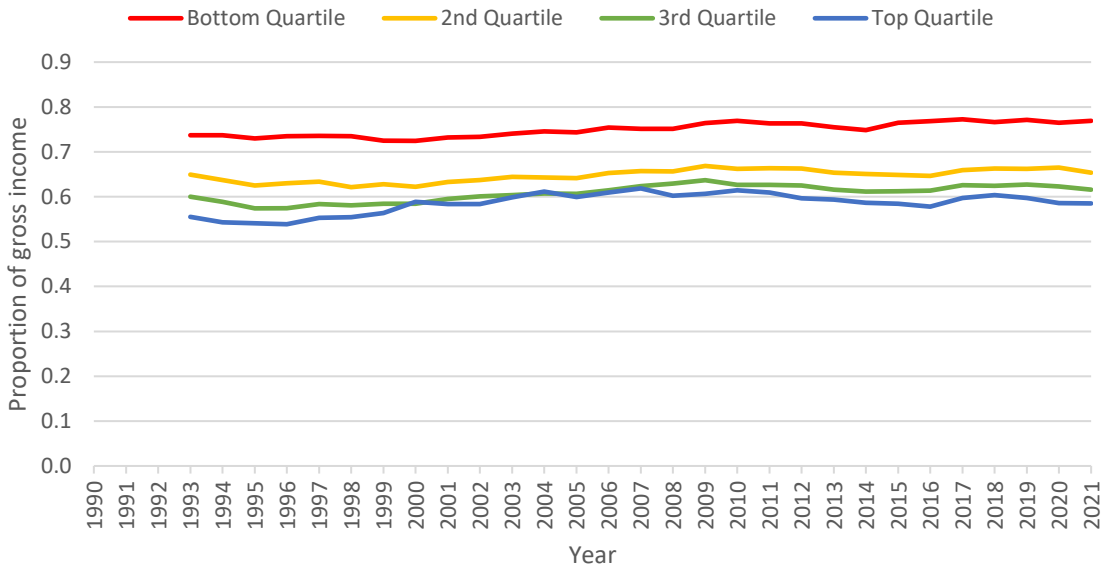


Note: Sample is individuals aged 25–60. All incomes equivalised using the modified OECD equivalence scale. Here, disposable income and gross income include realised capital gains.

Source: Income Distribution Survey 1990–2021, Statistics Finland.

Figure 32 clearly illustrates an increase in the share of capital income and option income among top income earners. When the income concept is extended to include employers' social insurance contributions, the disposable income of the top income earners relative to gross income converges further to the third quartile. The employer does not pay mandatory employer contributions on income from stock option programmes or capital income.

Figure 32. Disposable income as a proportion of gross income and employer social security contributions, by net household income quartile



Note: Sample is individuals aged 25–60. All incomes equivalised using the modified OECD equivalence scale. Here, disposable income and gross income include realised capital gains.

Source: Income Distribution Survey 1990–2021, Statistics Finland.

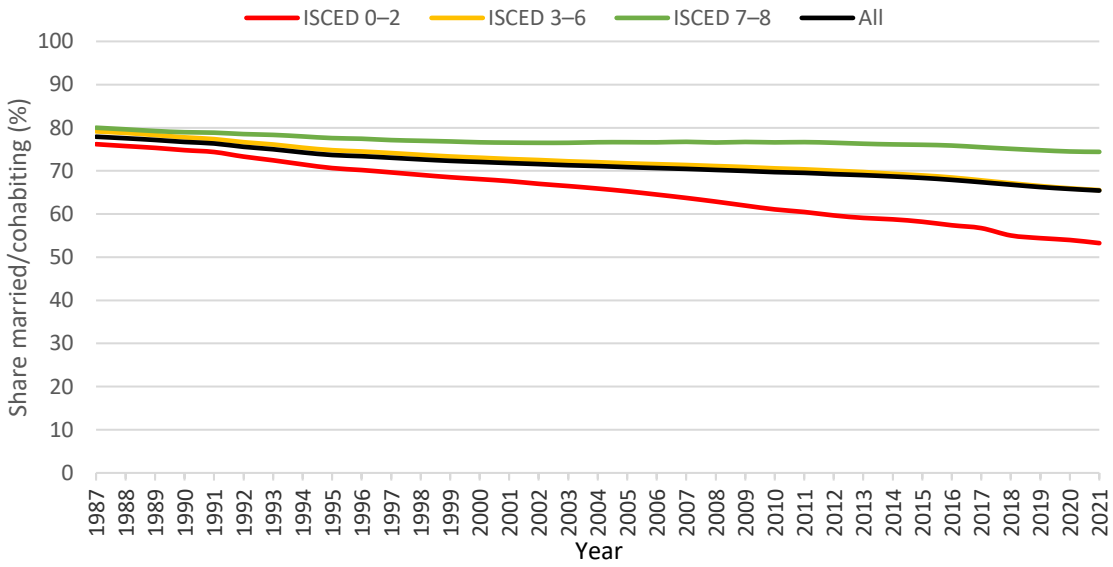
6. Household incomes

In this section we move from the individual level to households. We first illustrate how household composition and assortative matching have evolved since 1987, and then discuss inequalities in household incomes.

6.1 Trends in household composition

Figure 33 shows the share of married or cohabiting individuals by education group. The share married or cohabiting has decreased steadily over time, and this development has been faster in lower education groups (ISCED 0–2) and relatively mild in the higher-education groups (ISCED 7–8). In 1987, 78% of all individuals lived with a partner, while in 2021 this share was 65%. For the lowest-education group, the share has decreased the most, from 76% to 53% – however, as the average education level has risen over time, the share of individuals with only compulsory education has decreased from 44% to 14%, as shown in Figure 3. Our data do not distinguish between marriage and cohabitation, but overall, among married and cohabiting families the share of cohabitation has risen from 17% in 1992 to 28% in 2021 (Statistics Finland, 2023a).

