Income, Wealth & Intergenerational Inequality in the Netherlands

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By Emiel Afman

Abstract

This economic brief brings together publicly available income and wealth data and finds that the distribution of income among Dutch households is relatively stable and flat by international standards. Inequalities in net wealth holdings are relatively large. This is to a large extent a debt-driven phenomenon and related to the large number of Dutch households with low and sometimes negative net housing equity. Addressing household debt, e.g. by lowering the debt bias for households in the tax system, would strengthen household balance sheets and lower wealth-risks for households.

In intergenerational terms, the position of the baby boom generation stands out. Both in terms of income and wealth, they are much richer than all other generations. However, their wealth position doesn't deviate much from what one could expect based on theoretical or synthetic counterfactuals, based on actual income and saving patterns. Millennials (born after 1980) seem to have started their working lives at lower real incomes than previous generations.

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Income, wealth and intergenerational inequality in the Netherlands

The distribution of income among Dutch households is relatively stable and flat by international standards. Inequalities in net wealth holdings, however, are relatively large according to summary statistics and in comparison with other countries (see OECD 2018 for an overview). Relatively few studies discuss the intergenerational distribution of income and wealth. Insights in the intergenerational dimension is increasingly relevant given trends as population ageing and the simmering debate about inequities between different age groups. Moreover, policy measures and structural reforms (e.g. fiscal consolidation measures affecting the speed of debt reduction or pension reforms) often have an important intergenerational impact.

This paper brings together publicly available income and wealth data and contributes to a better understanding of the distribution of economic resources among households in the Netherlands. Section 1 briefly discusses income and wealth inequality. Section 2 analyses the intergenerational distribution of income and wealth in depth. Section 3 concludes.

1. Income and wealth inequality

Distribution of income

The 2017 Eurostat income quintile share ratio (S80/S20), which measures the income share of the richest 20% of population compared to the income share of the poorest 20% of population for equivalised after-tax disposable income is 4 in the Netherlands, well below the euro area average over 5 (Graph 1).

Graph 1: **Income inequality in selected European countries (disposable income)**
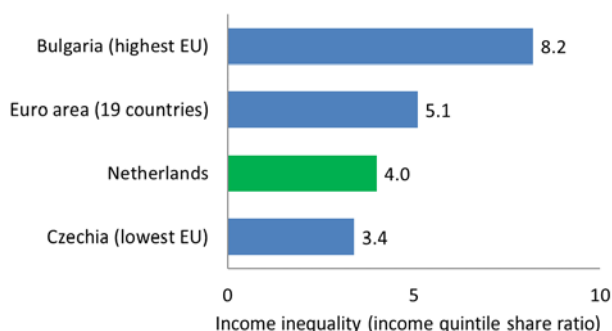
Source: Eurostat. S80/S20 indicator 2017 ('income quintile share ratio').

Graph 2: **Income inequality before and after tax and benefits**
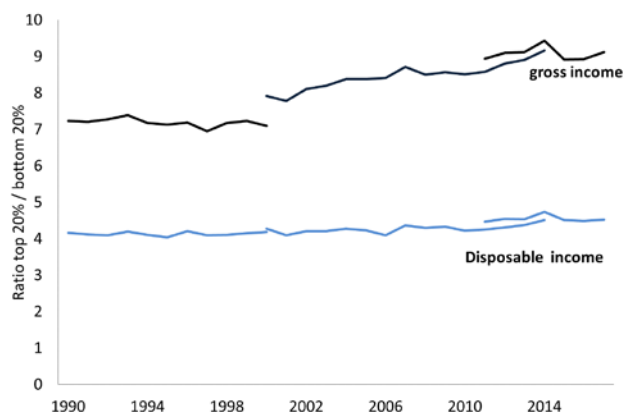
Source: Statistics Netherlands (CBS), income quintile share ratio, household ranking by relevant income concept. Own calculations on data from three different datasets (1990-2000; 2000-2014 and 2011-2017).

