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Have You Benefited from the Tax Reforms? The Distribution of Tax Payments in Sweden after Three Decades of Tax Changes

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Abstract

Thirty years ago, the Swedish tax system underwent a major reform. Since then there have been many changes to the tax system, and the general level of tax revenues has declined by over five percentage points of GDP. The decline in total revenues does not necessarily translate into an evenly distributed decline for taxpayers. This paper studies how tax payments have changed in Sweden since the major tax reform over income distribution, sex, age, and geographical location. The results show that individuals at the bottom and very top of the income distribution have benefited disproportionately more from lower taxes. Labor tax payments as share of labor income have increased across the income distribution and particularly so for middle- and high-income earners.

Keywords: Tax burden, tax distribution, tax reform

JEL code: D63, H23, H24

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Introduction

The Swedish tax system underwent a major and inclusive reform in 1990. Since then, many small and large changes have been made to the tax system, and total tax revenues as a share of GDP has declined from around 50 percent in 1990 to 44 percent in 2016, implying that Sweden has left its place in the very top of high-tax countries. The change in the total level tells us little about how specific individuals or groups of individuals have been affected by the tax changes. Many of the tax changes have probably had a bigger impact on high-income or wealth individuals. For instance, the abolishment of the gift and inheritance and wealth tax in 2005 and 2007, respectively, likely benefited high-income and wealthy individuals disproportionately more. The reform of the property tax in 2008 may have had a similar impact, as well as some other changes in capital income taxation. The introduction of the earned income tax credit in 2007, and the following expansions, may have had a larger impact on lower-income individuals, however. Hence, there have been several changes in the tax system that have affected individuals differently across the income distribution. The general notion is that Sweden has moved away from being a country that tax the rich and wealthy to a tax haven for the wealthy (Waldenström et al. 2018).

Is that the case? Who has benefited the most from the tax changes made since the reform in early 1990s? The purpose of this paper is to study how tax payments paid by individuals on all types of incomes, property, wealth, and gift and inheritances have changed since the early 1990s. Specifically, we study if changes in tax payments differ across the income distribution, for men and women, over the life cycle, as well as geographically. In addition to total tax payments paid by individuals we look net contributions to the public sector, as well as specific labor and capital taxes.

The paper is organized as follows. The paper starts out by looking at how the tax burden has changes at an aggregate level, and then moves on to look at individual data and how tax payments have changed over the distribution since the large tax reform in the early 1990's. This is done separately for total tax payments as well as for labor and capital tax payments, respectively. At the end regional aspects of tax changes are discussed, and then the paper ends with some conclusions.

The tax burden at an aggregate level

Sweden is no longer the country with the highest overall tax level. In fact, the overall tax level has declined from 49.5 percent of GDP in 1990 to 44.1 percent in 2016 (OECD, 2020). Figure 1 illustrates the development of the total tax revenues as well as revenues from labor income (including and excluding social security contributions). Both total tax and labor tax revenues as a share of GDP show

a declining trend over time. Revenues from labor income taxation have declined from 29 percent in 1992 to 21 percent of GDP in 2016.

Revenues from capital taxation contribute less to total revenues but vary more over time. How revenues from individual capital taxation have developed over time is shown in figure 2. Overall, individual capital taxation contributes to about 1-2 percent of GDP. The main source stems from capital income taxation, but this revenue source is volatile and sensitive to the return to capital as well as interest rates. In the early 1990s, the tax revenues from capital income were negative as interest deductions exceeded capital returns. In the late 1990s, revenues rose steadily before dropping after the 2000 IT-boom. Capital income tax revenues dropped again after the 2008 financial crises. In 2016, taxation of individual capital income amounted to 1.7 percent of GDP. The second largest revenue source from capital taxation (note that corporate taxation is excluded) is from recurrent property taxation. In the early 1990s, revenues from property taxation summed up to around one percent of GDP, then peaked in 1996 at 1.3 percent, and have since steadily declined. In 2016, the recurrent property tax amounted to 0.75 percent of GDP. Revenues from the wealth or inheritance and gift taxation never generated large amount of revenues, and were abolished in 2005 and 2007, respectively.

Hence, taxation of both labor income and certain capital incomes have declined at an aggregate level since the tax reform. The aggregate level tells us nothing about how individuals across the income distribution, depending on sex and age have been affected by the tax changes. Something we now turn to.

Data used

Data used in this paper come from LINDA (Longitudinell individdatabas), a sample-based longitudinal individual database. The sample is representative of the Swedish population and covers approximately three percent of the population every year. Data in LINDA are based on register data and are available from 1968 to 2016. LINDA include detailed information about individuals' incomes, all kind of taxes paid as well as taxed and untaxed transfers and benefits. More than 1000 variables are included covering not only income sources and taxes but many other socioeconomic variables.

LINDA is panel of individuals that are followed over time. In 1994 a random sample of approximately 300 000 individuals (about three percent of the population) was drawn. These individuals have been followed back in time to 1968 and are continuously followed. For the sample to be representative each year, adjustments are made continuously to the sample.

LINDA is appropriate to use for this study as it contains detailed information about all kinds of individual tax payments and transfers and benefits received. LINDA does not include data on social security payments made by the employer, taxes on consumption, and corporate income taxes. These tax payments are therefore not incorporated in the study.

The change in total tax payments since the 1990s

Before turning to the distribution of tax payments, we start out by looking at how disposable income, that is, factor incomes minus tax payments plus transfers, have changed from 1990 to 2016 over different disposable income percentiles. The change in disposable income between 2016 and 1990 is illustrated in figure 3. Note that the percentiles are created based on incomes in 1990 (adjusted to 2016 price level) and 2016, respectively, and therefore the percentiles are anonymous and do not include the same individuals or incorporate the same income ranges in 1995 and 2016. Disposable income has increased for almost all percentiles except for the lowest ten. The lowest decile experienced a decline of on average 40 percent. Over the entire distribution, the increase was on average 49 percent, while the top decile experienced an increase of more than 100 percent (102 percent). The top percentile more than doubled their disposable income.

A large component of disposable income is income from labor. Figure 4 shows the change in labor income over the percentiles from 1995 to 2016 (note that the change is from 1995 to 2016).¹ Labor income has increased over the entire distribution by 48 percent on average. The change in labor income is unevenly spread, and the lowest decile experienced a drop in labor income. For decile two and up the increase in labor income rises with disposable income. At the very top of the distribution, the increase in labor income drops. The large increase in disposable income for this group, seen in figure 3, is, hence, explained by a growing share of capital income.

We now turn to tax payments, and how they have changed over the distribution since the early 1990s. Figure 5 presents the distribution of total tax payments (including individual taxes on all types of incomes, property, wealth, as well as inheritance and gift taxes) over percentiles of disposable income for every five years starting in 1990 and ending in 2016. Again, the distribution each year is based on disposable income that year, implying that incomes in the different percentiles differ across years. All percentiles experienced reductions in tax payments as share of disposable income. The reduction was 14.7 percent of disposable income across the entire distribution, and 16.3 for the bottom half and 13.1 percent for the top half, respectively. The bottom-half experienced a larger decline than the upper-

¹ In 1990, labor and capital incomes were aggregated and taxed together, therefore it is not possible to distinguish between labor and capital income.

half, but the very-top percentile received the largest decline (25.3 percent) followed by decile four and five (who received a 25.1 and 22.9 percent decline, respectively). Hence, tax changes since the reform in 1990 have not primarily lowered tax payments for the rich but rather for the lower half and the very top of the distribution.

In 1990, the top tax payment exceeded 80 percent for the top percentile. In 2016, the top tax payment was below 60 percent. As seen in figure 6, the decline is fairly evenly spread across the distribution apart from the top 15 percent that have experienced smaller reductions in the overall tax burden compared to the rest. Also shown in figure 6, is the development of tax payments between 1995 and 2016. The same pattern holds up, the declines in tax payments are the largest in the bottom and very top of the income distribution.

Focusing on total tax payments in Swedish crowns (SEK), rather than as a share of disposable income (figure 7), shows that the top percentiles make large contributions to the overall tax revenues. The top 27 percentiles paid on average more than 100 000 SEK in taxes in 2016, in 1990 the top five percentiles paid more than 100 000 SEK in taxes (in 2016 prices). The top one percentile paid on average almost 1.2 million SEK in total income taxes while the top percentile in 1990 paid 365,163 SEK. The lowest percentiles actually pay less in taxes in 2016 than the lowest percentiles did any of the previous years. From percentile 28 and above, tax payments in SEK are greater in 2016 than they were any of the previous years.

Men and women's tax payments may differ systematically if they obtain their income in systematically different ways. For instance, if men have a larger share of capital income than women, men will pay less in taxes as capital tend to be taxed at lower rates. The earned income tax credit introduced in 2007 differentiated how labor and transfers/benefits are taxed. Any systematic differences in transfers/benefits versus labor income between men and women will carry over to differences in tax payments. Figure 8 presents the change in total tax payments as share of disposable income between 1995 and 2016 for men and women, respectively. Overall men experienced a larger decline in the total tax payments (12 percent over the distribution) compared to women (7.5 percent). Men over the entire distribution experienced a decline, but the decline is largest for men in the lower and top end of the distribution. The top 20 percent saw a 9 percent decline and the bottom 20 percent a decline of 16.5 percent. These declines can be explained by increased shares of capital incomes, as well as benefits from the earned income tax credit at the lower end. Tax payment reductions were largest for women in the lower- and middle-income range – the lower 50 percent saw an average decline of 9.8 percent while the top 50 percent saw a decline of 5.3 percent on average. For women in the top of the distribution, tax payments increased as a share of disposable income. The top decile faced an increase

of 3.5 percent, while the top-one percentage saw a decline of 3.4 percent (compared to 16 percent for men). The increase in tax payments for women at the top could be explained by bracket creep due to increased labor income.

