

Staff memo

Household financial saving since the Global Financial Crisis

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Net lending varies considerably over time and contributed to lower household saving prior to both the banking crisis and Global Financial Crisis (GFC), but to higher household saving during the pandemic. Net lending is defined as transactions in financial assets, such as bank deposits and securities, less changes in debt. After the coronavirus outbreak in 2020, net lending increased considerably for all age and financial wealth groups. The 10 percent wealthiest households accounted for most of the increase. A distinctive feature of the pandemic years is that the shift in net lending occurred mainly due to an accumulation of financial wealth and not due to reduced borrowing. A dichotomy in saving behaviour can be observed in 2021. For younger households and households with lower financial wealth, net lending fell as a share of disposable income, but increased for the other groups.

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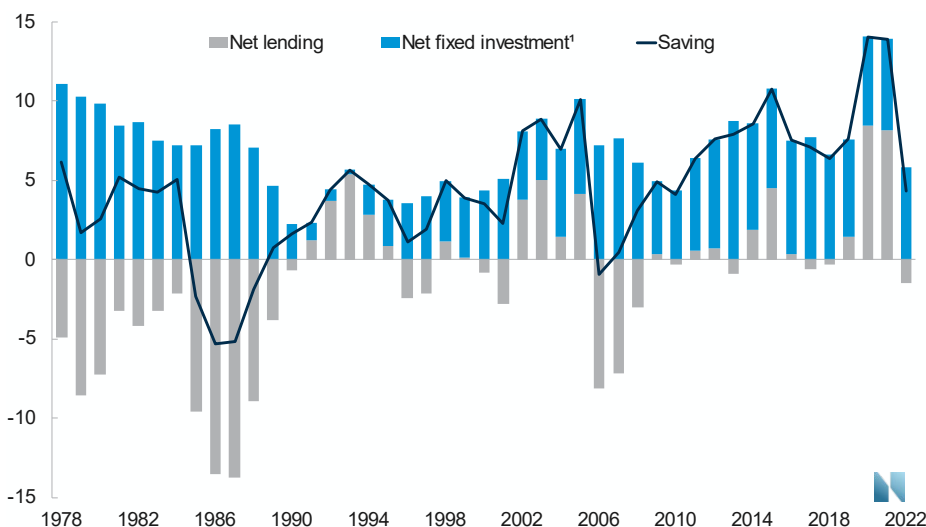
1. Introduction

In this analysis, we take a closer look at household financial saving using microdata over the years 2007-2021. The data offer the opportunity to shed light on how that saving has evolved over time, what kind of financial assets households save in, and how financial saving varies according to household characteristics such as age and individual finances. Households that save accumulate assets that they can draw on if income should fall or expenses should rise. In this way, households with assets are less vulnerable to unforeseen events. Insight into saving is therefore useful both when assessing household vulnerabilities and conducting monetary policy.

Many analyses indicate that household financial saving was extraordinary during the pandemic in 2020-2021 (see for example Brynestad et al. (2021)). Our dataset allows us to examine these years in greater detail than before. We know, for example, that bank deposits increased substantially for many household groups, but not the extent to which this is ascribable to the shift in savings away from other financial assets to liquid bank deposits. We can now shed light on this point.

Saving consists of two main components, net fixed investment and net lending (Chart 1). When a household purchases a dwelling, it constitutes a fixed investment. If we subtract the capital depreciation, we obtain net fixed investment. Household saving can also take the form of deposits or purchases of other financial assets, such as equities. Financial assets may increase both as a result of such financial investments or due to a rise in the value of financial assets, for example due to higher equity prices. A financial investment is the change in financial assets excluding capital gains and losses. An increase in

Chart 1. Net lending, net fixed investment¹⁾ and household saving. Percentage of disposable income. 1978 – 2022



1) Including net acquisitions of non-produced real capital less net capital transfers
Sources: Statistics Norway and Norges Bank

