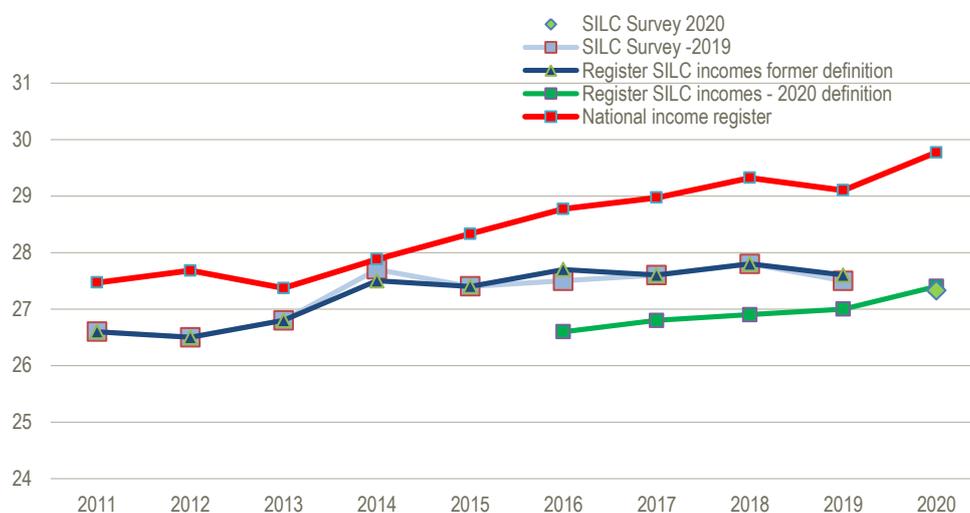


Revision of SILC incomes – main elements

For Eurostat and Users of SILC income statistics

2020-revision Statistics Denmark has revised the SILC incomes for SILC-2020. Overall, this revision leads to slightly lower levels of income inequality estimates for SILC, and does cause some significant breaks in SILC variables on incomes and reduces estimates for median equivalised disposable income by 1 to 2 percent.

Various time series for the Danish Gini Coefficient



Note: SILC data is based on the household composition in the spring of the given year combined with incomes from the year prior. Thus the 2020-results are based on 2019 incomes and so on. There are more detailed results in the end of this paper.

Difference between register and SILC results

Starting in 2020, Statistics Denmark collects inter-household transfers. This is mainly economic support given from parents to their youngsters living on their own. This is not included in the registers and contributes to a gap between the register levels and the survey results presented in the Eurostat database. Prior to 2020, the calibration ensured a better match between register and the SILC survey results for the primary indicators at the national level.

Contents of this paper

This paper outlines

- The background for the revision
- Changes to income definitions between 2019 and 2020 SILC
- Effect on the primary SILC income indicators
- Differences between the national Danish income register and SILC

The imputation models are only described in a Danish Annex to this paper as Danish Tax law and concepts is not that easily translatable.

Reason for the changes

Background for the changes	The work on this project has been financed by an EU-grant. Many of the changes have been inspired by the NET-SILC 3 work on international comparability of incomes in SILC and has been done in preparation for implementing the new IESS regulation(2019/1700) . The primary purpose of this revision is to maximise coherence with the EU-manual (DOC65).
Adjustments of administrative data	The Danish income data have until 2020 been based solely on administrative data from the tax authorities. In some cases the income concepts and definitions in the Danish tax and pension systems do not match Eurostat definitions. For these cases, imputations have been implemented in order to obtain the best possible match with the Eurostat income manual. In other cases, Danish benefits may have been either misclassified, or been able to fit into several Eurostat variables. In these cases, benefits have been moved following the guidelines and/or consultations with Eurostat.
Register data available for other international surveys	Statistics Denmark will provide access to the income definitions for colleagues producing other Eurostat surveys such as the HBS & LFS upon request. Furthermore, data containing the new SILC definitions will be made available for any Danish research institution or ministry that have to deliver comparable international data on incomes.