Individuals pay taxes but they also receive transfers back from the government in form of child support, compensation when unemployed, sick, or on maternity and paternity leave, as well as retirement benefits. In figure 9, we illustrate the change in the net contribution to the public sector, that is, individual tax payments minus individual transfers/benefits received, as a share of disposable income. In 2016, around 40 percent of the distribution were net receivers, and, hence, received more from the public sector than they paid. The share of net receivers has declines since 1995, when 52 percent of the distribution were net receivers. The amount received, as share of disposable income, has increased, however. In 2016, the lower 43 percentiles received on average 41 percent of their disposable income in net support from the public sector while in 1995 the lowest 52 percentiles received on average 29 percent of their disposable income in net support from the public sector. Figure 10 shows the same graph in Swedish crowns, in 2016 price level. In 2016, those that were net receivers received on average 46 322 SEK compared to 21 627 SEK in 1995, while the net contributors contributed on average 96 035 SEK in 2016 compared to 39 602 SEK in 1995.

Just as changes in total tax payments differed for men and women, changes in net contribution may also differ for men and women. Figure 11 presents the difference in net contribution between 2016 and 1995 for men and women, respectively. A negative change means a decline in the contribution to the public sector. Men in the lower- and upper-end contributed less to the public sector in 2016 than they did in 1995. Only decile two and three contributed more in 2016 than they did in 1995. For women the pattern looks different, almost the mirror image of the pattern of the men. In the lower end, women contributed less, but for women in decile 4 and up the contributions were larger in 2016 than they were in 1995. The top decile of women increased their contribution by 20 percent or more.

In Sweden, the public sector redistributes both over the life cycle and across income groups (Björklund & Palme 1997). That is, individuals receive transfers when young and old and pay for this by paying taxes during their working years. Figure 12 illustrates this pattern by showing the net contribution to the public sector over age in 1995 and 2016, respectively. In 2016, those between 20 to 38 years were on average net receivers, while those between 39 and 62 were on average net contributors. The age at which the average person became a net receiver has increased from 59 to 62 years of age between 1995 and 2016. The share of disposable income received when young has decreased between 1995 and 2016, while the amount received, as share of disposable income, at old age basically is the same. The tax paid in working age was lower in 2016 than in 1995, but on the other hand, they worked longer

and received less in benefits on average in 2016 compared to 1995. In 1995, a 66-year old, on average, received 86 percent of disposable income from the public sector, in 2016 a 72-year old received the same share from the public sector.

The change in labor tax payments since the 1990s

A major change in the 1990 tax reform was the introduction of a dual income tax system that separated taxation of labor and capital income. In addition, the reform broadened the tax base and reduced top marginal tax rates. For instance, the top marginal tax rate was lower from 87 to 50 percent.

Labor income is taxed both at the local and national level. At the local level, a municipal and county tax is levied at a flat rate. These rates vary between municipalities and counties. On top of this, a national tax rate is levied on higher labor incomes. When the reform was introduced in 1991 the national tax rate was 20 percent and levied on labor incomes above 180 300 SEK. In 1994, the rate was temporarily increased to 25 percent in order to help finance the crisis Sweden was experience at the time. In 1999 the temporary tax rate became permanent but divided into two brackets, a rate of 20 percent on incomes above 245 000 SEK and an additional rate of five percent on incomes above 389 500 SEK. In 2020, the top tax rate (the top five percent) was abolished, and currently labor income taxation consists of the local municipal and county tax rate together with one national tax rate of 20 percent on higher incomes.

Another major change to the Swedish labor taxation was the introduction of the earned income tax credit (EITC) in 2007, and the following expansions. Even if the EITC is relatively more generous at the lower end, the EITC in Sweden, in contrast to other countries, was initially granted to all labor income earners not only to low-income earners. The credit is phased-in at the lower end of the income distribution and was initially flat across the rest of the distribution. Since 2016, the EITC is phased-out at high-income levels.

The distributions of tax payments on labor income as share of disposable income in the years 1995 to 2016 are presented in figure 13. Overall, labor taxation as share of disposable income increased by 0.5 percentage points, from 33.5 percent in 1995 to 34 percent in 2016. In the lower end of the distribution, tax payments declined, this was also the case for the very top. The maximum share in 1995, 62.8 percent, declined to 53.2 percent in 2016. The bottom 25 percentiles paid 22.3 percent of their disposable income in labor income tax in 1995; in 2016, the share of disposable income paid by this group was 18.2. The top 25 percentiles paid 44.9 percent in 2016, up from 44.1 percent in 1995. Figure 14 shows the difference in labor income tax payments between 1995 and 2016. From the figure,

it is clear that it is at the lower end of the distribution labor taxation has declined, as well as in the very top. For percentiles up until 32, the labor income tax declined; this was also the case for percentiles 97 to 100. Remaining percentiles paid more as a share of disposable income in labor taxation in 2016 than they did in 1995.

That labor taxation as share of disposable income has gone up could be explained by increased tax rates or by increased labor incomes pushing up individuals in higher tax brackets. To dig into this we instead study labor income tax payments as share of *labor income* rather than disposable income. Results are presented in figure 15. The same pattern holds up for most part of the distribution. In contrast to the pattern in figure 13, the share of labor tax as share of labor income does not bend downwards at the very-top suggesting that income for the very top to a larger degree stem from capital income. The average labor income tax payments increased from 26.3 in 1995 to 28.1 percent in 2016 even if the maximum rate declined from 42.2 to 39.9 percent. At the bottom, the rate declined; for the bottom 25 percentiles the rate declined from 19 to 17.6 percent. At the top, the rate increased; for the top 15 percentiles the rate increased from 32.4 to 35.1 percent.

During the period studied, the national tax was divided from a uniform rate of 25 percent into two brackets of 20 and 25 percent in 1999, and tax brackets have been changed. At the same time, local tax rates have increased from an average among municipalities of 31.5 in 1995 to 32.2 percent in 2016. The lowest rate increased from 25.9 to 29.2 percent and the highest rate increased from 34.9 to 35.1, respectively. The EITC was also introduced during the period, which lowered local tax payments. In figure 16, the effects the local and national taxes have had on the labor tax payments are shown. Starting with the local tax, the top 75 percent of the distribution experienced an increase in local tax payments as share of labor income. The largest increase, over three percent of labor income, was in the middle of the distribution, at the very top the increase declined to less than two percent. At the lower end, most percentiles faced lower local tax payments as share of labor income in 2016 compared to 1995.

Turning to the national tax, most of the distribution experienced a small decline. In 1995 everybody with an earned income paid a 100 SEK in national tax, and those with incomes above 221 600 SEK an additional 25 percent on incomes exceeding this amount. In 2016, the national tax was only levied on earned incomes above 443 200 SEK (20 percent) and then an additional five percent on incomes exceeding 638 800 SEK. The decline for the majority is, hence, the decline of the 100 SEK in national tax. The top two deciles have experienced a modest increase in national tax payments, maximum one percent increase as a share of labor income. However, the very top, percentiles 97 to 100 paid less in national tax as share of labor income in 2016 than in 1995.

The change in capital tax payments since the 1990s

Capital taxation has also seen several major changes since the reform in 1990. The reform in 1990 introduced a dual income tax system that separated capital income from labor income, and taxed capital income at a flat rate of 30 percent. After the reform, there have been several changes to capital taxation and the uniform rate of 30 percent is no longer in effect. Instead, the capital tax rates range from 15 percent to 30 percent depending on source of income and the owner of the capital. Closely held companies are taxed at 20 percent, owners of non-listed stocks at 25 percent, capital gains on property is taxed at 22 percent, pension savings at 15 percent.

Another major change was the introduction of the investment saving's account (ISK) in 2012. The actual returns on capital held in investment saving's accounts are not taxed, but rather fictional returns based on the stock of capital. The fictional returns are taxed at 30 percent, but as fictional returns are tied to the government interest rate, they do not necessarily follow the stock market returns. The fictional returns can be lower or higher than the actual returns. When the market return is higher than the government interest rate (plus one percentage point, currently), tax payments are lower than they would have been if tax payments were based on actual returns. If the stock market return is lower, or even negative, than the tax payments on the fictional return are higher than the tax payments on the true return would have been.

Figure 17 shows how the individual tax payments on capital income have changed over the years since the major tax reform. Capital income is unevenly spread over the income distribution, and consequently, the capital tax payments. In 2016, the top percentile paid 22 percent of their disposable income in capital income taxes, in 1995 the same percentile paid 7.8 percent. The proportion who paid more than one percent of their disposable income in capital income tax has doubled, from eight percent in 1995 to 16 percent in 2016 (disregarding the lower end, where reported disposable income is very low). When it comes to the tax amount paid in capital taxation, it is in the very top that the tax payments are large. The top 100 percentile paid on average 605,525 SEK in capital tax in 2016 while the same percentile paid 78,483 in 1995 (in 2016 prices). In 2016, the lower 55 percent of the distribution paid less than 1000 SEK in capital taxation and in 1995, the lower 75 percent of the distribution did.