Figure 33. Share married/cohabiting, overall and by education, over time

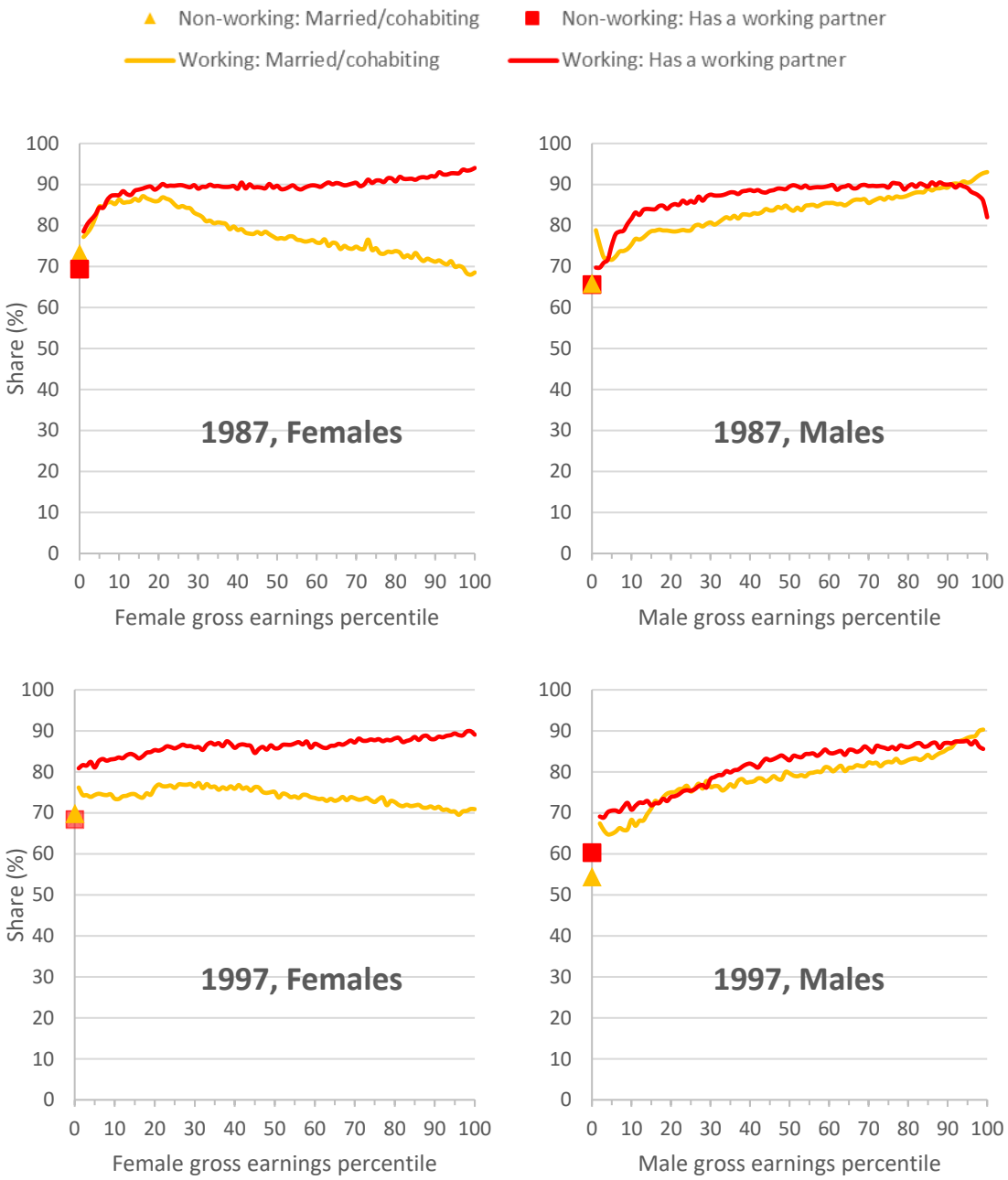


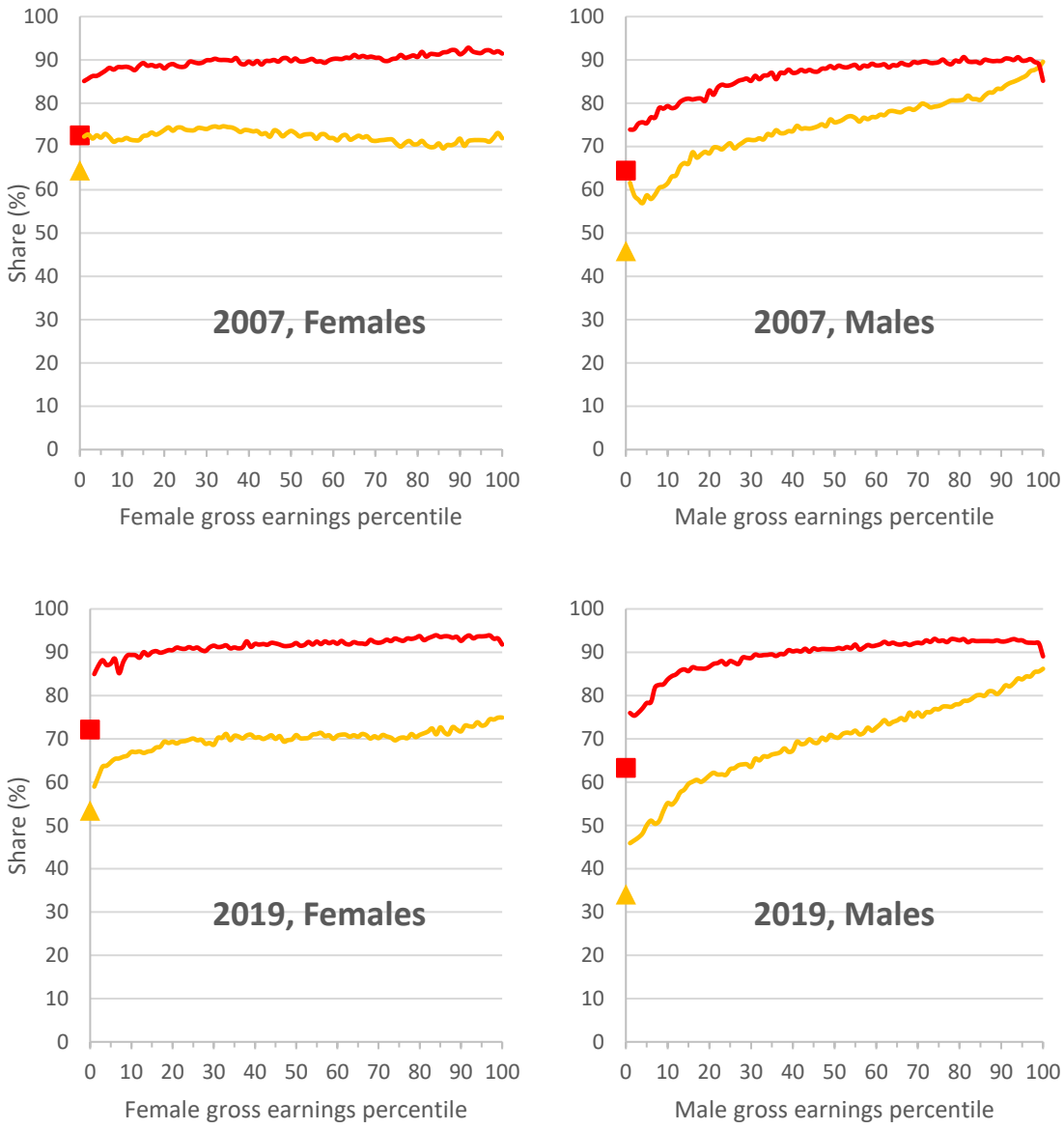
Note: Sample is individuals aged 25–60.

Source: FOLK Basic data 1987–2021, Statistics Finland.

Figure 34 shows the share of married or cohabiting individuals by position in the gender-specific earnings distribution. In 1987, women at the top of the earnings distribution were less likely to be married or cohabiting compared to women lower in the distribution, while the pattern was the opposite for men. Over time, this income gradient has softened for women, and even slightly overturned by 2019. For men, the income gradient has become steeper over time. In 2019, in the bottom decile roughly half of the men were married or cohabiting while for the upper decile the same figure was 84%. Non-working men and women are less often married or cohabiting, and less often have a partner who works, than their working counterparts. The share of non-working women who have a partner has decreased by approximately 20 percentage points in 30 years, standing at 55% in 2019. For non-working men, the changes in partnerships have been more dramatic. In 1987 the share of non-working men with a spouse was around 66%, while in 2019 the respective figure was 35%.

Figure 34. Share married/cohabiting and share with working partner, by sex and individual gross earnings percentile, selected years



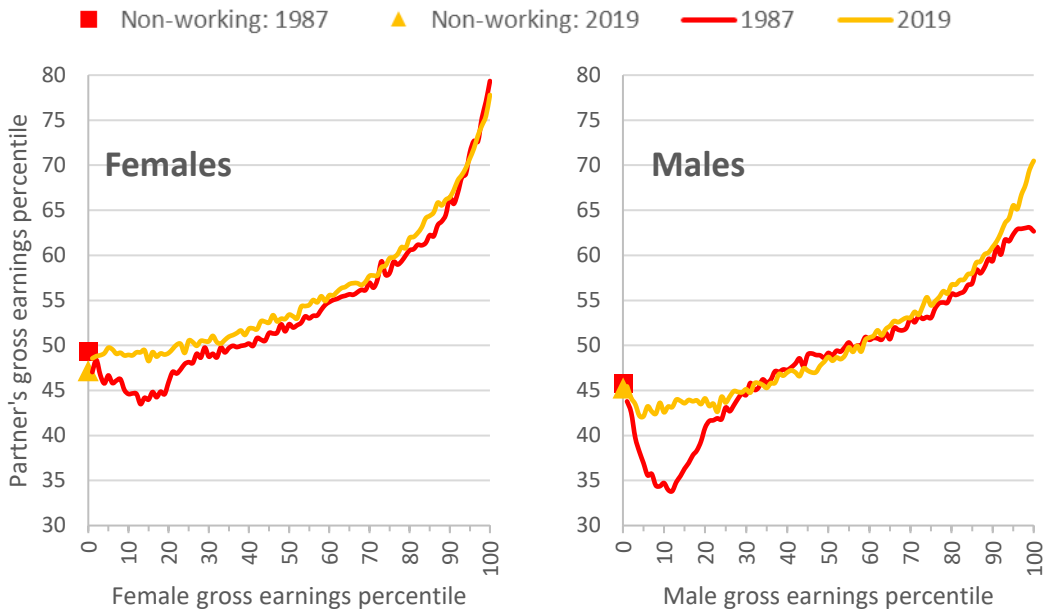


Note: Sample is individuals aged 25–60. Married/cohabitating also includes civil partnerships. The proportion with a working partner is conditional on being married/cohabiting. Earnings includes wage income and self-employment income.

Source: FOLK Basic, FOLK Income and FOLK Household-dwelling unit data 1987–2021, Statistics Finland.

Figure 35 looks at the correlation of working spouses' position in the income distribution. There is a strong positive correlation between own and spousal earnings. The correlation is stronger for women, and there has been little change over the 30-year period. For men, the correlation has become slightly stronger at the upper end of the distribution and weaker at the lower end.