Changes that affect Total gross and disposable income

Value gains

Remove gains and losses from sale of stocks	In the Danish SILC, dividends and taxable value gains and losses on stocks have until 2020 been lumped together and included in HY090G. This is similar to how income from stocks is taxed in Denmark. However, according to the manual, only dividends should be included. In the administrative data, the value gains and losses are identifiable and the value of gains and losses will be removed from HY090G henceforth.
Remove taxes on sales of stocks	When the value of gains and losses on stocks is excluded, the taxes paid on these have to be removed as well. This is a more complex task, as value gains and dividends are taxed together and the tax system is progressive. The tax rate paid on dividends depends on the value gains and vice versa. To further complicate matters, there is co-taxation between spouses and losses in one year may lead to tax deductions in gains for the following year.
Imputing taxes on dividends	The approach chosen is to remove all taxes on stocks and then impute the tax paid for dividends only. For most cases, this has been done by calculating the average tax rate paid on stocks and multiplying this with the dividends at the individual level with suitable top- and bottom coding of the imputed tax rate.
Expected effect of stock revisions	Privately owned stocks are primarily found in the upper echelons of society. Thus while the value gains constitute a small part of the overall income, they may yet have a large impact on inequality and especially indicators based on the income mass such as Gini and S80/20. However, it will barely have any effect on ROP or the median income as most of the action takes place above this level of income. Income from stocks varies heavily across time, as will the effect of this part of the revision.

Interests and deductions

Remove interest expenses	<p>According to the Eurostat manual, interest expenses should not be deducted from HY090G. Prior to 2020, HY090G in the Danish SILC has included interest paid on</p> <ul style="list-style-type: none">• regular bank loans• payday loans• loans from abroad• study loans <p>The interest expenses are easily identifiable in the tax data. Following a consultation with Eurostat, these will from 2020 no longer be deducted from HY090 and thus no longer be deducted in the disposable income.</p>
Remove tax credit from interest expenses	<p>People with interest expenses get a tax credit for these payments that lower their overall taxes. As interest expenses are not part of HY020, this tax credit will be removed as well. In this revision, all tax credits on private interest expenses are removed including those on mortgages – not only those mentioned above.</p>
Imputing the tax credit	<p>The tax credits have been imputed. In 2019, they vary between 25 and 42 per cent of the interest expenses, depending on the level of income and the amount of interest expenses with a median around 33.4 per cent in 2019. An imputation model has been established.</p>
Interest changes may introduce a bias	<p>Danish households on average got some of the world's highest debt (and asset) levels. Statistics Denmark is concerned with the fact that only including gross property income in the income concept will lead to a skewed impression of the economic well-being of Danish households. This is particularly concerning in periods of high interest rates – which will impact Danish households much more than households in the rest of Europe.</p>
Voluntary variable on net interest expenses	<p>To address this concern, Statistics Denmark will from 2021 deliver data on net-interest expenses in separate voluntary variable in SILC. This will allow researchers to estimate the effect of interest expenses – even though it is excluded from disposable income. The tax credit used is based on the same imputation model.</p>

Land taxes

Land taxes	<p>Land taxes (“Grundskyld”) for home owners will be added to HY120G from 2020 onwards. Land Taxes for tenants are paid indirectly through the rent. Statistics Denmark has developed an imputation model for these. However following a consultation with Eurostat it was decided that land taxes paid indirectly by tenants will remain as part of HHO60 and HHO70 and not be included into HY120G.</p>
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The inclusion of land taxes lowers the overall estimate of disposable income HY020. The land taxes are fairly proportional to the income levels in most income groups and have limited effect on the measured inequality.

Taxes for the self-employed

Tax adjustment for the self employed	<p>Income for self-employed persons is included the year the profits are made. However a policy scheme allows some self-employed to pay a lower tax rate (22 per cent in 2018) in the year the profit is made. They then have to pay the remainder (~38 per cent on average in 2018) as they transfer the profits to their private accounts in ladder years. This leads to intertemporal inconsistencies on</p>
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when profits and taxes are accounted for in SILC, which in turn leads to a systematic overestimation of inequality levels.

- Imputation model By artificially increasing the preliminary taxes paid in the year the profits are made and lowering of taxes paid on profits in ladder years it is possible to eliminate this bias. It has not been possible to come up with a fully consistent model to address this issue, but this change should ensure a better balance between under- and overestimating the income and tax levels of the self-employed in the year the profits are made.
- Expected impact This change does not affect the overall income of the self-employed much, but it does lead to more stable incomes over time and thus to smaller overall estimates of inequality.