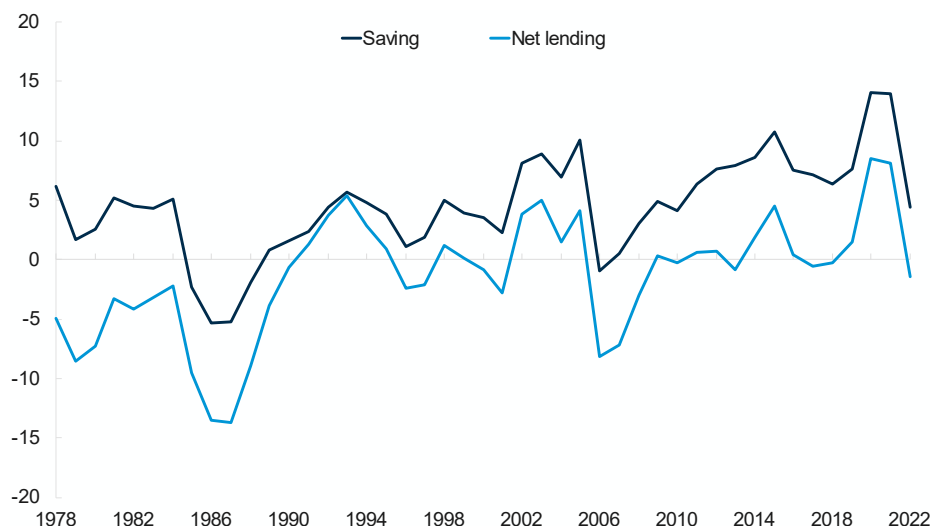
financial assets as a result of higher equity prices is therefore not considered to be a financial investment. Net lending is the difference between financial investments and the change in debt.¹

Historically, there have been considerable fluctuations in household saving and this is closely related to their net lending (Chart 2). High borrowing, which results in sharp falls in net lending, may increase household vulnerability and heighten the risk of financial instability. For example, household net lending dropped considerably before the banking crisis in the 1990s, largely because debt increased. When the economy shifted, household debt was reduced and net lending increased rapidly. Similarly, prior to the GFC that began in 2008, household net lending fell. At present, substantial fluctuations in net lending can be seen again.

In this analysis, we use figures at household level from *Income and wealth statistics for households*, (see Statistics Norway (2022)). The statistics provide a basis for studying net lending at household level and by financial instrument. However, the statistics do not include accumulated collective pension entitlements, which would have pushed up net lending with the accumulation of entitlements and down with deduction of pensions.² This part of financial investment is compulsory. In addition, this part of financial assets is illiquid and cannot be withdrawn as desired. Nor do the statistics include other savings or assets that are not stated in the tax return.

We find that net lending has moved on a positive trend since the GFC. After the coronavirus outbreak in 2020, net lending increased considerably. A distinctive

Chart 2. Net lending and household saving. Percentage of disposable income. 1978 – 2022



Sources: Statistics Norway and Norges Bank

¹ Property purchases financed by debt and accumulated financial assets produce both a positive and a negative effect on a household's saving. Fixed investment contributes positively, but negative net lending draws downward. The overall effect can be small. However, when debt is repaid, savings increase.

² See Halvorsen and Hetland (2023) and references therein for a discussion of this and presentation of relevant statistics.

feature is that this development occurred primarily due to substantial accumulation of financial assets, and not because of reduced borrowing.

During the coronavirus pandemic, net lending increased for all age groups, but primarily for households from their mid-50s and upwards. The 10 percent of the households with the largest financial wealth accounted for most of the increase in net lending during the coronavirus pandemic. Large dividend payouts, that primarily are received by the wealthiest households, likely contributed to this.

The article is organised as follows: The data are presented in Section 2. In Section 3, developments in net lending for all households are presented, while a more thorough analysis of the variation in net lending according to household age and size of financial assets is provided in Sections 4 and 5. Finally, the main findings are summarised in Section 6. An appendix explaining the data in further detail is also included.

2. Data

We base our analysis on annual figures at household level from Statistics Norway's *Income and wealth statistics for households* for the years 2007 – 2021 (Statistics Norway, 2022). The statistics contain data on financial assets by financial instrument, debt and income. The statistics are largely based on tax returns submitted by all individuals liable to tax in Norway, but also use other sources to include, among other elements, tax-free transfers.