Figure 35. Mean gross earnings percentile of partner/spouse by individual's gross earnings percentile, selected years

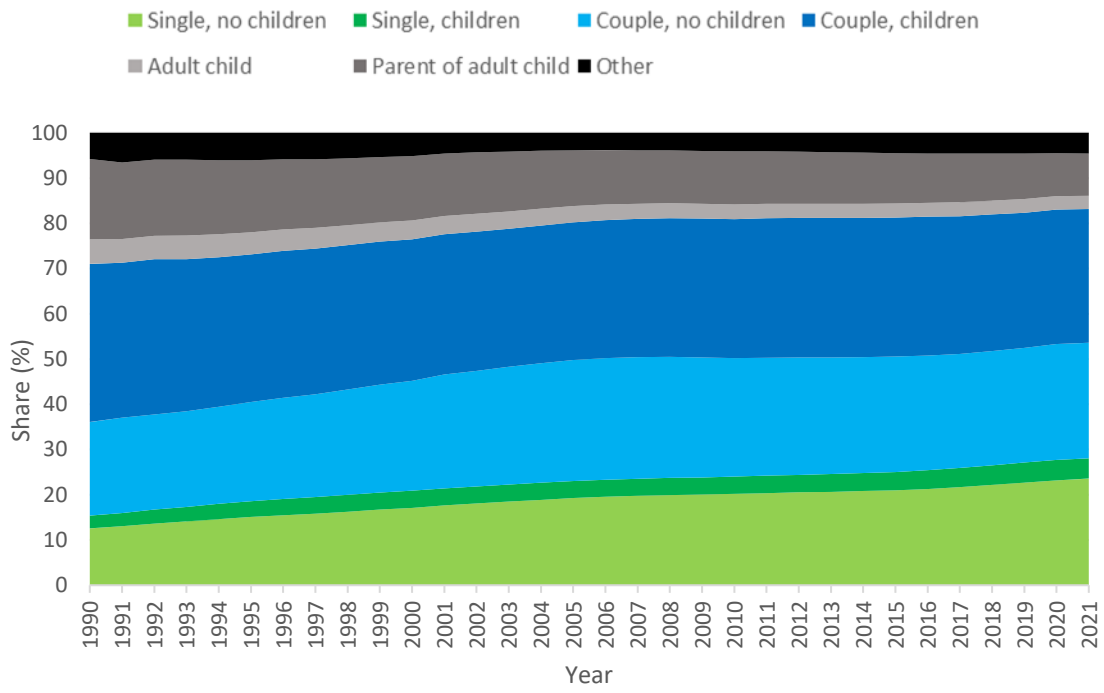


Note: Sample is individuals aged 25–60. Earnings includes wage income and self-employment income. Gross earnings distributions only include working individuals. Non-working men and women on the horizontal axis are shown in percentile 0. The horizontal axis displays the individual's position in the gender-specific earnings distribution, and the vertical axis the spouse's position in the spouse's gender-specific income distribution.

Source: FOLK Basic, FOLK Income and FOLK Household-dwelling unit data 1987–2021, Statistics Finland.

Figures 36 and 37 illustrate changes in household composition over time. In Figure 36 we see that the share of individuals living in a single adult household increased from 16% in 1990 to 28% in 2021. Also the share of individuals living with a partner and without children has increased somewhat (5 percentage points), while those with a partner and with children has decreased by 5 percentage points. Taking into account all individuals living with children (single parents, couples with children, parents with adult children), the share decreased from 56% in 1990 to 43% in 2021.