This indicates that income inequality in the Netherlands is relatively low by European standards. Income inequality measured in disposable income is quite stable over time, while since the turn of the century income inequality in terms of gross income increased markedly, indicating increasing redistribution (Graph 2).

Distribution of wealth

Household net wealth – the stock of financial wealth (saving and other assets) and net housing equity (the value of the house minus mortgage debt) – is distributed quite unevenly over households. The top 10% wealthiest households own roughly two thirds of total net wealth (Graph 3), with the top 1% owning more than 25% in 2017. According to the OECD Wealth Distribution Database, the Netherlands has the second highest wealth inequality after the United States (OECD 2018).

To illustrate the difference in income and wealth inequality, and in particular with respect to frequently used inequality indicators such as the Gini-coefficient, Graph 4 works out a Lorenz curve for both disposable income and net wealth. The Lorenz curve plots the cumulative income or wealth share over the cumulative share of population. The Gini coefficient measures the area between the Lorenz curve and the dotted 'perfect equality'-line (divided by 0.5).

Graph 3: **Net wealth by wealth deciles**
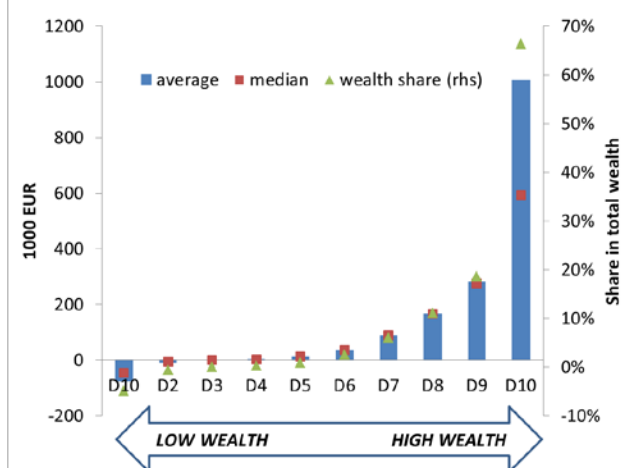
Source: CBS, household ranking by net wealth (2016).

Perfect equality would yield a Gini coefficient of zero. Surface A gives the Gini-coefficient for income, which is slightly below 0.3. Surface B (above the blue curve) indicates the Gini-coefficient for net wealth, estimated at 0.9. The Lorenz curve shows immediately that this is due to the incidence of negative observations in the net wealth distribution (households with more debt than assets): In 2014, at the bottom of the current housing market cycle, the Lorenz curve only crossed the x-axis around the 60th percentile.

Graph 4: **Lorenz curves for disposable income and net wealth**
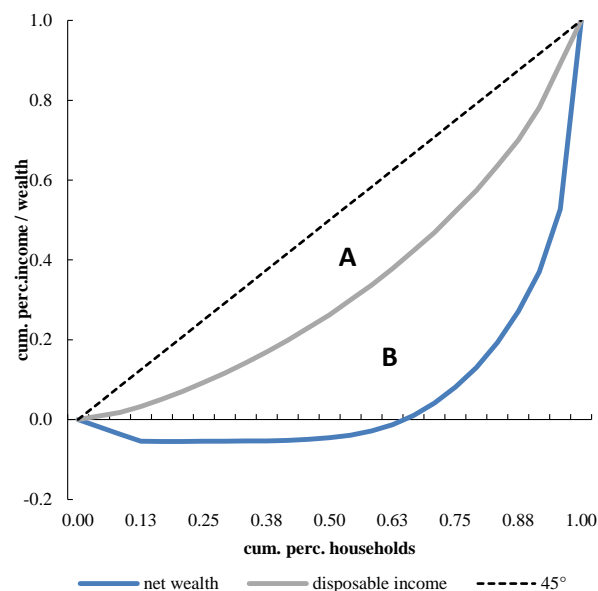
Source: Own calculations on CBS-data for 2014.