The changes in capital income taxation between 1995 and 2016 have not primarily benefited the upper part of the distribution. Figure 18 illustrates the change in tax payments as share of disposable income between 1995 and 2016, and shows that the lower end of the distribution paid less in 2016 than in 1995 while the upper end of the distribution paid more in 2016 than in 1995. Specifically, the top 20 percent of the distribution paid more in capital income taxation in 2016 than they did in 1995, the rest

of the distribution paid less. This suggests that the upper distribution receive a larger fraction of their disposable income from capital income in 2016 than in 1995.

To further investigate how changes in capital taxation have affected individuals across the distribution we instead study changes in capital taxation as share of capital income rather than disposable income. Figure 19 shows how capital tax as a share of *taxable capital income* has developed since 1995. In 1995, after the reform 1990, capital income was taxed at a flat rate of 30 percent but has since been differentiated. As already mentioned, one major change during the time-period studied was the introduction of the ISK in 2012. A notable difference over time is the decrease in the capital tax as share of taxable income from approximately 30 percent in 1995 (over the entire distribution) to under 25 percent for the lower half of the distribution in 2016. Again, it is the lower end of the distribution that received the largest reduction in capital tax payments as share of taxable capital income.

Lastly, we look at changes over time in capital income taxation as a share of capital income, shown in figure 20. From the figure, it is again noticeable that far from all capital incomes were taxed at the flat rate of 30 percent. The general pattern for the entire period is that individuals at the lower end pay more as a share of their capital income than in the middle of the distribution, and then at the very top the tax rate goes up again. It is also noticeable that there has been a large drop in tax payments between 1995 and 2016 in the lower end of the distribution. At the upper-end the reverse pattern prevails, and the tax share has increased.

It is not only the individual capital income taxation that changed in the period studied. As already mentioned, the inheritance and gift tax was abolished in 2005 and the wealth tax in 2007. These taxes were never large revenue sources; the inheritance and gift tax generated less than 0.04 percent of GDP and the wealth tax less than 0.2 percent of GDP in tax revenues the last year they were in effect. Figure 21 shows how tax payments in wealth tax were distributed across the distribution of disposable income before it was abolished. The distribution of the tax payments was uneven. In the very top-end of the distribution the tax payments were the highest, but across most of the distribution the payments were low and evenly distributed. Percentiles ten to 90 never paid more than 0.5 percent of their disposable income in wealth tax. In the lower end of the distribution of disposable income, there are individuals that pay up to two percent of their disposable income in wealth tax. However, the amounts paid are low in Swedish crowns as people at the lower end have very low disposable income (making the ratio between the tax payment and disposable income relatively high). At the top of the disposable income distribution individuals are paying wealth tax exceeding 0.5 percent of their disposable income; the top 9 percent did that in 2000. Paying more than one percent of disposable income in wealth tax was rare though, in 1995 and in 2005 only the very-top one percent did that, and in 2000, the top four

percent did so. Paying more than 1000 SEK on average did the top 6 percent in 1995 and in 2005, while the top 12 percent did so in 2000. The wealth tax burden was highest in 2000 since this was the year with the highest reported wealth. Reported taxable wealth was in the top percentile 1.82, 3.38, and 3.27 million in 1995, 2000, and 2005, respectively.

Another major change in capital taxation was the reform of the property tax in 2008. The reform lowered the recurrent yearly property tax for especially highly assessed property by introducing a maximum tax payment. Before the reform, property was taxed at a flat rate of one percent of the assessment value. In 2008, the rate was lowered to 0.75 percent and the tax payment ceiled at 6 000 SEK. This meant that the property tax became regressive as highly valued property paid less in property tax as a share of the property value than less valuable property. Figure 22 shows the percentage change in share of disposable income paid in property tax between 1995 and 2016. Apart from the first few percentiles, all percentiles have experienced a decline in the property tax burden. However, the decline was largest at the very end of the disposable income distribution. Overall, the average share of disposable income paid in property tax decreased by 41 percent. Individuals with the highest disposable income experienced the largest decline in property tax payments as share of disposable income. For the very top, the decline was over 60 percent. The bottom 25 percent saw an average decline in the share of disposable income spent on the property tax of 18 percent, while the top 25 percent saw an average decline of 56 percent.

The change in tax payments over regions since the 1990s

Sweden has a decentralized government and tax system. Many public welfare services - e.g., education, childcare, health and elderly care - are organized and provided by the local government and financed by the local income taxes. A disadvantage of providing these services locally is that the local tax base, the earned income, varies between municipalities. In order to provide the same standard across Sweden, there is a system in place that redistribute among municipalities based on differences in tax bases as well as costs.

The variance in earned income between municipalities has increased between 1995 and 2016. In 1995, the standard deviation of earned income between municipalities was 14 968 SEK. In 2016, the standard deviation was 43 109 SEK and had, hence, almost tripled. Due to differences in tax bases municipalities can deviate in tax rates. Figure 23 shows that individuals in the top percentiles tend to live in municipalities with lower local tax rates compared to individuals in the lower- and middle part of the income distribution.

Another change since 1995 is in the composition of disposable income. In the top of the income distribution, capital income made up a larger share of disposable income in 2016 than in 1995. As capital income is taxed nationally (and typically at lower rates) this affects the local tax base. In 1995, the share of labor income to disposable income in the municipality with the highest disposable income was 1.24, in 2016 the corresponding share was 0.8. In the ten top-income municipalities, the share of capital income to disposable income increased from zero in 1995 to 22 percent in 2016. In the ten bottom-income municipalities, the same share increased from -2 to 0.4 percent. At the same time labor income grew by 126 percent in the rich communities and by 73 percent in the poor communities. This suggests that differences in incomes, and consequently taxing power, increased between high- and low-income communities.

Below we show total tax payments in 1995 and 2016 for the ten municipalities with the highest disposable income (figure 24) and the ten municipalities with the lowest disposable income (figure 25), respectively. Overall, tax payments have declined by ten percentage points, from 38.8 percent in 1995 to 28.6 percent in 2016. The declines were larger in the low-income municipalities, on average tax payments declined by 14 percentage points compared to nine percentage points in the ten high-income municipalities. This has widened the gap between tax payments; in 1995 total tax payments averaged 42 percent in the rich communities compared to 39 percent in the low-income communities, in 2016 the average total tax payments were 32.5 percent in rich communities compared to 26 percent in the low-income communities.

We would also expect regional differences in net contributions to the public sector. Figures 26 and 27 illustrate the changes in net contribution in the top ten and bottom ten income communities in 1995 and in 2016, respectively. It is not surprising that the level of contribution differs between high-income and low-income communities. The change over time is perhaps more notable, the low-income communities have increased their reliance on the public sector. In 1995, the average net contribution received from the public sector was 11 percent of disposable income; in 2016, the net contribution from the public sector had increased to 19 percent of disposable income. In the high-income communities, the average net tax was more stable, an average of 6.8 in 1995 compared to 6.6 percent in 2016.

Conclusions

During the last 30 years, the overall tax burden measured as total tax revenues over GDP have decreased from around 50 to 44 percent. The decrease in total revenues is likely to have affected taxpayers differently. The aim of this paper is to study how tax changes over the time-period have affected different taxpayers depending on their income, sex, age as well as geographical location. In

the study, the focus is on individually paid taxes including income taxes on labor and capital as well as property, wealth, and inheritance and gift taxes. Taxes on consumption, social security, and corporate income are not included in the study.

Total tax payments over the whole income distribution have decreased. The size of the declines differ however. The reduction in total tax payments has been largest for low-income individuals and for the very-top few percentiles of the distribution of disposable income. In general, the very-top percentiles have benefited from lower property tax and an increased share of lower taxed capital income as share of disposable income. The smallest declines have individuals in the upper end of the distribution, even though not in the very top, experienced. Even though the share of tax payments over disposable income has declined in the top, the very-top income percentiles pay substantial amounts in Swedish crowns in taxes.

Men seem to have benefited more from the tax changes than women; men on average saw a decline in tax payments as share of disposable income of 12 percent while the corresponding decline for women was 7.5 percent.

Not all tax payments have declined. The overall share of labor taxation has gone up from an average of 26.3 in 1995 to 28.1 percent of labor income in 2016, despite the introduction of the earned-income tax credit. In the lower end and in the very-top labor tax payments as share of labor income has gone down, but the increase over the rest of the distribution more than compensate for the decline.

Comparing net contributions, the difference between taxes paid and transfers and benefits received, over time and income show that benefits received at the lower end of the income distribution have become a more important source of disposable income in later years than previously. The share of the population that are net beneficiaries have declined, however, from 52 percent of the distribution in 1995 to 43 percent in 2016. Women have, on average, increased their contributions to the public sector, while men on average have decreased their contribution.

Sweden has a decentralized public sector where the local governments supply many important public services. Differences in the local tax base, earned income, make the decentralized system vulnerable. Since the tax reform, this vulnerability seems to have increased. Low-income municipalities have increased their reliance on the public sector. At the same time have the gap between total tax payments in high- and low-income communities increased from a difference in 1995 of three percentage points to 6.5 percentage points in 2016. The ability for municipalities to bring in tax revenues seems to have widen across municipalities since the 1990s.