Figure 36. Share of individuals by position in the household, over time

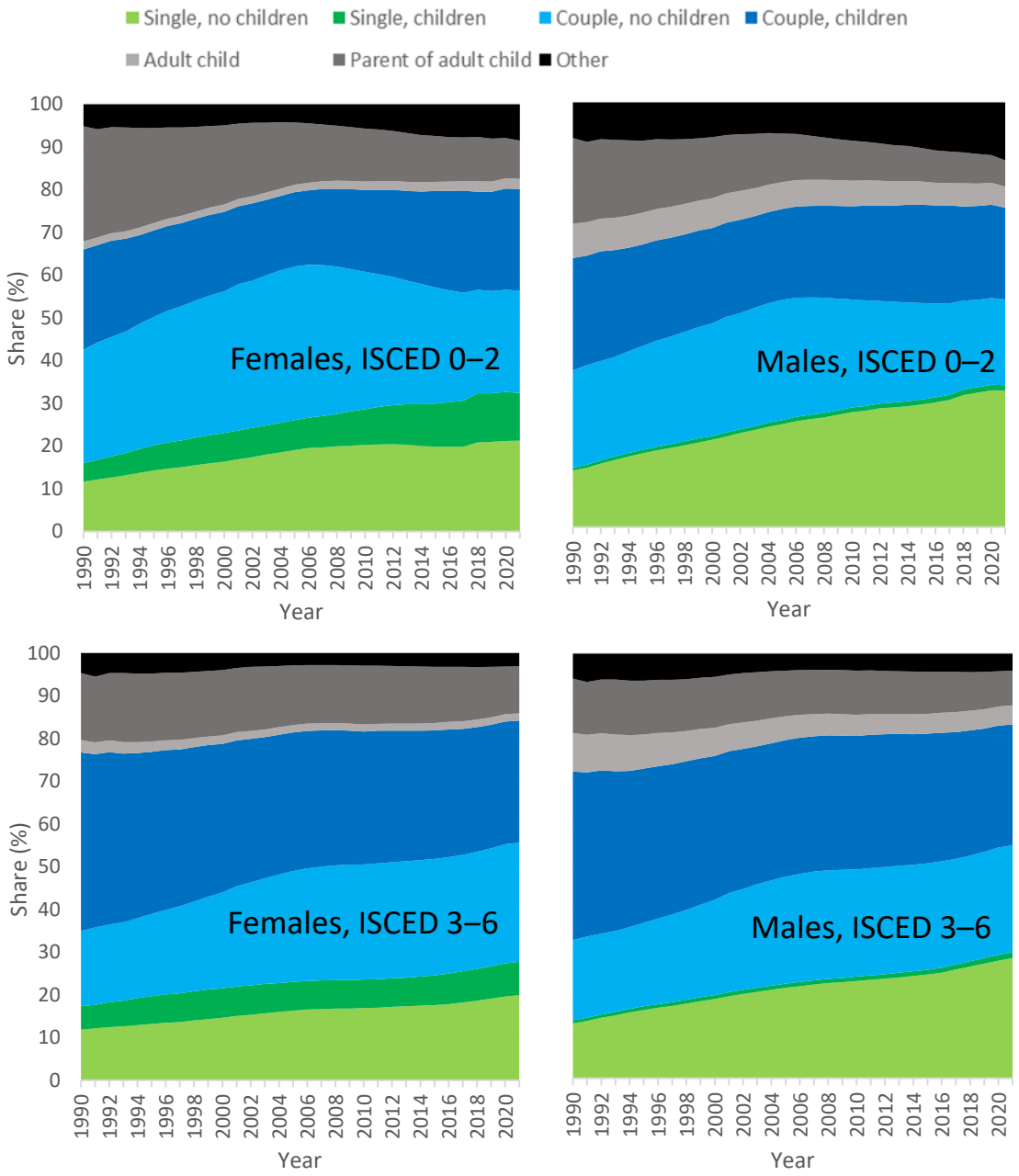


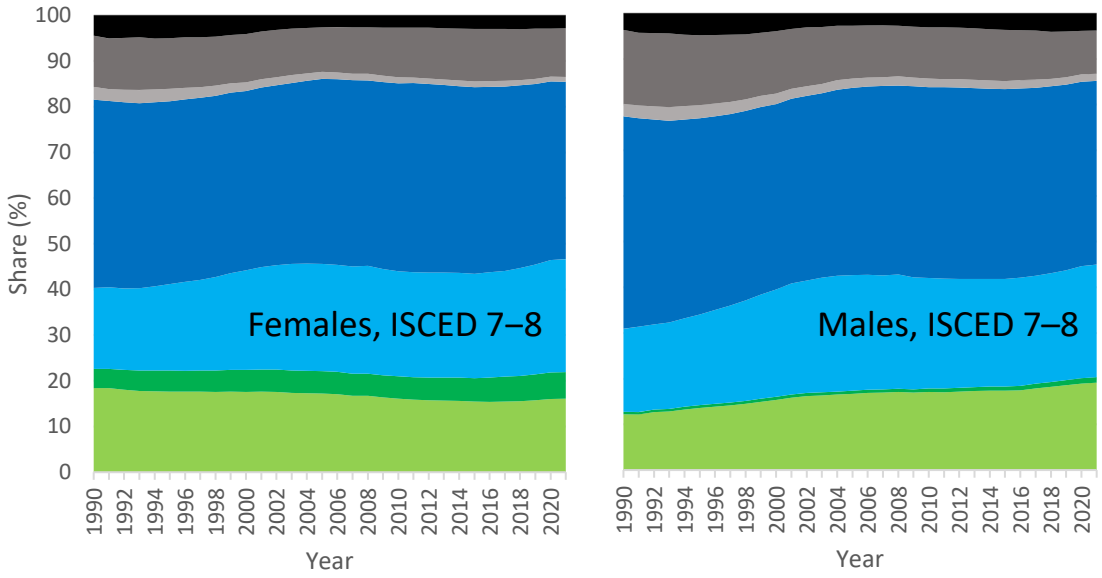
Note: Sample is individuals aged 25–60. See Data Appendix for the formation of the household link. The figure illustrates the share of individuals in different categories (and not the share of households in different household types). Hence the individuals who live with a partner are both counted separately (if they are both 25–60 years old). 'Single, children' and 'couple, children' refer to individuals with only underaged children in the household. 'Adult child' refers to an individual who lives with their parent(s). 'Parent of adult child' refers to individuals in such households who are the parent. 'Other' includes, for example, individuals who live with multiple families in the same household.

Source: FOLK Basic and FOLK Household-dwelling unit data 1987–2021, Statistics Finland.

Figure 37 shows household composition by education and sex. While the share of individuals in single adult households has increased in most education–sex groups, the change has been more pronounced for low-education groups. High-educated women are the only group where this share has not increased. In middle- and high educated groups there were more individuals living with a partner and without children, and fewer individuals with a partner and with children in 2021, than there were in 1990. The share of all individuals living with children (single parents, couples with children, parents with adult children) has decreased the most for low-educated men and stayed constant for high-educated women. The shares of adult children living with their parent(s) is much higher for the low- and medium-educated men than for the other groups, even though the share has decreased over time.

Figure 37. Share of individuals by position in the household, by sex and education, over time





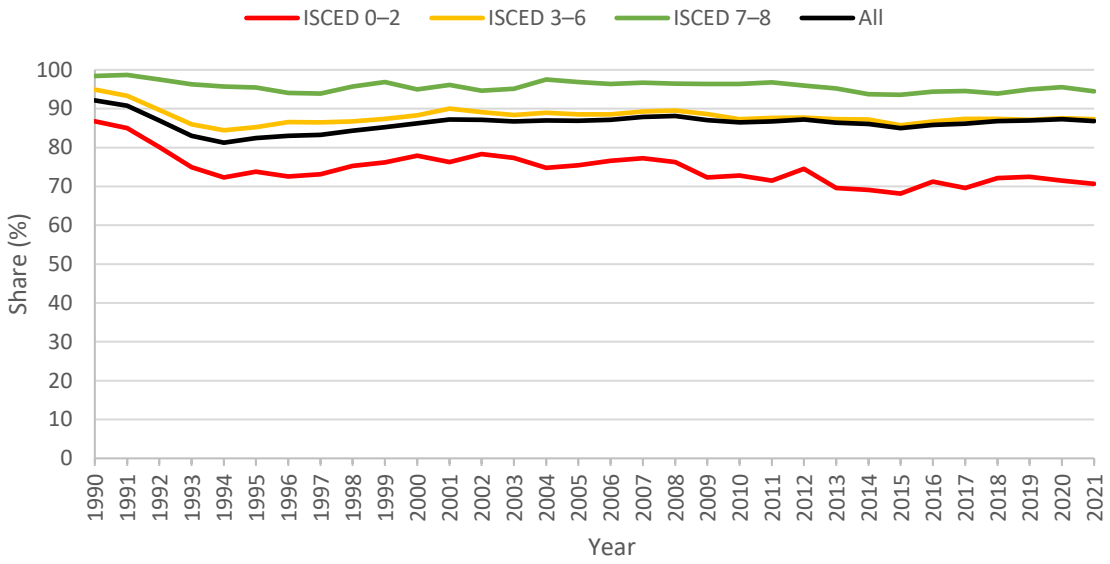
Note: Sample is individuals aged 25–60. See the Data Appendix for the formation of the household link. The figure illustrates the share of individuals in different categories (and not the share of households in different household types). Hence the individuals who live with a partner are both counted separately (if they are both 25–60 years old). 'Single, children' and 'couple, children' refer to individuals with only underaged children in the household. 'Adult child' refers to an individual who lives with their parent(s). 'Parent of adult child' refers to individuals in such households who are the parent. 'Other' includes, for exmaple, individuals who live with multiple families in the same household.

Source: FOLK Basic and FOLK Household-dwelling unit data 1987–2021, Statistics Finland.

6.2 Earnings and incomes among working households

Figure 38 illustrates that the share of individuals in a household where at least one member works, decreased in the early 1990s when the unemployment rate quadrupled. Since then, the share of individuals in working households has slowly increased but had not reached the 1990 level by 2021. This phenomenon applies to all levels of education, but the effect has been smaller for higher levels of education. Since the financial crisis, for people with low educational attainment (ISCED 0–2), the likelihood of living in a working household was as low as in the recession of the 1990s.

Figure 38. Share of individuals in a working household, overall and by education, over time

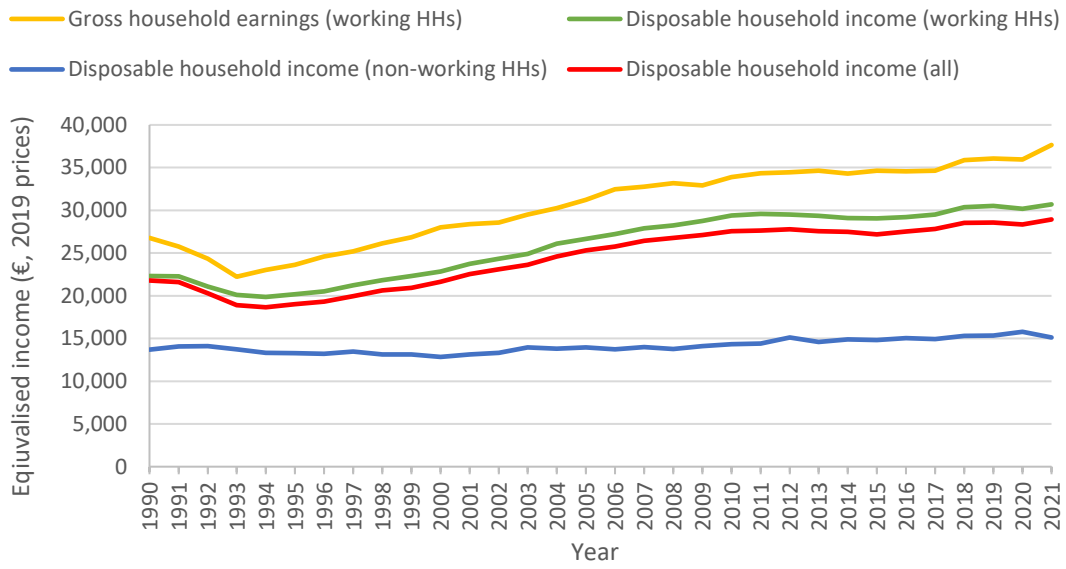


Note: Sample is individuals aged 25–60. A working household is defined as a household in which at least one adult (18 years or older) is in work.

Source: Income Distribution Survey 1990–2021, Statistics Finland.

Until now, we have focused on earnings of the employed. Figure 39 shows how other income (capital income and benefits) and taxation affect the income trends of working households, and what the trend looks like if we consider non-working households too. The trend of working households' disposable income (green line) is very similar to the trend of earnings (yellow line), although taxation and benefits smooth the trend of disposable income compared to earnings. The disposable income of non-working households has been unchanged in real terms, but the gap in disposable income between working and non-working households has widened. As the proportion of non-working households increased in the early 1990s (see Figure 38), the median disposable incomes of all households (red line) and working households (green line) diverged, but the difference has stayed roughly constant in relative terms since the recession.