Inter-household transfers

Intra household transfers Statistics Denmark has in 2020 started collecting Transfers between households in the SILC interview. These are mostly transfers from parents to their offspring in other households. Transfers received are added to HY080 and transfers given are added to HY130.

Effect The inclusion of voluntary transfers does lead to slight deviations between register and SILC indicators, such as median income, Risk of poverty and Gini that would otherwise be aligned in the post-calibration. The inclusion of voluntary transfers between households slightly lower the inequality estimates. Read more about this in the section on results below.

Overview of changes that impact HY020 and primary indicators

Change	Effects Variable
Value gains on stocks and bonds removed	HY090G
Taxes on value gains of stocks and bonds imputed and removed	HY140G
Non-mortgage interest expenses removed	HY090G
Tax credits for all interest expenses imputed and removed	HY140G
Land taxes for homeowners has been added	HY120G
Intertemporal adjustment of taxes for the self employed	HY140G
Inclusion of inter household transfers	HY080G HY130G

Reclassifications of incomes

The following types of income will be reclassified in SILC. The reclassifications will not have any effect on disposable income or any of the main Eurostat indicators. However it will affect the income levels of certain types of incomes.

Labour market pension contributions added Obligatory labour market pension contributions (including ATP) are considered to be employee income and a social contribution in the manual. Thus it has been added to the wages (PY010) and the social contributions (HY140). It used to be included in neither. For a regular wage earner they usually vary between 8 and 20 per cent of the wages. Thus it is a considerable change. Some wage earners voluntarily add contributions to their obligatory pension schemes. This is not identifiable and will also be included of PY010 and HY140. PY010 and HY140 cancel out in the calculation of Disposable income (HY020). However it does affect Gross-income (HY010).

Voluntary early retirement scheme	VERS (DK: efterløn) is a labour market scheme. But in practice it functions as a retirement scheme as the primary criteria beyond a few decades of contributions is age. Of those who use the scheme only few ever return to the labour market. Following a consultation with Eurostat, the manual was adjusted and it was decided that this should be labelled as an old age pension in SILC. It has been moved from PY090G to PY100G.
Green Check	The green check is a form of Universal Basic Income (albeit a very small one, with a means-test that excludes top income groups) – that was given to compensate low and middle income households for higher energy taxes. The transfer is not related to unemployment. Following a consultation with Eurostat it was therefore decided to move it from PY090 to HY060 (“Social exclusion benefits not classified elsewhere”)
Rehabilitation benefits	(DK: revalideringsydelse) are a temporary wage supplement – designed to facilitate a return to the labour market for people that are temporarily unable to work at full capacity, due to sickness or injury. Thus it has been moved from the often more permanent disability benefits (PY130) to sickness benefits (PY120).
Remaining changes	Finally a few minor adjustments have been made to the classifications regarding means testing and whether transfers are contributory.

Overview of classification changes

Type of income	From	To
ATP contributions	PY030	PY010 & HY140
Labour market Pension	PY031	PY010 & HY140
Voluntary early retirement scheme (VERS/ DK: Efterløn)	PY090 PY091	PY100 PY102
Taxable Private Capital pension payouts	PY102	PY080
Green check	PY090 PY093	HY060 HY063
Civil servant pensions	PY102	PY104
Survivor benefit (DK: efterlevelseshjælp)	PY112	PY113
Sickness benefits	PY122	PY124
Rehabilitation benefit (dk: revalideringsydelse)	PY130 PY134	PY120 PY124
Child alimonies paid by municipality	HY080 HY081	HY050 HY051

Issues not yet fully addressed

Rental incomes from housing

Rental income below threshold for taxation	In Denmark, housing rental income that does not exceed DKK 24,000 annually (or 1.33 per cent of the house value) should not be reported to the tax authorities. Thus, there are no administrative data on rental income. In 2020, Statistics Denmark has collected additional data on rental income in the SILC questionnaire. These data have been used to analyze the effect of this missing income component – but will not be included in the final SILC data for reasons of consistency.
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New data source for rental income	The Danish government and the Danish tax authorities have been working on voluntary reporting of rental incomes with platforms such as AirBnB. Statistics Denmark is working on obtaining these data. The expectation is that these will be included from the 2022 SILC.
Improved split between disability and old-age pensions	In 2020 and prior, we are not able to properly distinguish between old-age and disability pension. The current criteria to split the two are simply the age at the end of the year of the individual and may lead to up to 6 months' worth of disability pensions being classified as old-age pensions near the age of retirement. This will be fixed in 2021-silc (2020-incomes) as we from January 2020 are receiving more detailed data on monthly pension payouts. It does not affect the overall disposable income – but should allow for a more accurate distinction between disability and old-age pensions (Hy100 vs HY130) from 2021 onwards.