The relationship between income and wealth is not straightforward. Salverda (2015) marks that top-wealth is found across the entire income distribution, pointing

to the distribution of wealth over income deciles. Graph 5 crosses disposable income and net wealth in a three dimensional frequency surface for the Netherlands. This graph shows three peaks. Next to the two intuitive peaks (low income, low wealth and high income, high wealth), there is quite a large number of households that combine high incomes with low net wealth. In fact, 30% of the households in the bottom wealth decile belong to the top quintile in terms of income. This often concerns households which have acquired a house relatively recently, financed with mortgage debt. By consequence, high (net) wealth inequality is to a large extent explained by households with negative net housing equity and low liquid wealth levels in the lower strata of the distribution.

Graph 5: **Households by income and wealth**
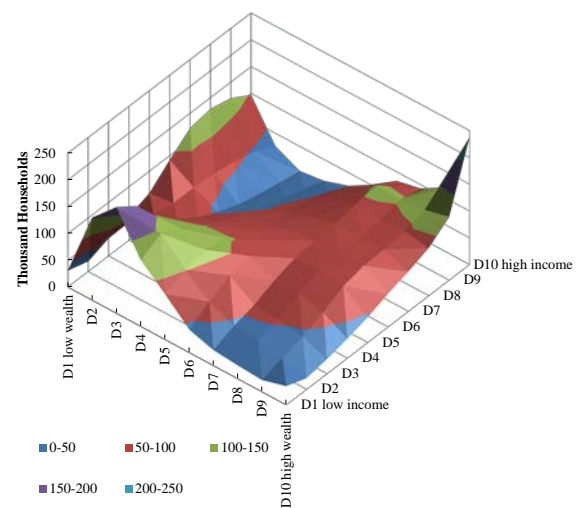
Source: Own calculations on CBS-data for 2014.

In general, the widespread availability of collective schemes (for old age, disability) is conceptually relevant in the assessment of wealth inequality as it reduces the incentive for precautionary savings. In the Dutch context, the collective nature of the pension system matters. Dutch pension funds operate on a collective basis and do not use individual accounts. Currently, Statistics Netherlands (CBS) does not allocate pension wealth to individual households. By consequence, occupational pension savings are not included in the wealth data. With 90% of all employees contributing to a pension fund, pensions are more equally distributed than other forms of private financial wealth, leading to a more equal wealth distribution. Kooiman and Lejour (2016) estimate that the Gini-coefficient for wealth inequality would decline by almost 17 basis points in the Netherlands, if the net present value of future pension entitlements is allocated to households.

Finally, if the distribution of gross assets is assessed instead of wealth net of debt, it becomes even clearer that household debt is a major driving factor behind the high readings on wealth inequality indicators. Mortgage debt is by far and large the largest component in total household debt, accounting for almost 90%. When only assets are considered, the Gini-coefficient would be much lower. The top 10% wealth share declines by roughly one third, from 67% in total net wealth to 45% of total gross wealth. This is much more in line with other European countries and below the OECD average.

A balance sheet perspective

A high level of wealth inequality and the absence of liquid wealth holdings may have negative macro-economic repercussions. A minimum wealth buffer makes households resilient for income shocks and allows for consumption smoothing. This improves household utility and reduces macro-economic volatility. In addition, wealth is important to take out loans, to finance investment (e.g. for buying a house) and to generate capital income, for after retirement.

In particular net housing equity drives net wealth inequality. In Graph 6, this is illustrated by the high mortgage debt in the bottom decile (EUR 166 billion in total, compared to a total estimated wealth in real estate of EUR 128 billion). Negative net-housing equity is a crisis legacy issue, and relates to a high debt bias for households (amongst others, due to a generous mortgage interest deductibility in the personal income taxes) in combination with falling house prices in the period 2008-2014 (see European Commission 2019). Since 2014 house prices are increasing again, improving the net wealth situation of home-owners (mainly located in the upper 50% and the bottom decile of the wealth distribution).

Relatively poor households with neither assets nor debt are typically located in the third and fourth deciles of the wealth distribution. Households with both positive net housing equity and mortgage debt are located in the upper middle groups of the wealth distribution. The combination of positive housing equity, low mortgage debt and financial wealth leads to the rich and very rich households in the upper part of the wealth distribution. Financial wealth is particularly unevenly distributed: the top wealth decile holds roughly 60% of all financial savings recorded in the CBS household wealth data.