Over the observation period, the number of households increased from 2.2 to 2.6 million (see Table 1). Age is determined by the age of the household's main income earner. Disposable income, which can be used for consumption and savings, increased on average by 65 percent from 2007 to 2021. Average financial assets increased by 150 percent, while both bank deposits and debt nearly doubled.

Since observed changes in financial assets from one year to the next may result from both transactions and changes in market prices, it is necessary to separate the portion derived from transactions. For bank deposits and debt, the change in the asset value from one year to another is generally equal to the transaction for the individual household. For other items, such as equities, the asset value may change because of both purchasing and selling (transaction) and changes in

Table 1. Number of households and average income, assets, debt and age. Selected years

	Million	Average				Number of years
		1000 NOK				
Year	Number of households	Disposable income	Financial assets	Bank deposits	Debt	Age
2007	2.2	369	673	282	806	49.4
2014	2.4	493	893	416	1172	49.8
2021	2.6	642	1687	571	1578	50.5
Change 2007-2021, percent	18	65	150	102	96	

Sources: Statistics Norway and Norges Bank

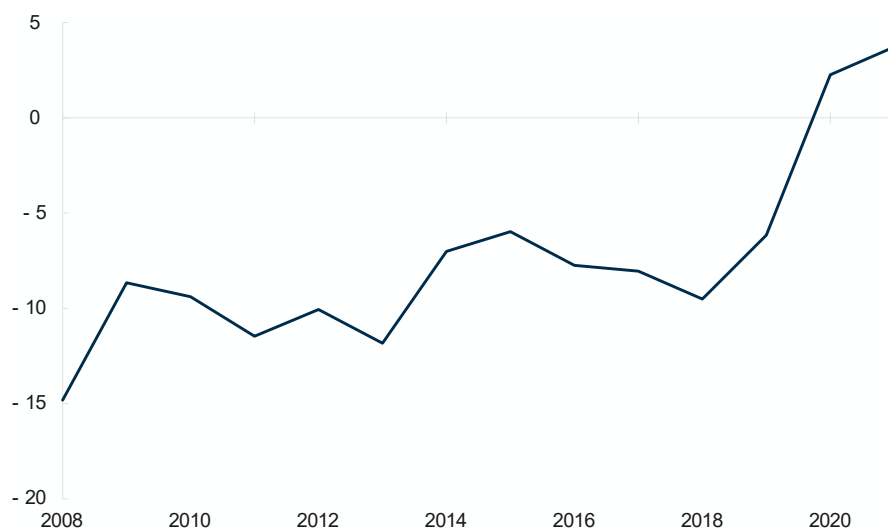
equity prices (gains or losses). However, our dataset does not provide a basis for directly separating the transactions for such items. As a basis for our approach, we use the ratio between transactions and stocks in Statistics Norway's financial accounts for items that include securities and mutual funds (see Statistics Norway (2023a)).³ The same ratio, taken from the financial accounts, is used for all households with such items. The error appearing in the calculated figures will be moderate for households with a transaction volume in relation to their stocks of securities and mutual funds that is near the level of the aggregate statistics. However, for some households the error may be substantial.

Appendix 1 describes the calculations based on the data in further detail. The appendix also contains more descriptive statistics.

3. Net lending – development and composition

Chart 3 shows household net lending calculated using microdata. A positive trend in net lending can be seen since the GFC, which began in 2008, although a couple of periods show some decline. Net lending was negative right up to the pandemic in 2020 – 2021.⁴ After the coronavirus outbreak, net lending increased considerably.

Chart 3. Household net lending as a percentage of disposable income. 2008 – 2021



Sources: Statistics Norway and Norges Bank

³ For a discussion on household net lending based on financial accounts, see Røstadsand and Sand (2023).