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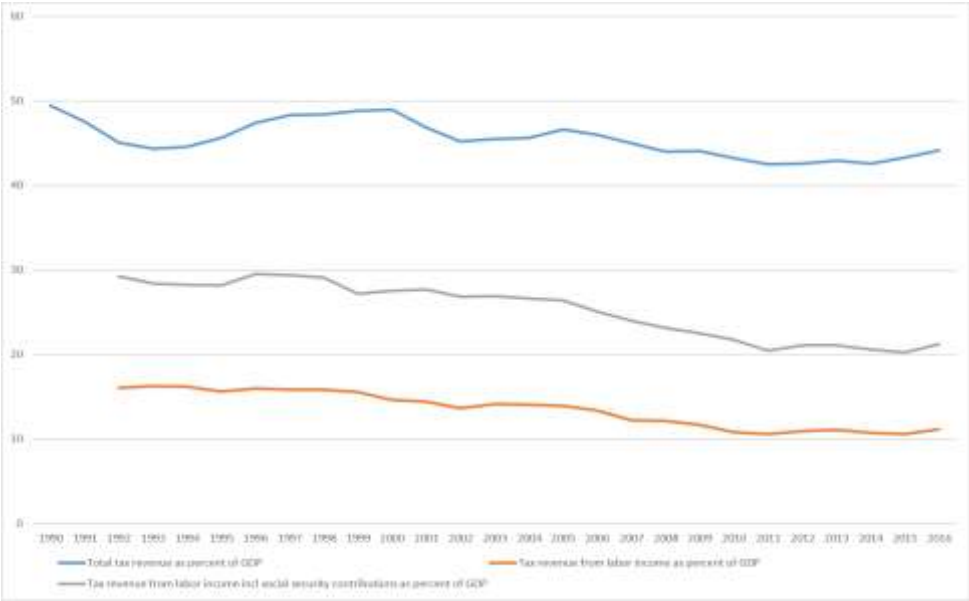
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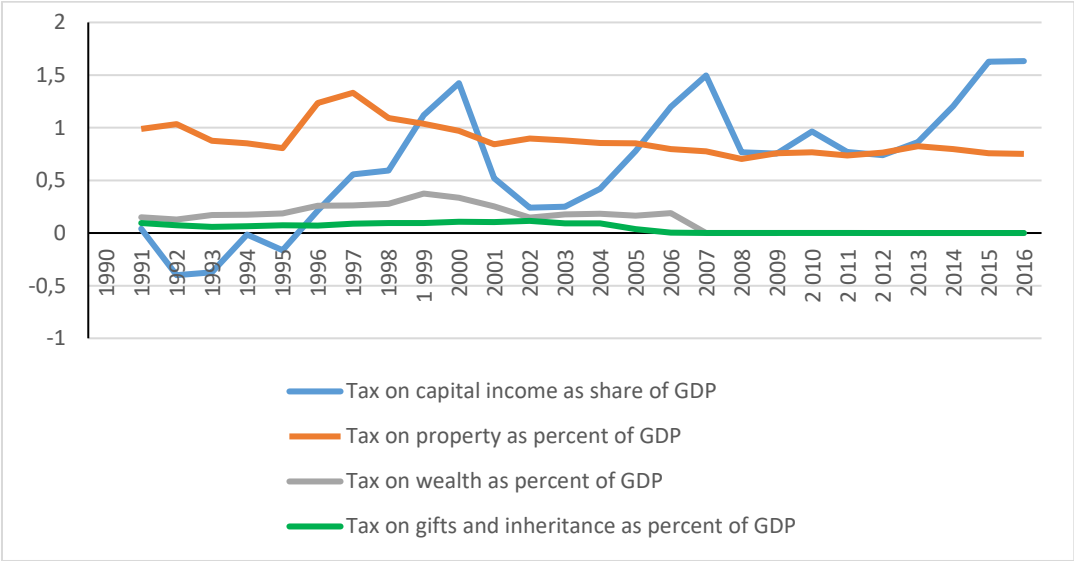
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Figure 1. Total tax revenue and tax revenues from labor income as percent of GDP, 1990-2016



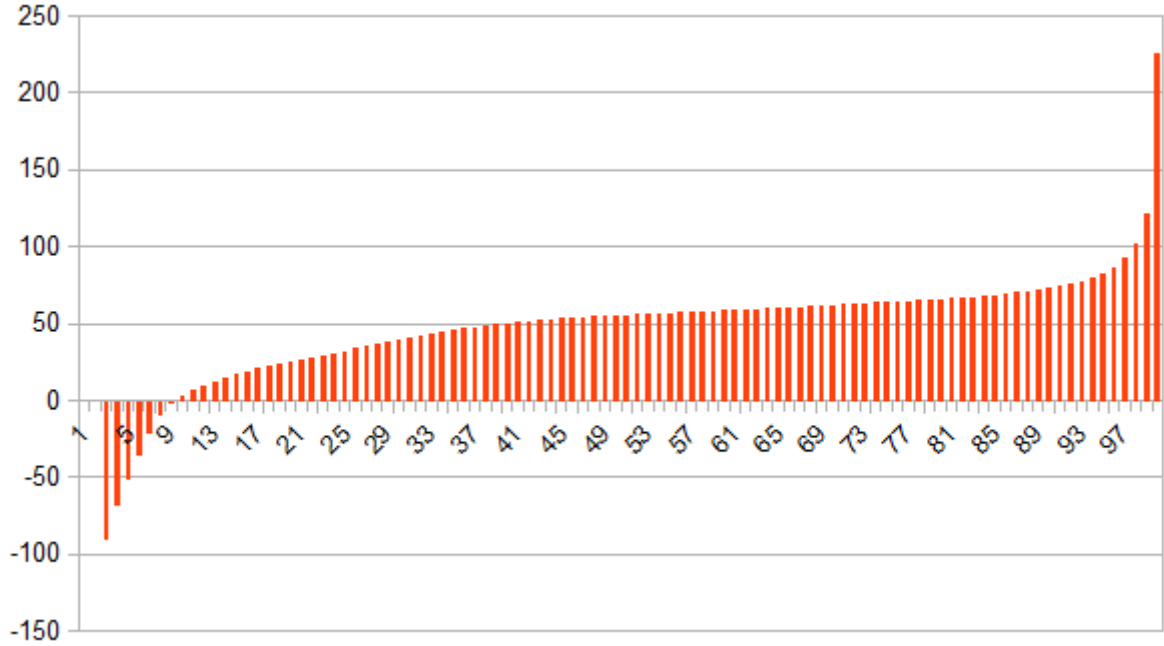
Source: OECD (2020) and Skatteverket (2020)

Figure 2. Tax revenues on capital income, property, wealth, and gift and heritage as percent of GDP, 1990-2016



Source: Skatteverket (2020)

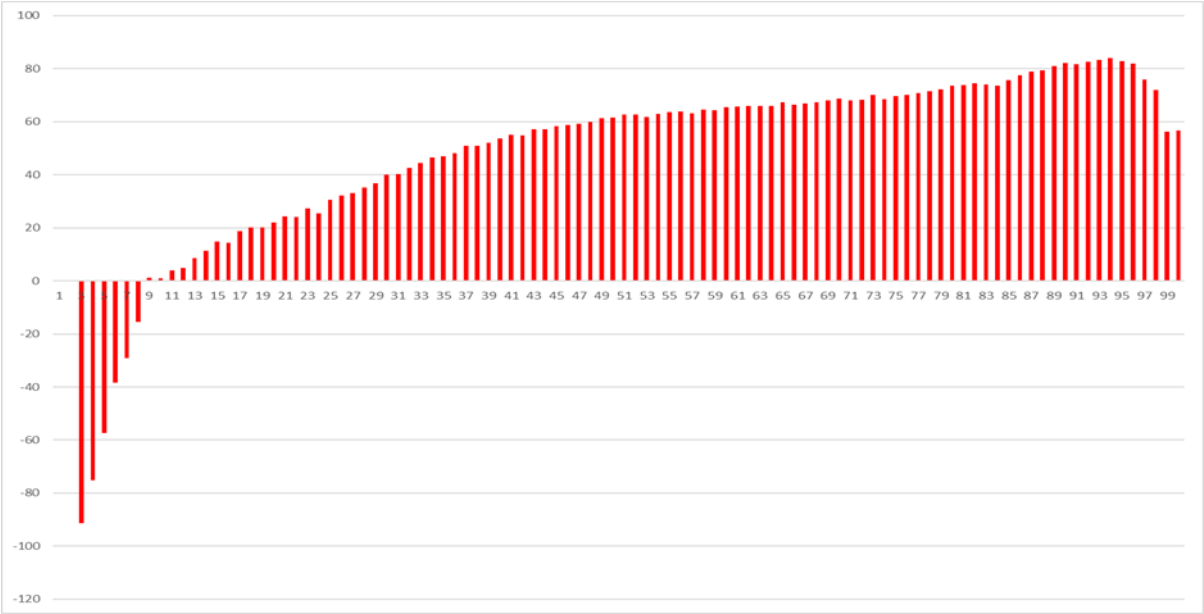
Figure 3. Percentage change in disposable income between 1990 and 2016, over percentiles of disposable income