All in all, the descriptive data analysis shows that the distribution of wealth is complex in its relationship with income, and that wealth inequality depends to a large extent on net housing equity. Mortgage debt

waters down net wealth holdings, in particular at the bottom end of the wealth distribution driving up wealth-inequality.

Graph 6: **Household balance sheets by net wealth decile (billion EUR)**
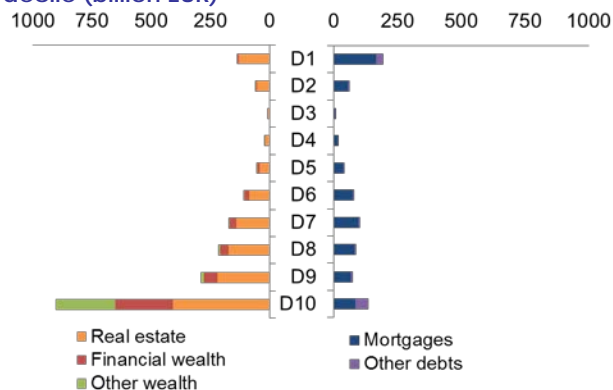
Source: Own calculations on CBS-data for 2016.

2. Intergenerational inequalities

Intergenerational differences, for instance in terms of net contribution or net receipts from collective systems, are widespread. They are sometimes explicit, but more often implicit, as part of a complex (reciprocal) social contract. Population ageing puts pressure on collective systems, in particular when there is systemic redistribution from active to inactive households. If the inactive/active ratio doubles, systems that put a financing burden on active workers are not automatically economically and socially sustainable. This makes an analysis of intergenerational developments relevant, as this is the baseline to which future policy reforms have to be evaluated.

Intergenerational income inequality

Income-by-age data exhibit a strong life-cycle pattern. Graph 7 sketches gross and disposable income by age for 2006 and 2014 (in real terms; household age is defined as the age of the highest income earner). Gross household incomes start at roughly EUR 20,000 to 30,000 per year and grow to around EUR 80,000 per year for 45-55 year olds, before they start to decline. Life cycle developments are much more flat in disposable income, with a peak at EUR 40,000 around the age of 50. The difference between the curves for gross income and for disposable income illustrates a substantial impact of taxes and benefits.

Since the turn of the century, disposable incomes have increased for almost all age groups (left aside the very young households, up to the age of 25). In absolute

terms, the real income gain was highest for 55-65 year olds. In relative terms, however, the age group 65+ has seen a most generous increase of 50% from roughly EUR 20,000 per year to EUR 30,000 in real terms.

Graph 7: **household income by age (2016 prices)**
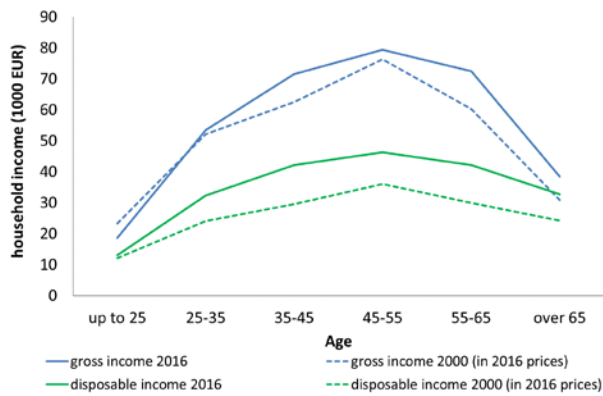
Source: Own calculations on CBS data; incomes inflated with the price deflator for private consumption from National Accounts.

In the other age groups, the relative income gains were smaller (around 15 to 20%). The higher incomes of today's 65+ households is largely explained by longer working careers and higher pension income, more often based on two salaries, instead of one, following increased female labour market participation.