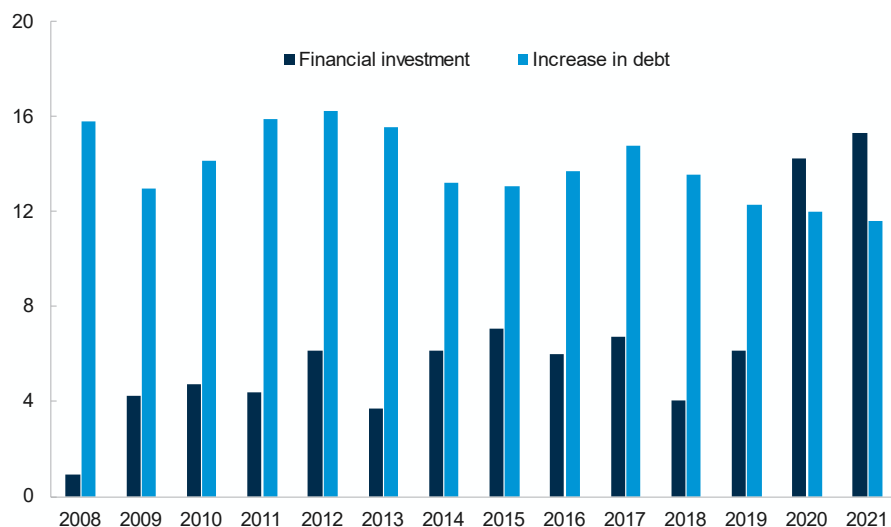
⁴ In contrast to the data basis in this analysis, official statistics, i.e. the income accounts in the national accounts and financial accounts, contain collective pension entitlements. The level of net lending in these macro figures is higher and has more positive values than the calculations using microdata. An adjustment of the financial accounts for this item provides a high degree of consistency with the micro-based figures (see Appendix 1).

Before the pandemic, households accumulated financial assets, but the increase in debt was even higher (Chart 4). During the pandemic, households' possibilities to spend money were limited and their financial investments increased significantly. Financial investments were so high that they exceeded the increase in debt, and net lending switched from negative to positive. An unprecedented feature of the pandemic years 2020 and 2021 is that this shift in net lending occurred mainly because of the vast accumulation of financial assets. Previously, as for example during the banking crisis in the early 1990s, such shifts have occurred essentially because of reduced borrowing.

The composition of household financial assets shows that securities that are not registered in the Norwegian Central Securities Depository (*VPS*), *non-VPS securities*, represent the largest item (Chart 5). They account for almost half of household financial assets. Non-VPS securities are mainly shares in companies that are not traded on a stock exchange or another formal marketplace, and which can therefore be difficult to value.⁵ *Bank deposits in domestic banks* constitute the second largest item, followed by *mutual funds and VPS-registered securities*⁶. The items *outstanding claims and bank deposits and other financial assets abroad* account for a relatively small share of household assets. *Other claims* comprise the remaining items of financial assets in the tax return.⁷

Bank deposits in domestic banks dominate household financial investment (Chart 6). Investments in *mutual funds and VPS securities* are generally in

Chart 4. Household financial investment and changes in debt. Percentage of disposable income. 2008 – 2021



Sources: Statistics Norway and Norges Bank

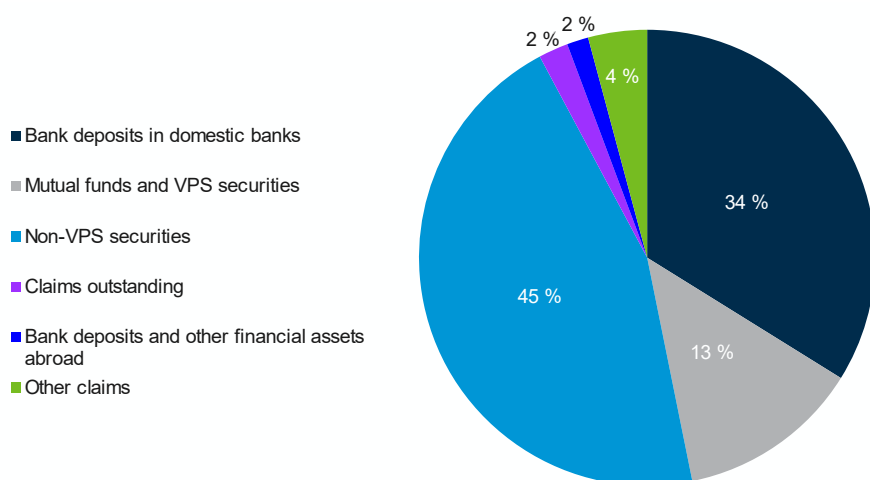
⁵ See Andresen and Bø (2022), who provide an analysis of the valuation of private equity. Private equity is relatively concentrated in households with the largest financial wealth.