Figure 39. Median real gross household earnings and disposable household income among working households, over time

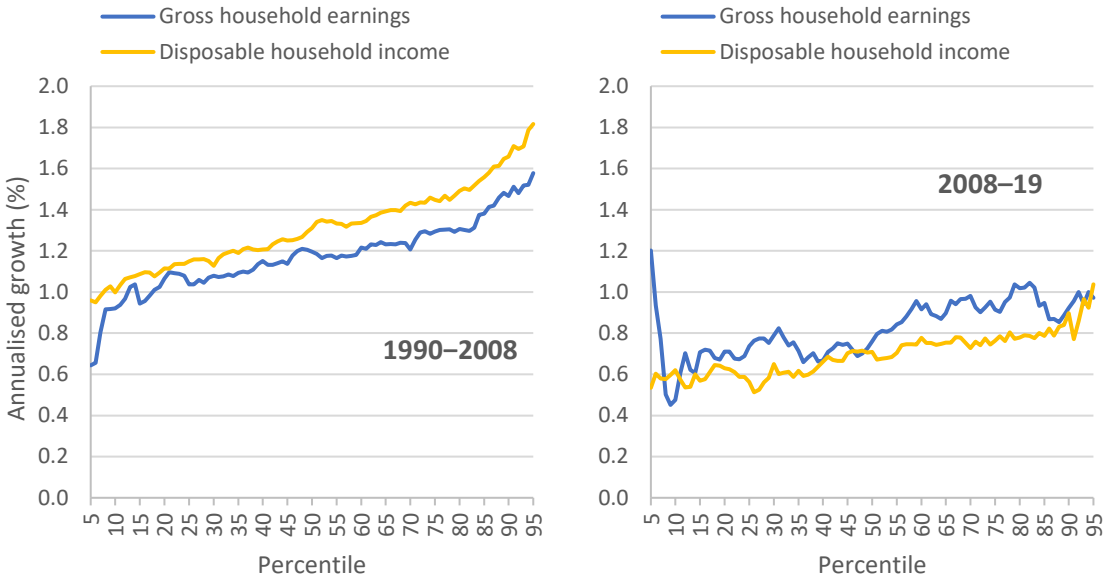


Note: Sample is individuals aged 25–60. A working household is defined as a household in which at least one adult is in work. All incomes equivalised using the modified OECD equivalence scale.

Source: Income Distribution Survey 1990–2021, Statistics Finland.

Figure 40 illustrates how households' gross earnings and disposable income have grown during 1990–2008 and 2008–19. Gross household earnings and disposable household income for working households have grown more for the higher income percentiles, and growth was stronger in the earlier period. Due to the tax and benefit system, as well as other income components such as capital income, annual growth in disposable income was higher than earnings growth in the earlier period, while the opposite is true in the later period. During 1990–2008, the importance of capital income for high earners increased. Furthermore, taxation was reduced for high earners through capital income taxation and for middle earners through earnings income taxation.

Figure 40. Annualised growth in real gross household earnings and household disposable income for working households, by percentile, selected years



Note: Sample is individuals aged 25–60. A working household is defined as a household in which at least one adult is in work. All incomes equivalised using the modified OECD equivalence scale.

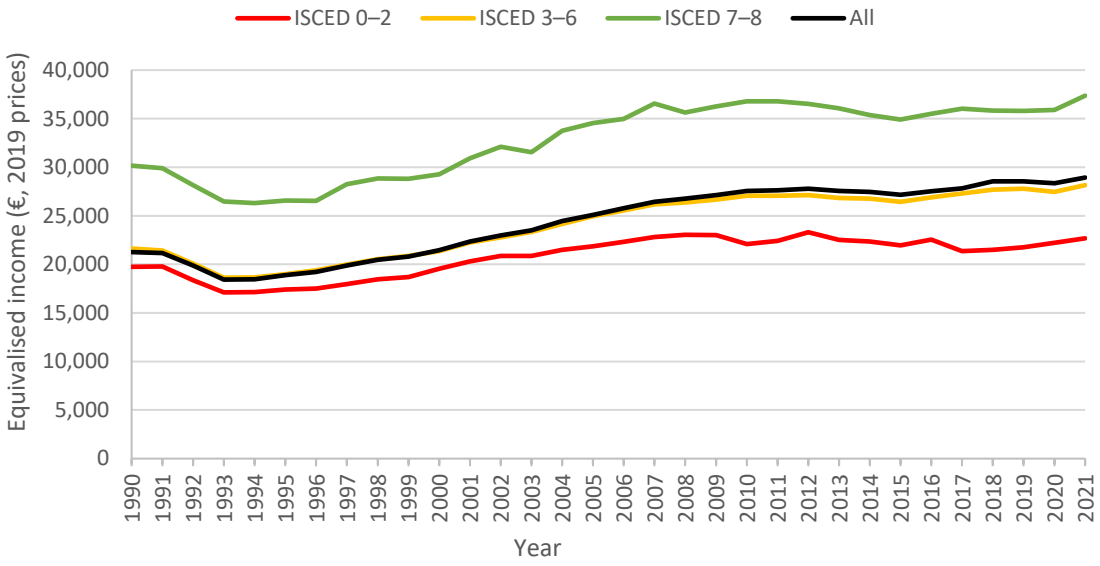
Source: Income Distribution Survey 1990–2021, Statistics Finland.

6.3 Inequality in incomes among all households

Until now, we have mostly looked at employed individuals and focused on their earnings income. In this section we focus on household disposable income for the whole population aged 25–60.

Figure 41 describes median disposable household income by education group. During the recession years of the early 1990s, disposable household income declined regardless of educational attainment. By 1993, median incomes had fallen by 13% from the level in 1990. By the early 2000s, median incomes had recovered to pre-recession levels, and continued growing. On average, the financial crisis did not lower disposable household income, even though net national income fell in Finland. However, income growth stalled for a decade. In the COVID-19 crisis, disposable income dropped by 1% in 2020. Median disposable household income grew by 42% in real terms from 1995 to 2008, and by only 8% from 2008 to 2021.

Figure 41. Median real disposable household income for all households, overall and by education, over time



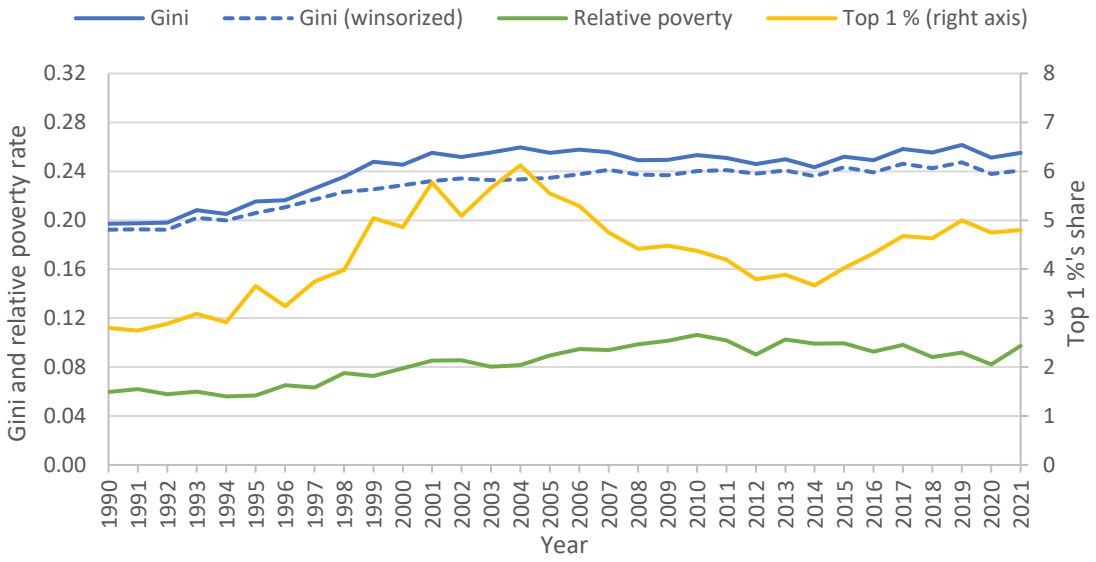
Note: Sample is all individuals aged 25–60. Incomes measured net of taxes and benefits. All incomes equivalised using the modified OECD equivalence scale.

Source: Income Distribution Statistics 1990–2021, Statistics Finland.

Figure 42 shows how disposable household income inequality among 25–60-year-olds increased considerably after the early 1990s. The Gini coefficient increased from 0.20 in 1990 to 0.26 during 2003–07, and has remained close to this high level since then. Income shares of top 1% of income earners more than doubled from 2.8% in 1990 to 6.1% in 2004. From this peak, the top 1% share went down until 2014 (3.7%) and then rose sharply again to 5% in 2019. Relative poverty increased more slowly, from 6% during 1990–95 to a peak of 11% in 2010 and averaging 10% since the financial crisis. After the 1990s recession, unemployment went down during 1993–2007 (Figure 7), which reduced the disparities in market income. Continued long-term unemployment also increased the poverty rate (Riihelä, Sullström and Tuomala, 2008; Kauhanen., Riihelä and Tuomala, 2020). At the same time, a strong increase in capital income at the very top of the income distribution that widened income inequality, as well as tax reforms in the early 1990s that decreased tax progression, and cuts in social security after the recession, all increased inequality in disposable income (Riihelä, Sullström and Suoniemi, 2008). After the financial crisis, income inequality no longer widened, and inequality has stayed at a new higher level in Finland. The impact of the COVID-19 crisis is not clearly visible in these inequality measures (the relative poverty rate increased by 1.5 percentage points from 2020 to 2021), but it is likely the full effects will materialise in the longer term.