In the current era of low productivity growth and declining labour income shares, the relevant question is to what extent younger generations will be able to reach similarly high real income levels as previous generations. To allow for an analysis of income developments for different generations, Graph 8 reorganises the income data by birth cohort. As sufficiently detailed income data only start in 2000, there are not yet entire life-cycles covered, but the data is rich enough to provide a general picture. This graph shows again the inverted U-curve with incomes peaking around the age of 50. Households with a main-income earner born between 1955 and 1960 have had the highest average income at the age of 50-55 so far, topping previous generations and also topping their younger brothers and sisters (birth cohort 1960-1965). Although there are increasingly few data points, it is striking that very young income earners on average do not earn more than previous generations. When average income differences are taken for every generation (Graph 9), then the data show healthy real income growth for most birth cohorts, but also point to a reversal of this trend for younger generations.

Graph 8: **Real gross income by age and birth cohort**
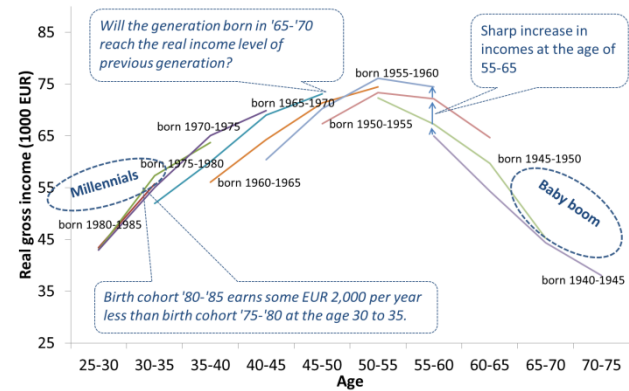
Source: Own calculations on CBS data. Incomes deflated by price private consumption.

Graph 9: **Incomes compared to the previous birth cohort**
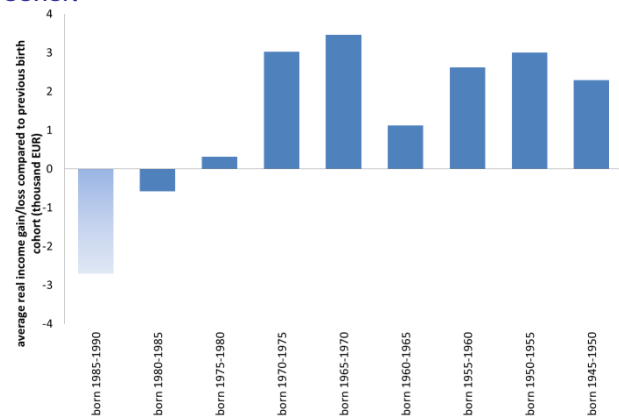
Source: Own calculations on CBS data. Incomes deflated by price private consumption.

Intergenerational wealth inequality

Excluding pension assets, more than two thirds of total net wealth was held by households with a main-income earner older than 55 years and 42% was held by households over the age of 65 in 2016. This is 12 percentage points more than ten years earlier (Graph 10). In the same period, the wealth share of 25-45 year olds dropped from 20% to 10%. This is a massive shift in the intergenerational wealth distribution. The data by birth cohort tell an equally dramatic story (Graph 11). The current generation of 35-45 year olds own on average EUR 100,000 less (in real terms) than the current generation of 45-55 year olds, when they had the same age ten years ago. This generation is on average poorer than the generation born 1951-1961. According to the 2006-2016 data, the baby boom generation (born 1941-1951) was the richest of all generations at the age 55-65, with on average close to EUR 300,000 in net wealth. The intermediate conclusion is thus that the current
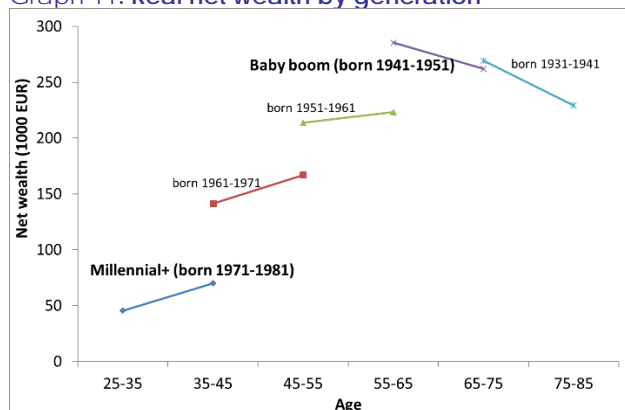
generation of elderly have had top real incomes and is also well off in terms of wealth, with younger generations remaining at great distance.