Note: Disposable income for 1990 has been adjusted with CPI

Source: LINDA-database

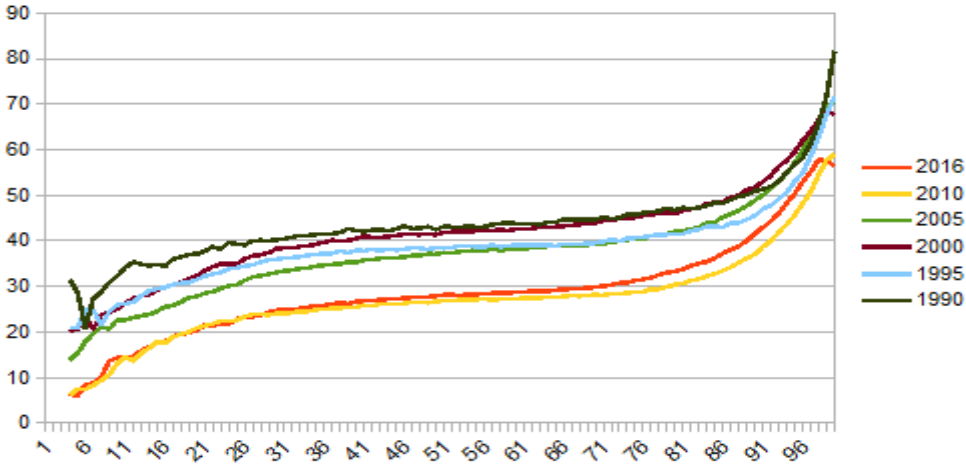
Figure 4. Percentage change in labor income from 1995 to 2016, over percentiles of disposable income



Note: Percentiles of disposable income

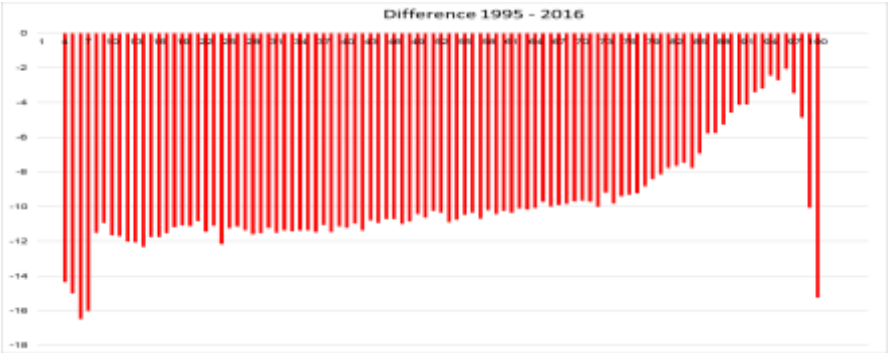
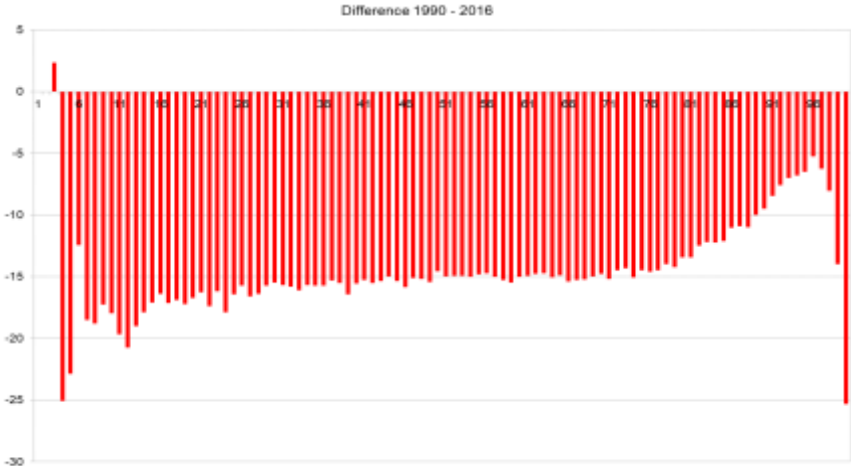
Source: LINDA-database

Figure 5. Total tax payments as share of disposable income, over percentiles of disposable income



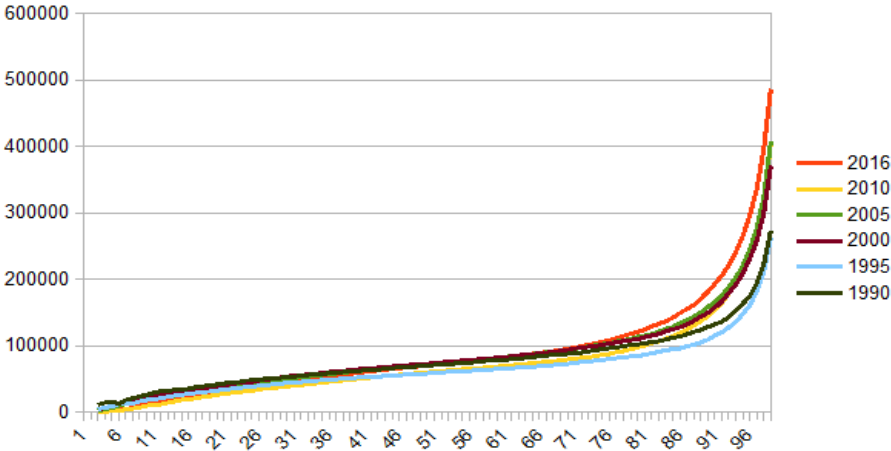
Source: LINDA-database

Figure 6. The difference in tax payments as share of disposable income, between 1990 and 2016 and 1995 and 2016, respectively



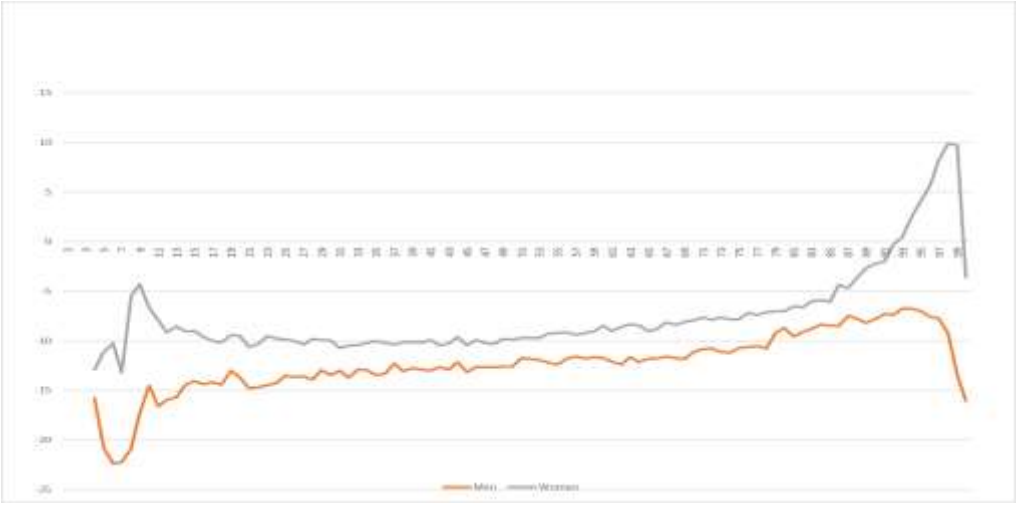
Source: LINDA-database

Figure 7. Total tax payments in Swedish crowns, over percentiles disposable income 1995 – 2016 (adjusted to 2016 prices)



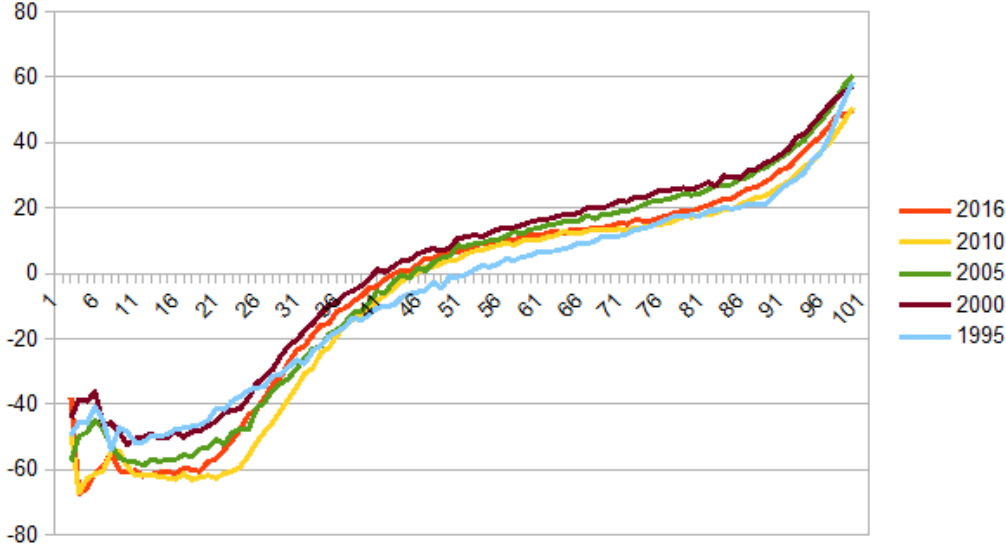
Note: Top percentile deleted. In 2016, the top percentile paid 1,195,955 SEK in taxes.
 Source: LINDA-database