Given that the quality of data especially at the top of the distribution can vary considerably across countries, the winsorised Gini is better used for international comparisons. This winsorised Gini increased from 0.19 in 1990 to 0.24 in 2006 and has remained at roughly that level since then.

Figure 42. Gini, relative poverty and top 1% share of net household income for all households, over time

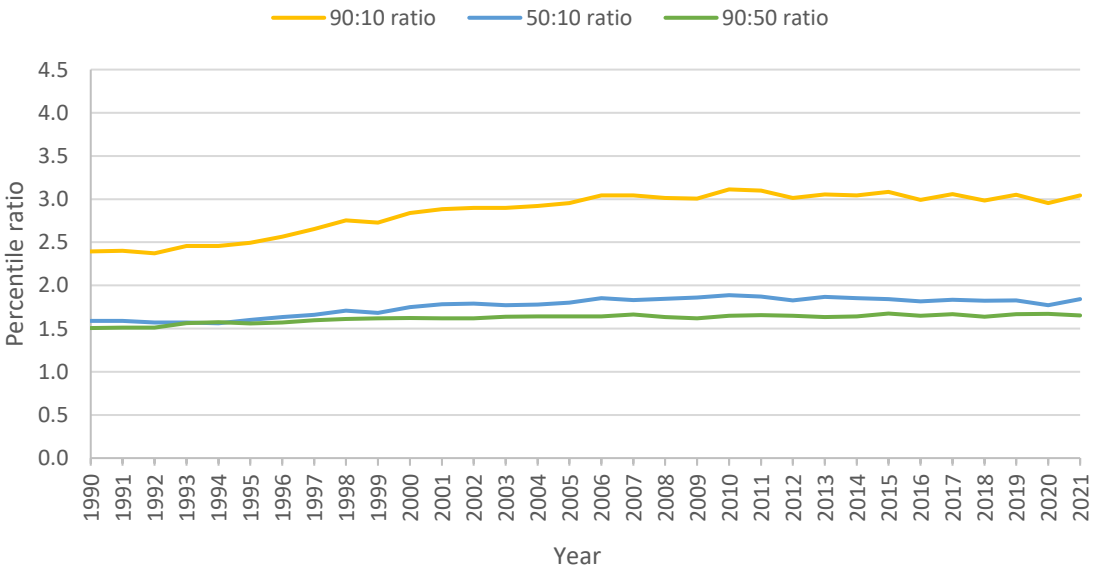


Note: Sample is individuals aged 25–60. Incomes measured net of taxes and benefits. All incomes equivalised using the modified OECD equivalence scale. The relative poverty rate is defined as a proportion of people living in households with less than 60% of median income. The winsorised Gini coefficient is calculated by winsorising income data at 0 and at the 99th percentile.

Source: Income Distribution Statistics 1990–2021, Statistics Finland.

Figure 43 illustrates that most of the increase in inequality in the late 1990s and early 2000s stemmed from the top of the distribution, as the 90:10 ratio increased from 2.4 in 1990 to approximately 3.0 in the decade after the financial crisis. The 50:10 ratio increased only from 1.5 in 1990 to 1.7 in 2007 and stayed approximately there afterwards.

Figure 43. Percentile ratios of disposable household incomes for all households, over time



Note: Sample is individuals aged 25–60. Incomes measured net of taxes and benefits. All incomes equivalised using the modified OECD equivalence scale.

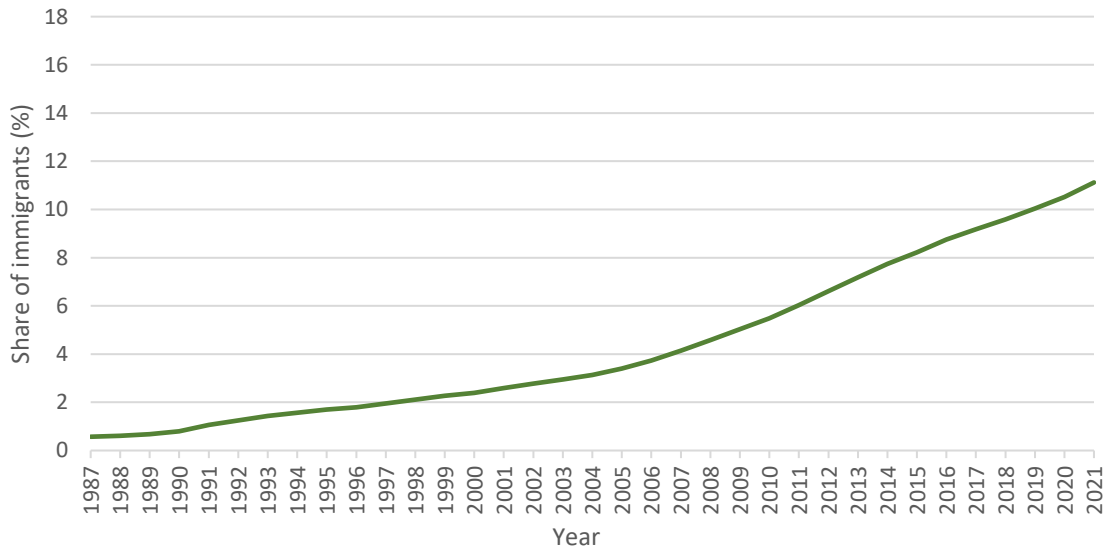
Source: Income Distribution Statistics 1990–2021, Statistics Finland.

7. Inequality between migrants and natives

Immigration is a relatively recent phenomenon in Finland. In 1987, only 0.6% of the population aged 25–60 were immigrants, and the share rose to 11% in 2021. In the early 1990s the share increased relatively rapidly, in particular due to the turmoil in Somalia, the former Soviet Union and former Yugoslavia, although absolute numbers were still small. Since 2007, growth in the immigrant population share has been quite rapid, with the share of immigrants increasing by approximately 0.5 percentage points per year. In the refugee crisis of 2014–15, Finland received unforeseen numbers of refugee applications, but this does not show in Figure 44, partly due to the lengthened duration in the application process, partly because a number of applications were soon withdrawn, and partly because some of the applicants were younger than the age group we consider here.

Since 1992, the share of EU-28 countries in immigrants' countries of origin has been around 25–30%, but within this group the share of the EU-15 countries has diminished dramatically, as the share of new EU countries that joined in the 2000s (in particular, Estonia) has increased strongly. In 2021 the two clearly largest countries of origin among immigrants were Estonia and the former Soviet Union, followed by much smaller groups such as Iraq, China, Somalia, Thailand and the former Yugoslavia. (Statistics Finland, 2023b, 25–59-year-olds).

Figure 44. Share of immigrants in the population aged 25–60, over time

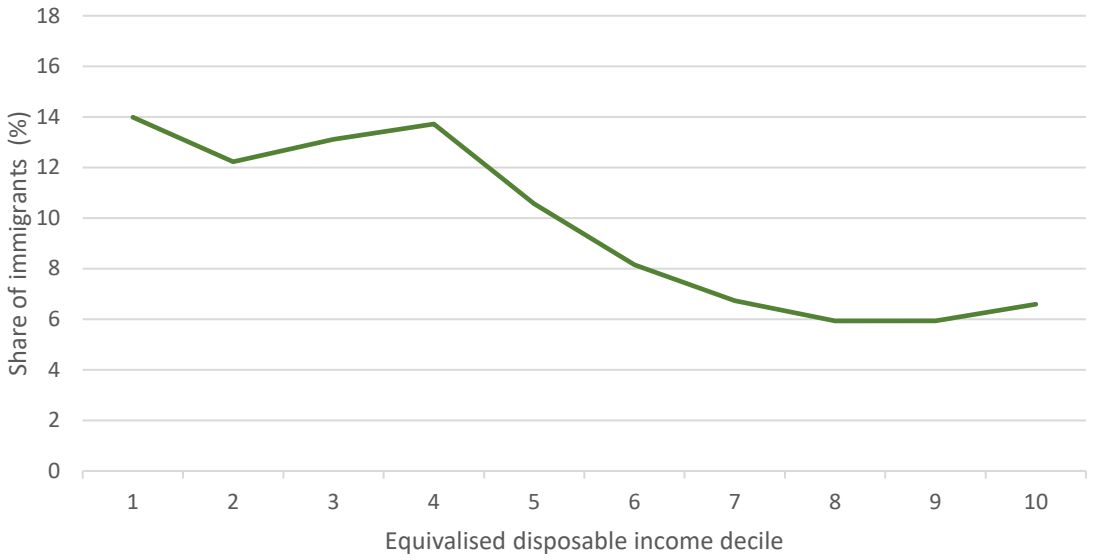


Note: Sample is individuals aged 25–60. An immigrant is defined as an individual whose parents were (or whose only known parent was) born abroad, and who him- or herself was born abroad.