⁶ Include all types of mutual funds.

⁷ Other claims comprise cash, other financial products and other assets (premium funds, individual pension schemes, repurchase value of life insurance policies, share of assets in housing companies and other taxable assets (capitalised ground rent, rights related to forests, share of partnership companies etc.)).

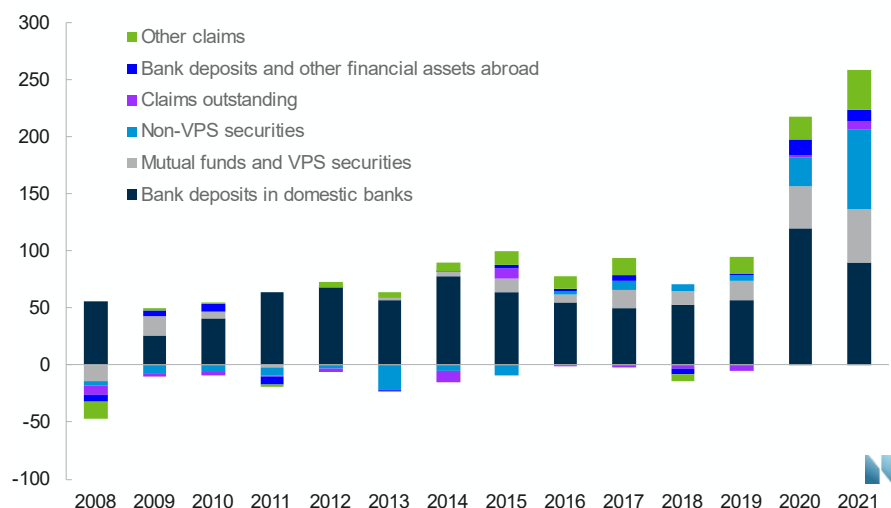
second place, but investments in *non-VPS securities* and in *other claims* can also be substantial. During the pandemic, households invested heavily in *bank deposits* and in *mutual funds and VPS securities*. Investments in *non-VPS securities* also increased sharply, particularly in 2021. Households invested in all types of financial instruments during the pandemic, which implies that they did not finance their investments through the sale of individual financial assets. If we analyse the distribution of households by age or size of financial wealth, the same conclusion is valid. Households invest in all types of instruments and investments are not financed by divestments in selected financial instruments.

Chart 5. Household financial assets by financial instrument. Percent. 2021



Sources: Statistics Norway and Norges Bank

Chart 6. Financial investments by financial instrument. Billions. 2008 – 2021



Sources: Statistics Norway and Norges Bank

4. Net lending by age group

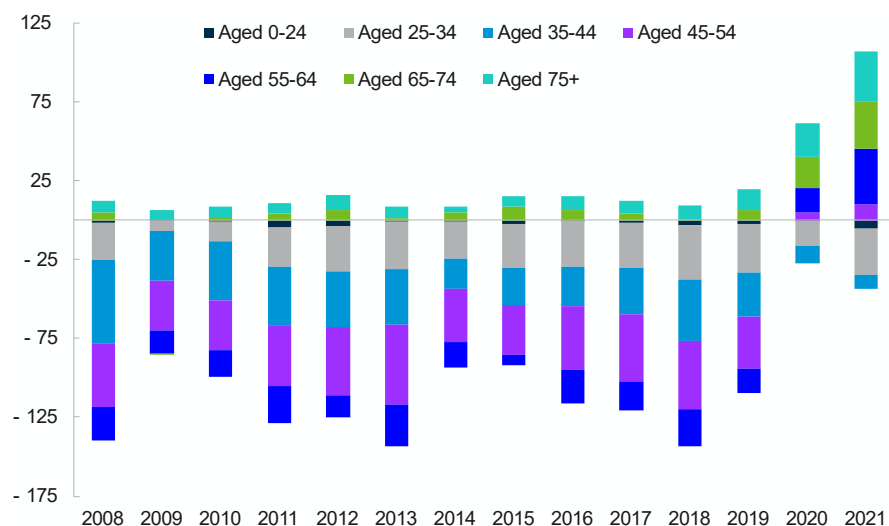
In the years prior to the pandemic, net lending was negative for most age groups, but particularly in the three age groups between 25 and 54 years (Chart 7).⁸ These households invest relatively heavily in dwellings and holiday homes and save in the form of net fixed investment.