Figure 8. Change in total tax payments as share of disposable income between 1995 and 2016 for men and women, respectively



Source: LINDA-database

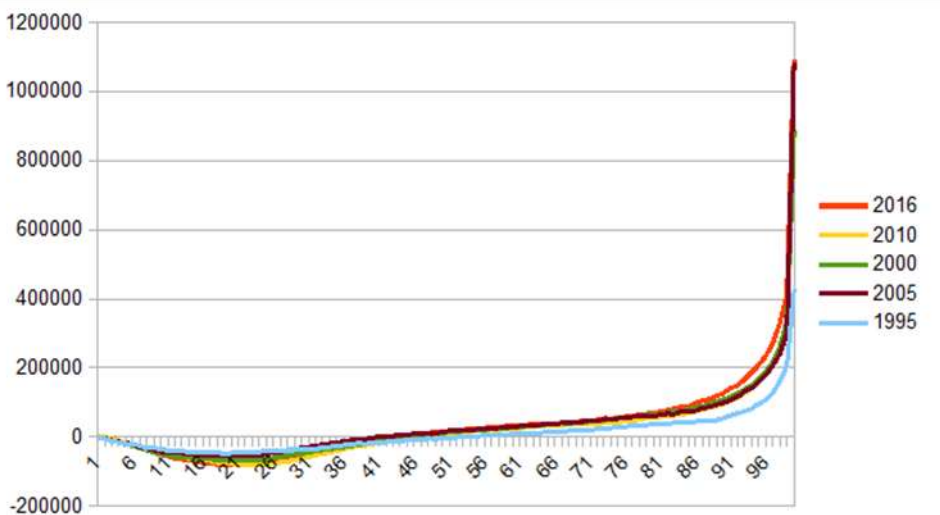
Figure 9. Net contribution to the public sector as percent of disposable income, over percentiles of disposable income



Note: The taxes counted are income taxes on labor and capital as well as property and wealth (social security contributions, indirect taxes and corporate income taxes are not included), transfers include common transfers.

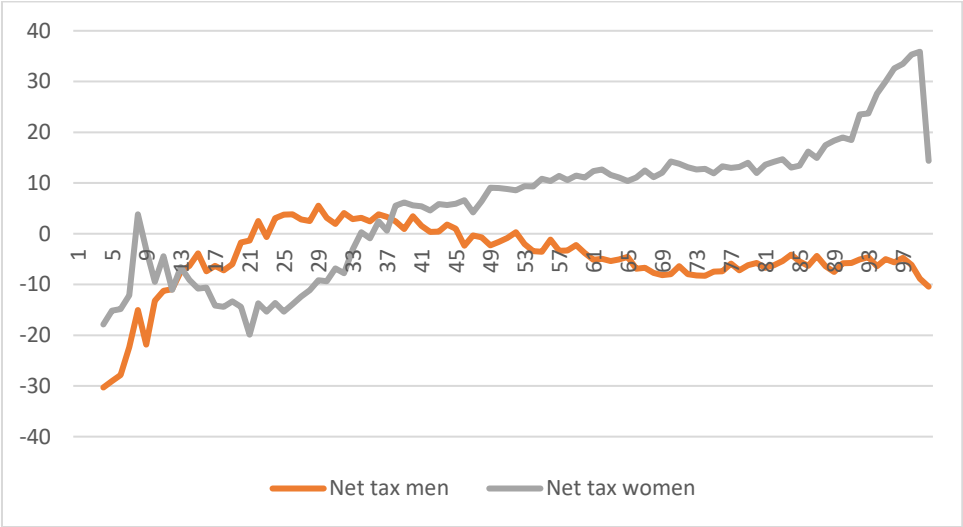
Source: Linda-database

Figure 10. Net contribution to the public sector in SEK, adjusted to 2016 prices, over percentiles of disposable income



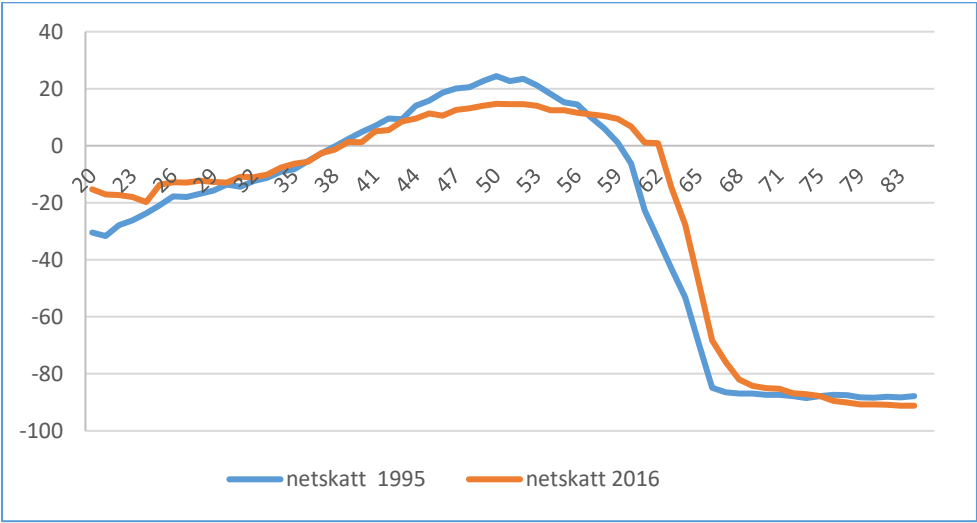
Source: LINDA-database

Figure 11. Change in net contribution for men and women as a share of disposable income between 1995 and 2016, over percentiles of disposable income



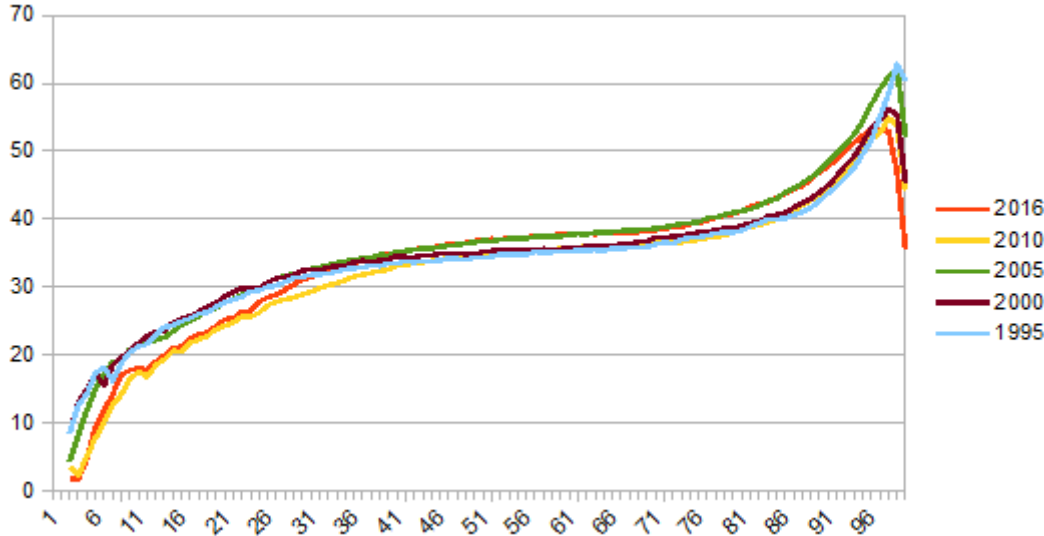
Source: LINDA-database

Figure 12. Net contribution over the life cycle in 1995 and 2016, age 20 and above



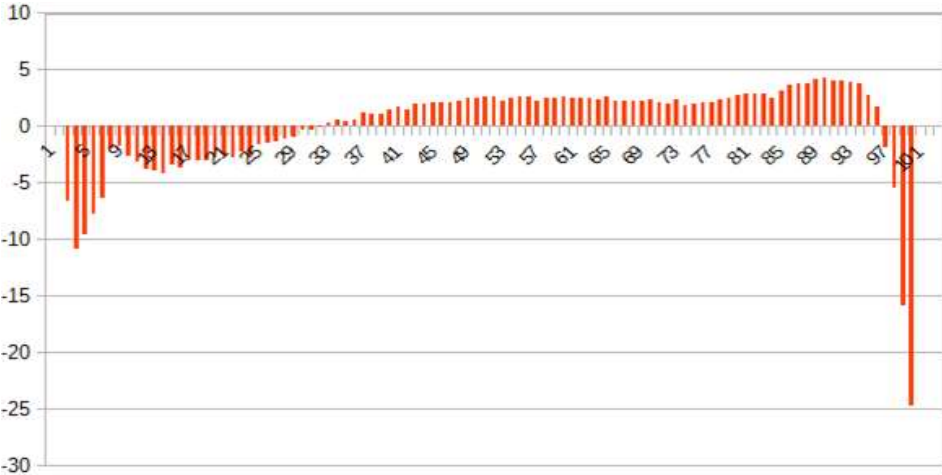
Source: LINDA-database

Figure 13. Labor tax payments as share of disposable income, various years 1995 to 2016, over percentiles of disposable income