Source: FOLK Basic data 1987–2021, Statistics Finland.

Figure 45 illustrates that in 2019, the immigrant population was overrepresented in the four bottom deciles and underrepresented in the four top deciles (as they form 10% of the working-age population in that year). Around 6% of individuals in the top of the distribution are immigrants.

Figure 45. Share of immigrants in the population 25–60 years of age, across the disposable income distribution, 2019



Note: Sample is individuals aged 25–60. An immigrant is defined as an individual whose parents were (or whose only known parent was) born abroad, and who him- or herself was born abroad. Here, disposable income includes realised capital gains.

Source: FOLK Basic and FOLK Household-dwelling unit data 1990–2021, Statistics Finland.

Figure 46 compares various outcomes of immigrants relative to natives in 2019. A bar higher (lower) than 1 would indicate the outcome is higher (lower) among the immigrant population. In our data, immigrant males are as often as highly educated as native males, and females less often, although it should be kept in mind that degrees obtained abroad are not typically registered in Finnish registers, so these numbers mostly reflect education obtained in Finland. High education shares could therefore be higher in reality. In terms of employment, working-age immigrants fare much worse than their native counterparts, as males are 19% less often employed than native counterparts, and females 34% less often. Those who work and are covered by the wage data have very similar weekly working hours to the native population. However, annual earnings are approximately 20% lower than those of the native population, as is disposable household income.

Figure 46. Outcomes of immigrants relative to natives, aged 25–60, 2019

Note: Sample is individuals aged 25–60. An immigrant is defined as an individual whose parents were (or whose only known parent was) born abroad, and who him- or herself was born abroad. The figure illustrates the average outcome of the immigrant population relative to the average outcome of the native population. 'Share high educated' is the share of ISCED 7–8 degrees. 'Employment rate' is the share employed in the last week of the year (see Section 2). 'Hours per week' includes regular weekly working hours and paid overtime hours. 'Personal earnings' includes wage income and self-employment income. 'Disposable household income' is measured net of taxes and benefits and equivalised using the modified OECD scale, and calculated for each individual of the household. Here, disposable income includes realised capital gains.

Source: FOLK Basic, FOLK Income and FOLK Household-dwelling unit data 1990–2021, and Structure of Earnings Surveys (SES) for private, state and municipal sectors 1995–2021, Statistics Finland.

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9. Data Appendix

Datasets and time periods studied:

- The various FOLK data modules by Statistics Finland are register datasets covering all resident Finns in 1987–2021.
    - FOLK Basic covers background information, for example, on year of birth, education, immigrant background, and income and employment status information during 1987–2021.
    - FOLK Income covers incomes in a consistent manner during 1995–2021.
    - With the FOLK Household-dwelling unit module 1987–2021 we can link household members and family members to each other.
- The Harmonised Structure of Earnings (SES) dataset by Statistics Finland consists of survey information collected from employers. The data are harmonised across years and across different employer sectors (municipal, state and private sector) for the years 1995–2018 (state), 1995–2019 (municipal), or 1995–2020 (private sector). As the harmonisation of data is related to the earliest years of data, we can use the available non-harmonised panel to bring all sectors up to 2021. The data excludes the smallest private-sector firms (with fewer than five employees), firms that are not members of employer unions (typically small firms) and top executives in firms. The data also excludes the agriculture, forestry and fishing sector, households as employers, and international organisations. The data fully cover the municipal and state sectors, and between 55% and 75% of private-sector employment in different years and industries.
- The Income Distribution Survey (IDS) is a survey covering 5% of the population, with information originating from the survey as well as register data linked to individuals. It is weighted-representative of the Finnish population, and covers the years 1990–2021.
- We use the OECD/AIAS Institutional Characteristics of Trade Unions, Wage Setting, State Intervention and Social Pacts (ICTWSS) dataset for labour union and collective agreement coverage for 1960–2019. This dataset is based on various statistics from Finland, the main sources being the Labour Force Survey of Statistics Finland and labour market statistics compiled by the Ministry of Economic Affairs and Employment. The data do not have an age restriction, but exclude, for example, students and pensioners. The database is available at https://www.oecd.org/employment/ictwss-database.htm.
- In charts showing growth rates over selected periods, we have chosen the earliest available year in the data, the year preceding the financial crisis (2008), and the year preceding the COVID-19 pandemic (2019). The year 2008 is selected as the pre-financial crisis year as in Finland the crisis hit later in the year than in many other countries, such that, overall, 2008 still exhibited positive growth. In Figures 2 and 34 we have a longer span of data available, and display outcomes at 10-year intervals starting in 1987.

Other clarifications:

- **Hours of work:** contractual hours plus paid overtime hours of employees. Monthly hours converted to weekly averages by dividing by 4.345.
    - For workers on an hourly contract, hours of work are reported more accurately. For workers who are paid a monthly salary, work hours reflect more the contracted regular working hours and not actual realised work hours. Paid overtime is included.

- For workers with multiple jobs, we keep the main job. As only approximately 1% of the annual sample have multiple jobs, the inclusion of multiple jobs does not change the results in a meaningful way. However, the data potentially underrepresent multiple jobs (Kauhanen (2021) estimates that during 2010–16, on average 8.1% of Finns held multiple jobs).

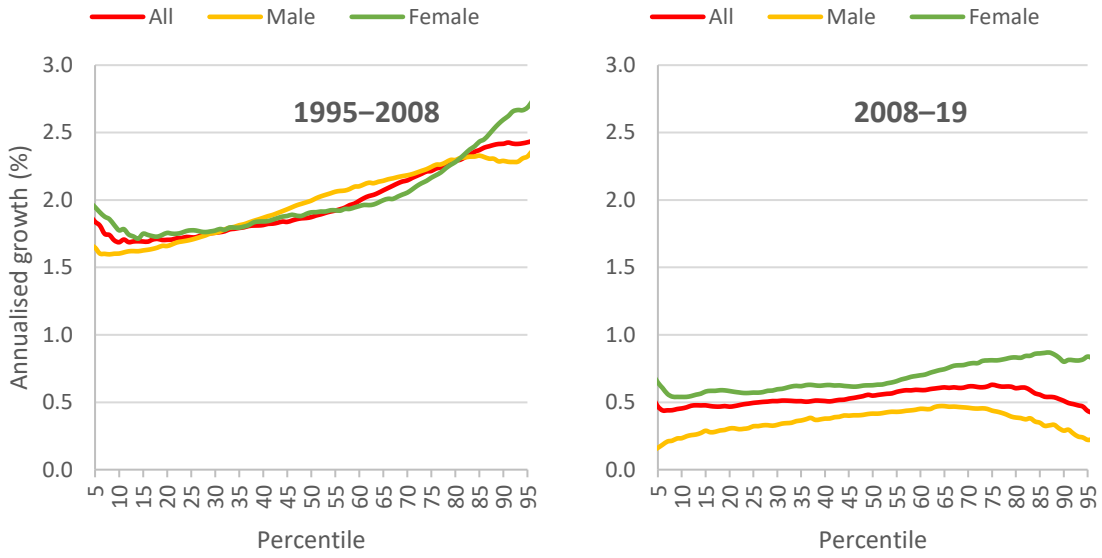
- **Spouses:** In Section 6.1, a spouse is defined as a partner living in the same household. We are not able to link spouses living in different households or identify a spouse when a household consists of many families.

- The **household type** split in Section 6.1 is constructed using information on the household and family. The 'other' category includes individuals whose family status is missing and whose household includes more than one member, as well as all households which are registered as including several families or no family but several individuals. The data allow cases to be identified where multiple families live in the same household from 1990 onwards.