Normally, positive net lending can only be observed in the above 65 age groups. This is because households with substantial financial assets save considerably (see Section 5), and in the above 65 age group these wealthy households dominate financial saving. Based on the life-cycle hypothesis (LCH), one might expect elderly households to reduce their financial assets, especially the portion over which they have full control.⁹ When the opposite conclusion is drawn, this may reflect several elements. Some may wish to pass on inheritance in the form of financial assets to the next generation. Most elderly households are homeowners and may desire a buffer for greater unforeseen costs when income is lower. And, as one ages, spending capacity may drop, leading to increased saving.

During the pandemic, net lending picked up for all age groups. For those aged between 45 and 64 years, net lending even switched from negative to positive.

The number of households in the different groups varies. In addition, some shift in household distribution by age can be seen over time (Chart 8). An increase in the share of elderly is the most essential point. In the following, we therefore look at the average development or development in relation to the groups' disposable income, in addition to the overall development.

Chart 7. Net lending by age. Billions. 2008 – 2021



Sources: Statistics Norway and Norges Bank

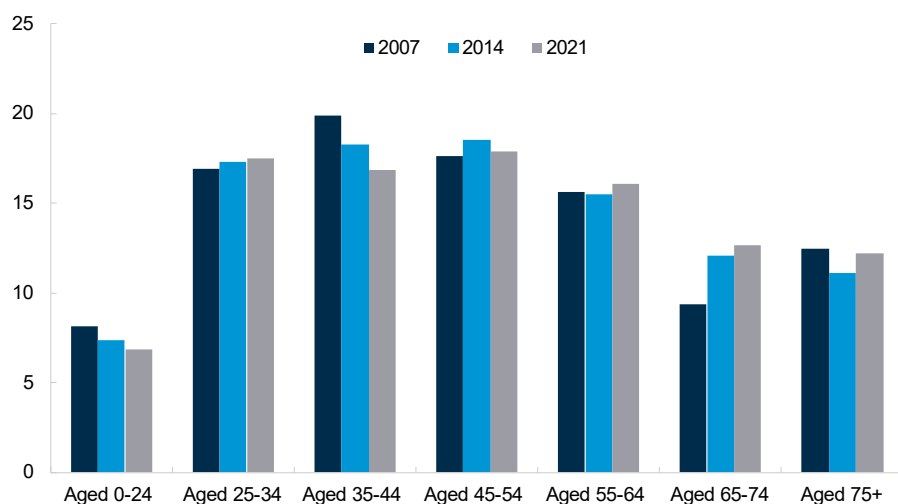
⁸ See appendix for a more detailed description of the age groups.

⁹ As stated, these figures do not include the accumulation and deduction of collective pension entitlements, so that net lending is underestimated for younger households and overestimated for pensioners.

In the following, we look at the two components of net lending, financial investments and changes in debt. On average, all age groups accumulate financial assets over time, i.e. have positive financial investments, but financial investments are highest among the elderly (Chart 9). Despite some difference in the number of households and some shifts between age groups, the conclusion is very similar for developments in total financial investments by age group. During the pandemic, a marked increase in financial investments took place.