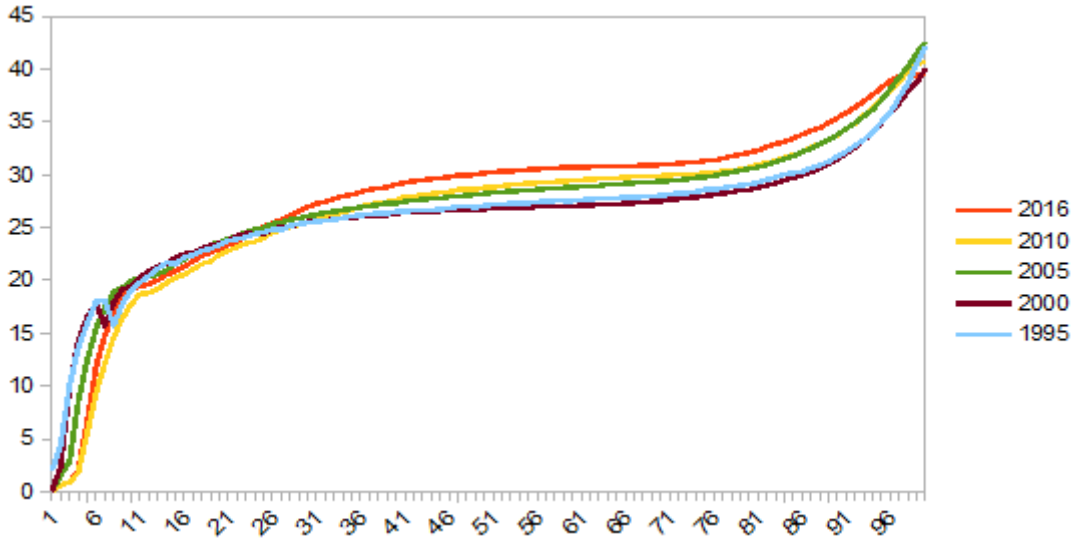
Source: LINDA-database

Figure 14. Change in labor tax payments as share of disposable income between 1995 and 2016, over percentiles of disposable income



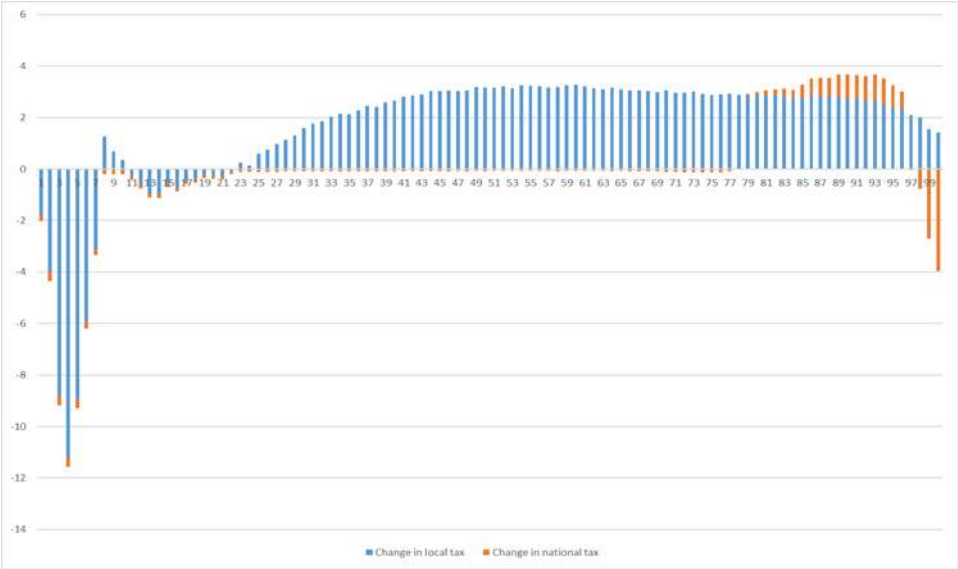
Source: LINDA-database

Figure 15. Labor tax payments as share labor income various years 1995-2016, over percentiles of disposable income



Source: LINDA-database

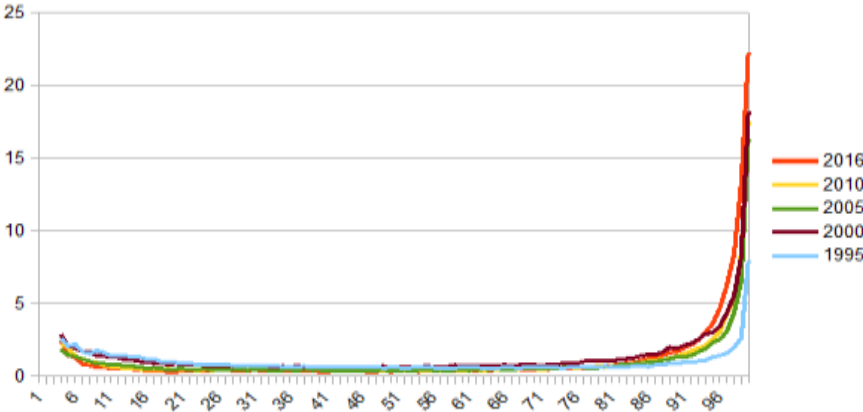
Figure 16. Change in local and national labor tax payments as share of labor income between 1995 and 2016



Note: The distribution is based on disposable income

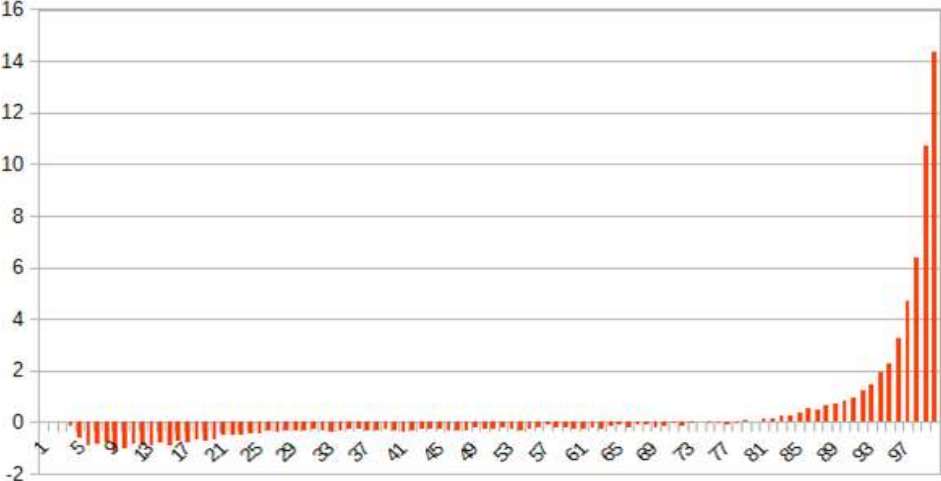
Source: LINDA-database

Figure 17. Capital income tax payments as share of disposable income, various years 1995 to 2016 over percentiles of disposable income



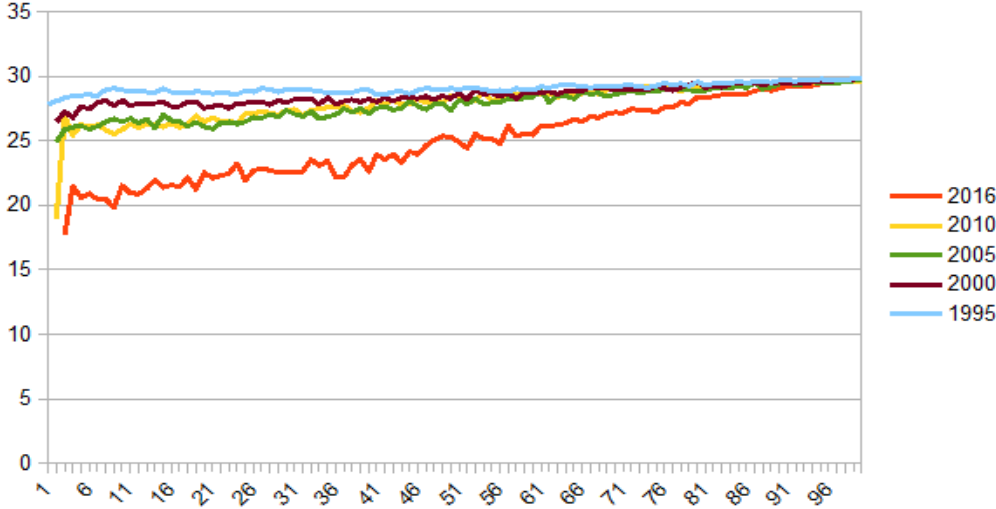
Source: LINDA-database

Figure 18. Change in capital income tax as share of disposable income between 1995 and 2016, over percentiles of disposable income