Effect on SILC indicators

Table introduction	The tables below show how the main income indicators are affected by the revision. The SILC surveys are the actual SILC data and indicators available in the Eurostat database . The Register rows show the SILC indicators – using SILC income definitions on full population registers. The results from the National income register are based on national definitions and are similar to those that can found on Statistics Denmark's website .
Impact on indicators	On the income levels, many of the changes even out in the economic landscape of the late 2010s. Looking at the full population register estimates, the revisions lower the estimate for the median income by between 0.8 and 1.6 in recent years. Risk of poverty is estimated to be around 0.2 percentage points lower. Finally, the impact on the Gini has been estimated to be between 0.6 and 1.2 percentage points lower if estimated with the new definition in recent years.

Equivalised disposable income - median	2016	2017	2018	2019	2020
SILC Survey 2020					229.066
SILC Survey -2019	213.803	218.764	223.930	228.941	
Register SILC incomes - 2020 definition	212.239	215.399	220.210	226.061	229.304
Register SILC incomes former definition	213.802	218.760	223.924	228.969	
National income register	230.127	234.523	240.315	247.145	253.074
Risk of poverty (60 per cent threshold)	2016	2017	2018	2019	2020
SILC Survey 2020					12,1
SILC Survey -2019	11,9	12,4	12,7	12,5	
Register SILC incomes - 2020 definition	11,9	12,2	12,5	12,3	12,2
Register SILC incomes former definition	11,9	12,4	12,7	12,5	
National income register	13,1	13,6	14,1	14,0	13,8
Gini	2016	2017	2018	2019	2020
SILC Survey 2020					27,3
SILC Survey -2019	27,5	27,6	27,8	27,5	
Register SILC incomes - 2020 definition	26,6	26,8	26,9	27,0	27,4
Register SILC incomes former definition	27,7	27,6	27,8	27,6	
National income register	28,8	29,0	29,3	29,1	29,8

*Note: SILC utilizes income from the previous year combined with the household composition in the spring from the year in question. Thus the 2020 columns are based on 2019-income etc.

Uncertain impact in the years to come	Most notably, the changes to interest expenses have the potential to majorly impact the indicators on the median income. In recent years, interest rates have been very low. This may change in the future. The impact of the changes related to stocks on dividends is also sensitive to developments in financial markets. Stocks mostly affect the Gini-coefficient – on other indicators the effects will be negligible. The other components are usually more stable across time.
Consistency with registers	The median, ROP and Gini are all calibrated to match the register based indicators in the post calibration. This ensures that these are not subject to statistical uncertainty. However the introduction of household transfers that are not part of the register, does lead to small differences between register and survey based indicators.

Differences between the national income register and SILC

This section describes the main differences between the national income register and SILC – following the 2020 SILC revision.

Alternative household definition	The national income register uses Family ID's from the Danish Census to define the households. This definition does not allow for more than two adults (above the age of 25) in a family unit. This leads to a split of some households that in SILC are considered as one household. Due to the equalizing of the incomes, this leads to higher estimates of income inequality in the national register.
Acceptance on negative incomes	Statistics Denmark fully allow for negative incomes in the register. Eurostat only accepts these in a few of the income components. Thus, some income components have an artificial lower cap of zero in SILC.
Definition of disposable income	Other than that, the differences are that the following components are included in the national registers definition of disposable income – but not in SILCs <ul style="list-style-type: none">• Non cash-employee income other than the value of company cars (the ladder is part of SILC as well)• Net interest expenses• Imputed rent• Net Value gains/losses on stocks etc.

Furthermore, the intertemporal adjustment of the taxes for the self-employed has not been done for the national register and Land taxes are considered to be an indirect tax and are thus not part of the taxes.