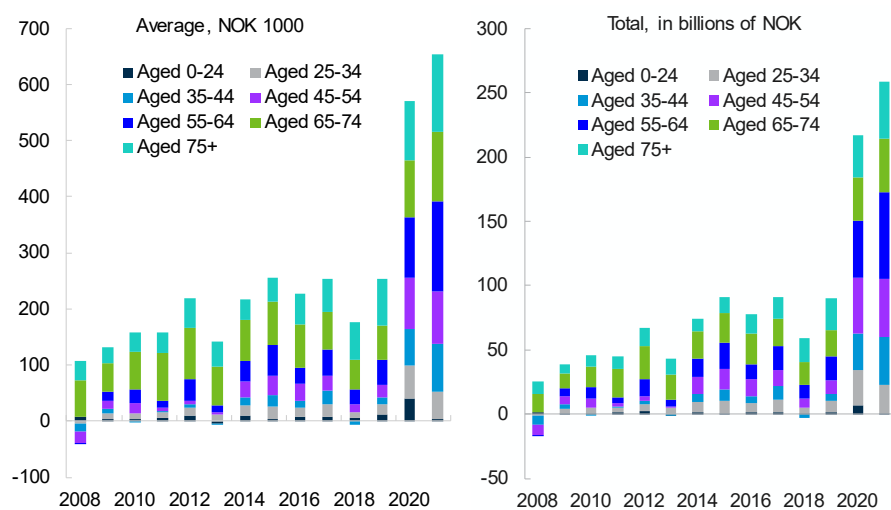
The second component of net lending, the average change in debt, is substantial for most people under retirement age (Chart 10). Borrowing is largely related to the rise in house prices and activity in the housing market. A higher average level of borrowing during the pandemic than in previous years can be observed for the 25-44 age groups, which comprise many households in the establishment phase and in the phase of increasing housing needs. The opposite was true for the two groups aged between 45 and 64. On average,

Chart 8. Household distribution by age group. Selected years. Percent



Sources: Statistics Norway and Norges Bank

Chart 9. Financial investment by age. Average and total. 2008 – 2021

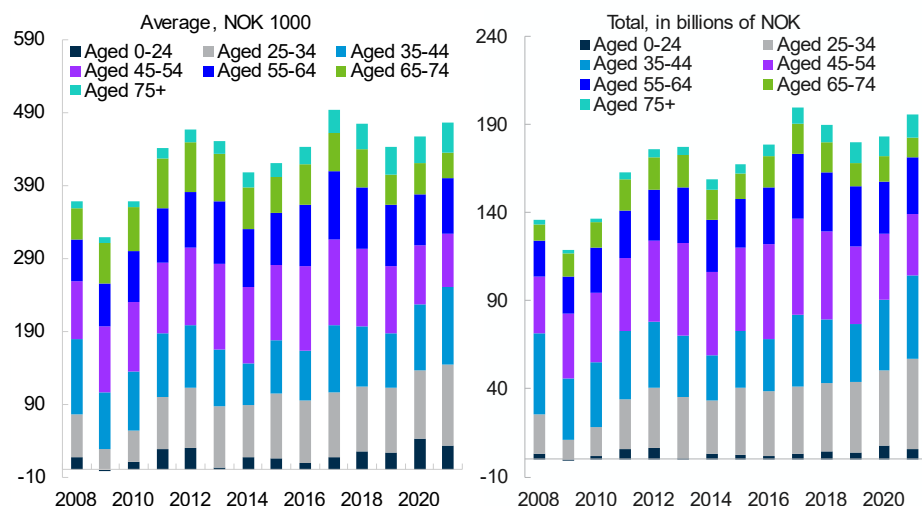


Sources: Statistics Norway and Norges Bank

these two groups have both relatively large financial assets and disposable income. For these two groups, the need to take on debt during the pandemic seems to have been less pronounced. We find that overall debt accumulation shows the same pattern as the average.