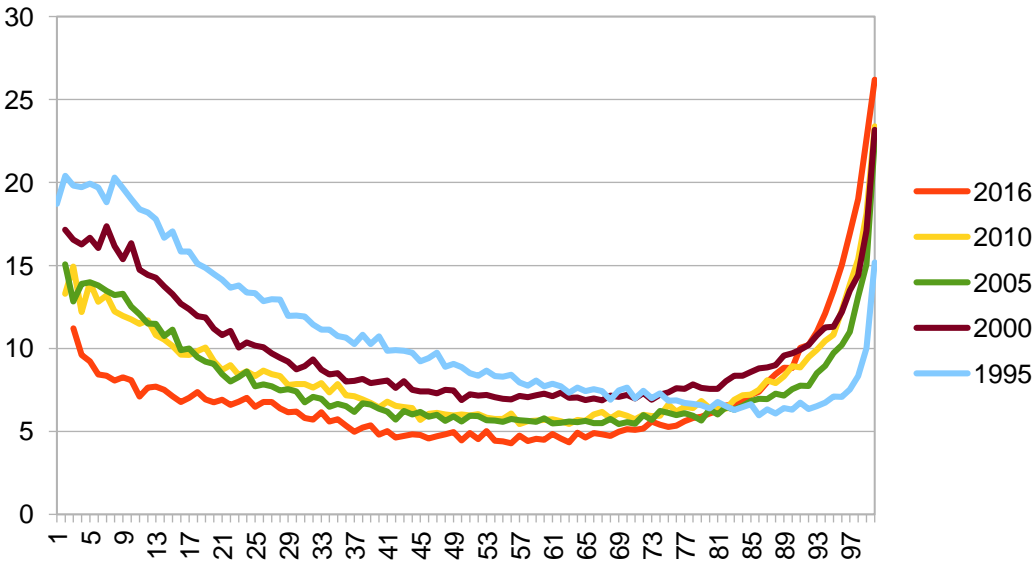
Source: LINDA-database

Figure 19. Capital tax payments as share of taxable capital income, various years 1995 to 2016 over percentiles of disposable income



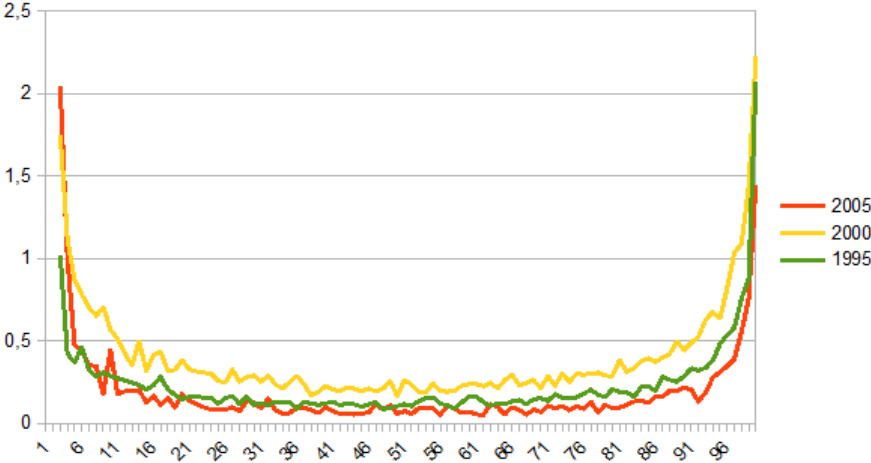
Source: LINDA-database

Figure 20. Capital tax payments as share of capital income, various years 1995 to 2016 over percentiles of disposable income



Source: LINDA-database

Figure 21. Wealth tax as share of disposable income in 1995, 2000 and 2005, over percentiles of disposable income



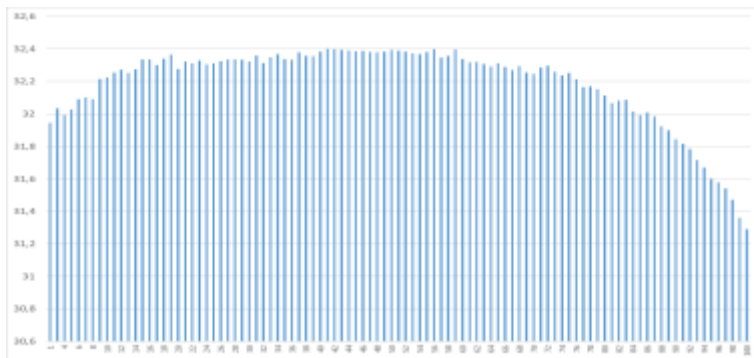
Source: LINDA-database

Figure 22. Percentage change in property tax as a share of disposable income between 1995 and 2016, over percentiles of disposable income



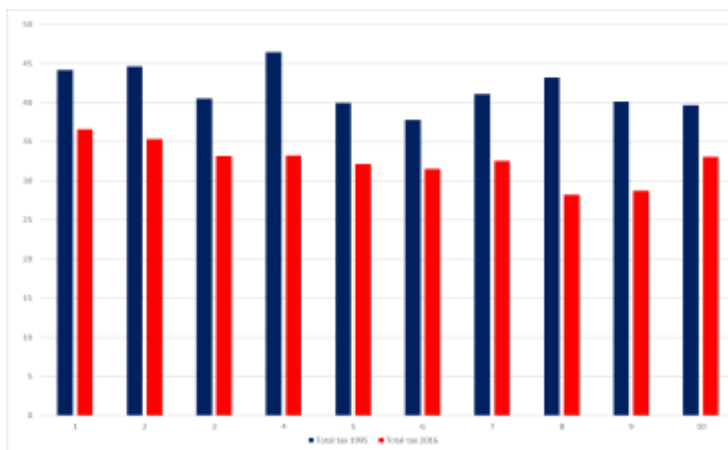
Source: LINDA-database

Figure 23. Local tax rates in 2016 over distribution of disposable income



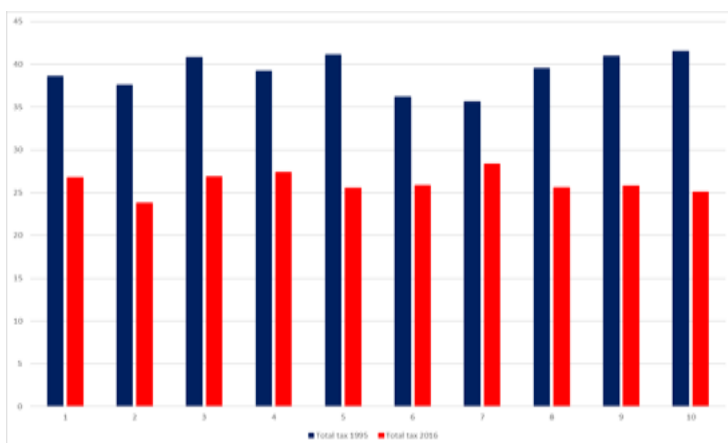
Source: LINDA-database

Figure 24. Total tax payments over disposable income in the ten municipalities with highest disposable income in 1995 and in 2016, respectively



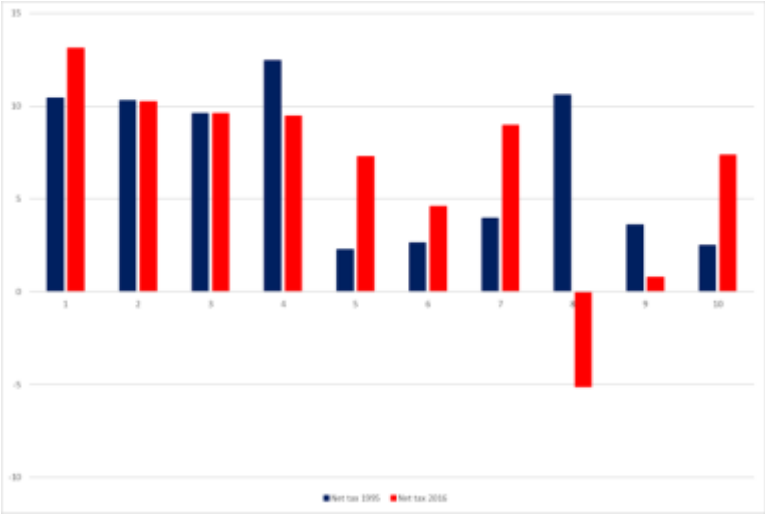
Source: LINDA-database

Figure 25. Total tax payments over disposable income in the ten municipalities with lowest disposable income in 1995 and in 2016, respectively



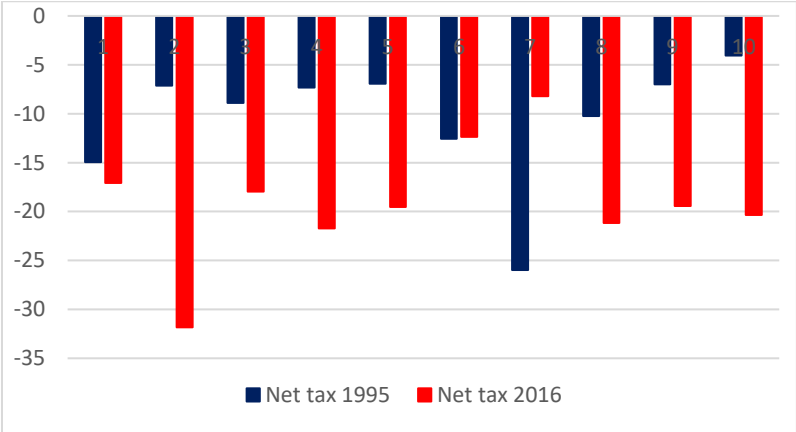
Source: LINDA-database

Figure 26. Net contribution over disposable income in the ten municipalities with highest disposable income in 1995 and in 2016, respectively



Source: LINDA-database

Figure 27. Net contribution over disposable income in the ten municipalities with lowest disposable income in 1995 and in 2016, respectively



Source: LINDA-database