- **Capital gains:** The capital income and hence gross and disposable income concepts in FOLK data modules and IDS data include realised capital gains. As the IDS also provides capital gains as a separate item in 1990–2021, and taxes paid on capital gains in 2000–21, we can form gross income and disposable income measures *excluding* capital gains (e.g., disposable income including capital gains minus capital gains plus tax on capital gains), which we use in Section 6. As taxation of capital gains was mild in the 1990s, we simply ignore taxes paid during 1990–99 in Section 6. In Section 5.2, we *include* capital gains in the gross and disposable income concepts. This is because in 1998 and 1999 capital gains (and hence taxes paid on them) were exceptionally high, such that excluding capital gains from disposable income but not correcting for taxes paid on them yields an incorrect classification of people into income quartiles in those years. (This problem is not present in the analysis in Section 6.) Otherwise, the figures in Section 5.2 are almost the same whether we include or exclude capital gains and its tax. Section 7 uses FOLK data, which *include* capital gains in the income concept.

10. Appendix: additional charts

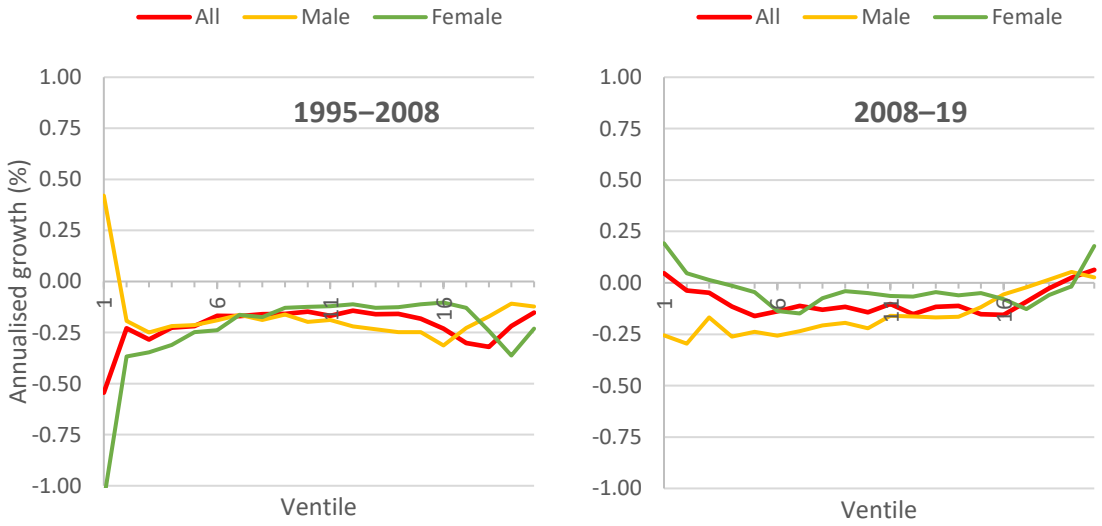
Figure 47. Annualised growth in hourly wages among employees by wage percentile, overall and by sex, selected periods



Note: Sample is individuals aged 25–74. For workers with multiple employers, the main employer is selected.

Source: Structure of Earnings Surveys (SES) for private, state and municipal sectors 1995–2021.

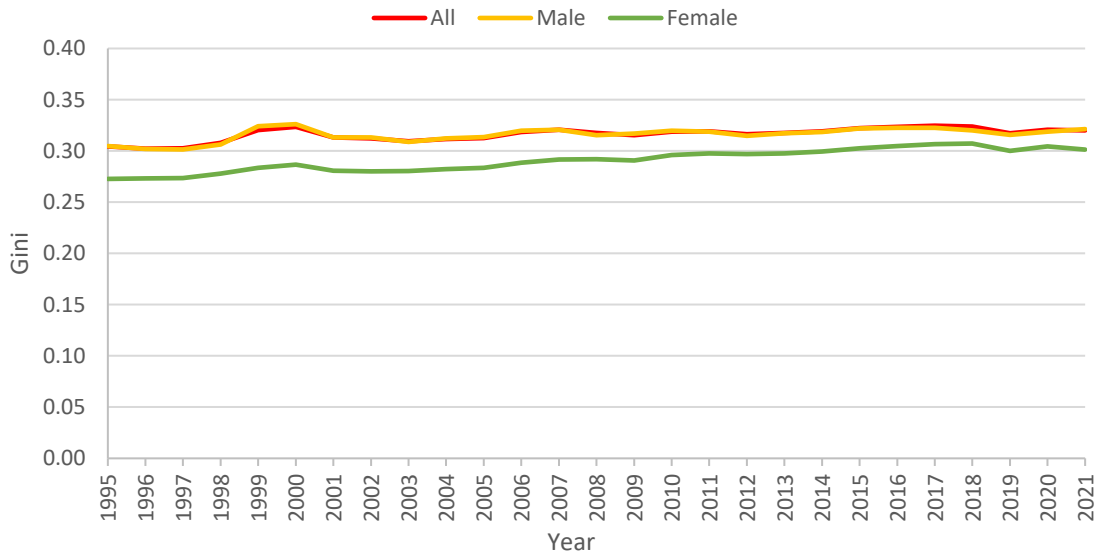
Figure 48. Annualised growth in mean hours worked among employees by hourly wage ventile, overall and by sex, selected years



Note: Sample is individuals aged 25–74. For workers with multiple employers, the main employer is selected.

Source: Structure of Earnings Surveys (SES) for private, state and municipal sectors 1995–2021.

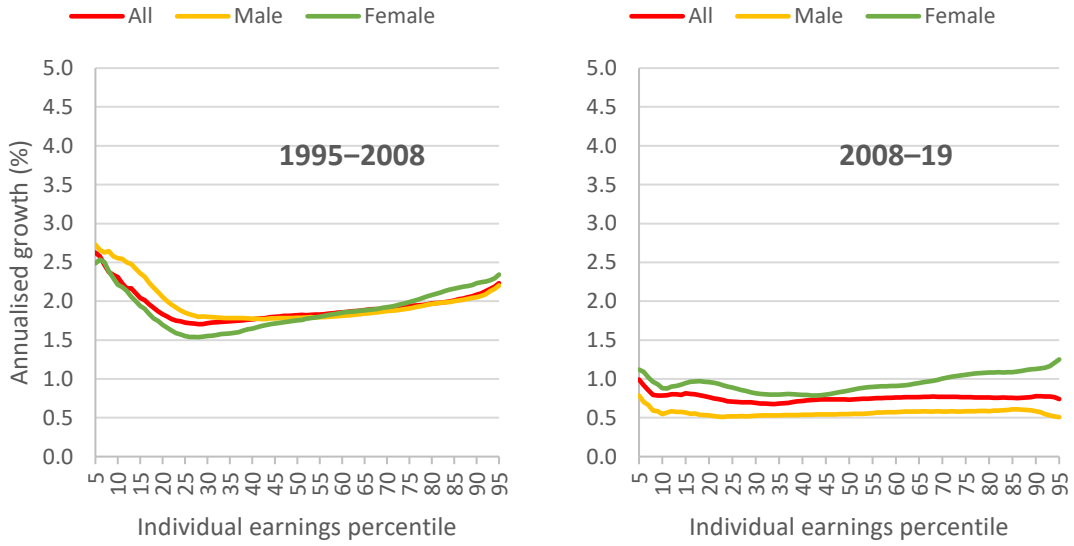
Figure 49. Gini coefficient of gross individual earnings, overall and by sex, over time



Note: Sample is individuals aged 25–74. Earnings includes wage income and self-employment income.

Source: FOLK Income and FOLK Basic data 1995–2021, Statistics Finland.

Figure 50. Annualised growth in gross earnings by earnings percentile, overall and sex, selected periods



Note: Sample is individuals aged 25–74. Earnings includes wage income and self-employment income.

Source: FOLK Income and FOLK Basic data 1995–2021, Statistics Finland.

Figure 51. Outcomes of immigrants relative to natives, ages 25–40, 2019

Note: Sample is individuals aged 25–40. An immigrant is defined as an individual whose parents were (or whose only known parent was) born abroad, and who him- or herself was born abroad. The figure illustrates the average outcome of the immigrant population relative to the average outcome of the native population. 'Share high educated' is the share of ISCED 7–8 degrees. 'Employment rate' is the share employed in the last week of the year (see Section 2). 'Hours per week' includes regular weekly working hours and paid overtime hours. 'Personal earnings' includes wage income and self-employment income. 'Disposable household income' is measured net of taxes and benefits and equivalised using the modified OECD scale, and calculated for each individual of the household.

Source: FOLK Basic, FOLK Income and FOLK Household-dwelling unit data 1987–2021, and Structure of Earnings Surveys (SES) for private, state and municipal sectors 1995–2021, Statistics Finland.