Graph 10: **Wealth share by age group**
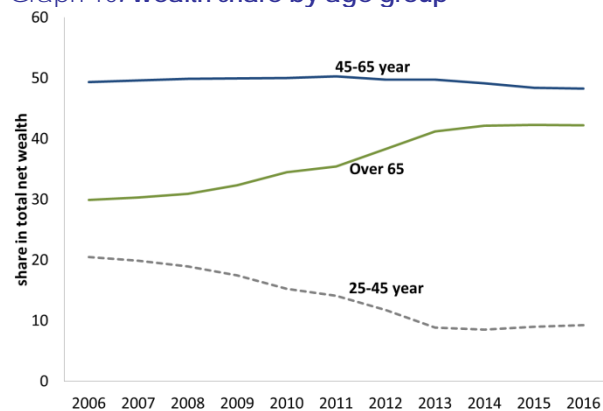
Source: Own calculations on CBS data.

Graph 11: **Real net wealth by generation**

Source: Own calculations on CBS data. Wealth inflated by price private consumption (NA).

An in-depth assessment of wealth inequality departs from annual cross sectional observations and takes the life-cycle into account. With households saving and accumulating wealth over time, it is not surprising that wealth is concentrated among older households. It is also socially optimal that younger generations take debt to invest in housing, or education. A very instructive result was obtained by Atkinson (1971), who showed that under different macro-economic assumptions about interest, real growth and consumption the top 10% wealth share varies between 17% and 27% in a perfect egalitarian society (where over the life-cycle every individual has the same amount of wealth). The relevant question thus becomes to what extent the intergenerational wealth inequality *exceeds* levels that can be explained via saving that occurs over the period of one's life.

To this end, Graph 12 plots as a first step a theoretical wealth by age distribution under the assumption that

life starts at the age of 25 and ends at 84, with 40 years of working life (saving) and 20 years of retirement (dissaving), scaled to the average 2014 wealth level. This represents the Modigliani-Brumberg life-cycle model in its simplest form. Today it is possible to harvest recent improvements in data-collection and look at actual incomes and saving behavior. Using household income and consumption by age from budget surveys, the graph also plots synthetic wealth series.

When in a next step, the actual data for two years, 2006 – the initial year for which there is sufficiently detailed data – and 2014, are compared with these counterfactuals, it becomes visible that actual saving in the working age is reasonably close to both the theoretical and synthetic series. Only when households retire, dissaving is not as fast as one could expect based on consumption maximising households.

In 2006 most households and in particular the baby boom generation (aged 55-65 back then) were richer than one would expect based on income and expenditure patterns. However, in 2014 the synthetic wealth curve lies above the actual wealth curve for all age groups, with relatively large differences for 25-35 year olds and households above the age of 75. The baby boom generation is still rich compared to other generations, but their net wealth is smaller than what could be expected based on income and expenditure patterns. This inversion between 2006 and 2014 could be explained by falling house prices, leading to lower housing wealth, or other factors such as gifts (given the tax incentive to transfer resources to descendants before death).

Graph 12: **Wealth and accumulated savings by age**
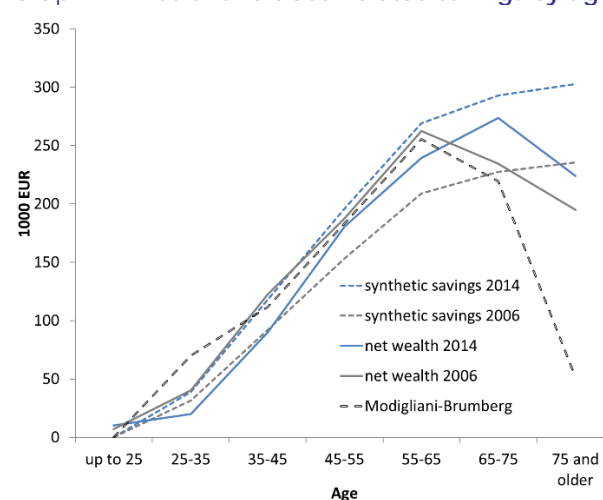
Source: Own calculations on CBS-data (wealth statistics, household income and budget surveys).

3. Conclusions

As there are no clearly identified optimal levels in the literature, inequality indicators should be interpreted with care. Nevertheless, the observations in this economic brief lead to some relevant conclusions:

1. Income inequality in gross income increased since the turn of the century, but due to redistribution via taxes and benefits, this trend was undone in terms of disposable income. The economic crisis and subsequent recovery and policy impulses have hardly affected the distribution of disposable incomes among households.

2. The income position of older households has substantially improved in the last decade. Technological progress has also led to a great deal of real income progression between different generations over time. However young generations (born after 1980) seem to have started their working careers at lower real incomes than previous generations.

3. High wealth inequality in the Netherlands is a debt-driven phenomenon. The Dutch Gini-coefficient is elevated given the large number of Dutch households with negative net housing equity.

4. In terms of net wealth the 'baby boom' generation (those born between 1941 and 1951) is much wealthier than all other generations. They were so ten years ago, and they are so today. However, the wealth distribution by age does not remarkably deviate from what one could expect based on current income and spending patterns.

The observed inequalities in the intergenerational distribution of income and wealth go with some tentative policy implications. For example, if one is concerned about high wealth inequality; one should also be concerned about cyclical housing market institutions and the debt bias for Dutch households, such as relatively generous mortgage interest deductibility. Phasing out mortgage interest deductibility in the personal income taxes would reduce the debt bias, strengthen household balance sheets and lower the wealth-risk that households face.

ANNEX A On the data used

This note uses household income and wealth statistics from Statistics Netherlands (CBS) via its open data portal *CBS Statline*. For the period 1990-2014 CBS derives these data from individual tax records and a

number of other administrative sources (for example the administration of child subsidies) via a large survey, the Household Income Panel Survey. For this income survey, Statistics Netherlands draws a random sample of 250,000 persons, together some 85,000 households. Taking into account the different sample probabilities, the sample is reweighed to make it representative. For the period 2011-2016, the CBS has full coverage of all households in the Netherlands combining information from different administrative sources (so called *'integral observation'*). Gross income is primary income, including received gross benefits (such as the elderly state pension, but also disability or child benefits). Second pillar occupational pension contributions are deducted (from labour income), but gross pension income is included. Disposable income is gross income reduced with paid taxes and social contributions, including compulsory health care contributions. Equivalised income is disposable income, adjusted for the size and composition of the household. The age of the household is defined as the age of the main income earner. For more detail on the CBS data: (in Dutch, for 1990-2014): https://www.cbs.nl/nl-nl/onze-diensten/methoden/onderzoeksomschrijvingen/korte-onderzoeksbeschrijvingen/inkomenspanelonderzoek--ipo-- and (in English, for 2011-2016) https://www.cbs.nl/en-gb/our-services/methods/surveys/korte-onderzoeksbeschrijvingen/integral-income-and-wealth-statistics, and for wealth (in Dutch, for the pre-2011): https://www.cbs.nl/nl-nl/onze-diensten/methoden/onderzoeksomschrijvingen/korte-onderzoeksbeschrijvingen/vermogensstatistiek-huishoudens--vanaf-1-januari-2006--). For international comparisons, the OECD Wealth Distribution Database is used (described in detail in OECD 2018). This database is constructed from national sources. This can be either household surveys or, as in the case of NL, tax and other administrative sources. For 17 countries, the OECD Wealth Distribution database uses the Euro-System Household Finance and Consumption Survey, sometimes complemented by estimates from national sources.

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