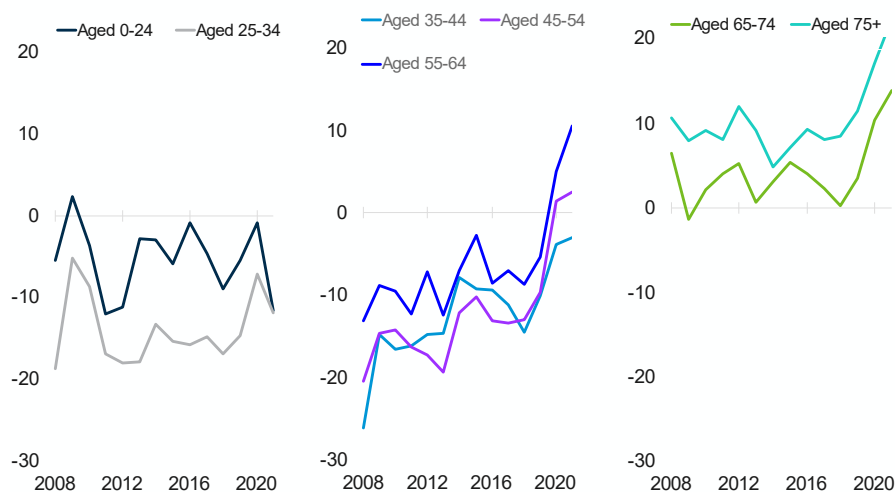
Disposable income can be used for consumption or saving, and relative to income, net lending was bolstered in all age groups in 2020 (Chart 11). Pensioners have lower disposable income than many younger households (see Table A1 in Appendix 1) and save to a relatively high degree.¹⁰ However, in

Chart 10. Increase in debt by age. Average and total. 2008 – 2021



Sources: Statistics Norway and Norges Bank

Chart 11. Household net lending as a percentage of disposable income by age. 2008 – 2021



Sources: Statistics Norway and Norges Bank

¹⁰ An analysis of tax return figures regarding total savings, which also include net fixed investments, shows essentially the same pattern across age groups (see Halvorsen (2011)). The saving ratio for the oldest age groups is highest.

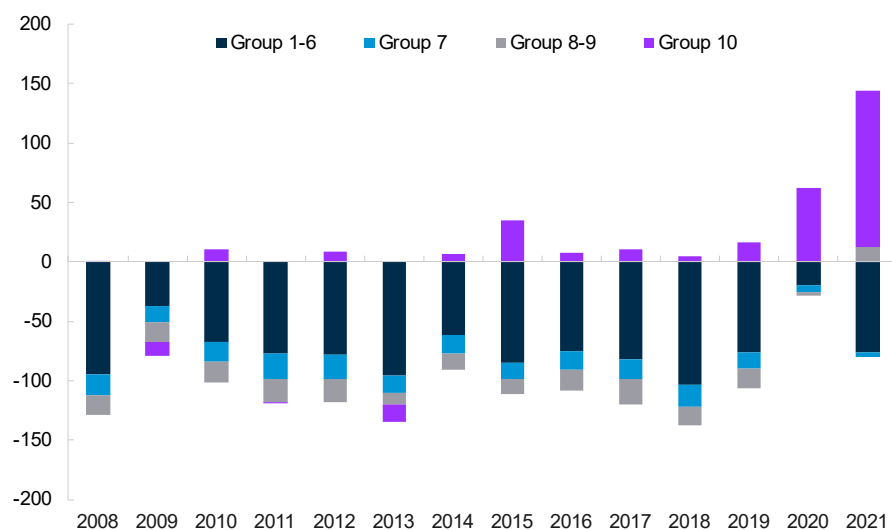
the second pandemic year, a dichotomy in saving behaviour can be observed: For the 35 and above age group, household net lending continued to move up, while net lending among young people dropped. This may reflect the fact that activity in the housing market picked up quickly, while tourism and cultural activities, which are largely also used by the elderly, remained low for a longer period (see for example Lindquist et al. (2021) and Nickelsen and von Hirsch (2022)).

5. Net lending by financial wealth groups

Previous analyses have revealed considerable differences in household net lending when dividing households by financial wealth group (see Riiser (2009))¹¹. Most wealth groups have negative net lending (Chart 12). Only the top group, the one with the largest financial wealth, has positive net lending in several of the years. During the pandemic, net lending increased across all wealth groups, but was nevertheless still negative for most groups. The greatest and most unprecedented increase in net lending in our dataset can clearly be observed in the group with the largest financial wealth. In groups 8 and 9, net lending switched from negative to positive during the pandemic. Among groups 1-6, households with low to medium financial wealth, net lending turned significantly negative again as early as 2021.

Financial assets are concentrated to decile 10, and households in this group own more than 70 percent of total financial assets (Chart 13).¹² They own a

Chart 12. Household net lending by financial wealth group (decile). Billions. 2008 – 2021



Sources: Statistics Norway and Norges Bank

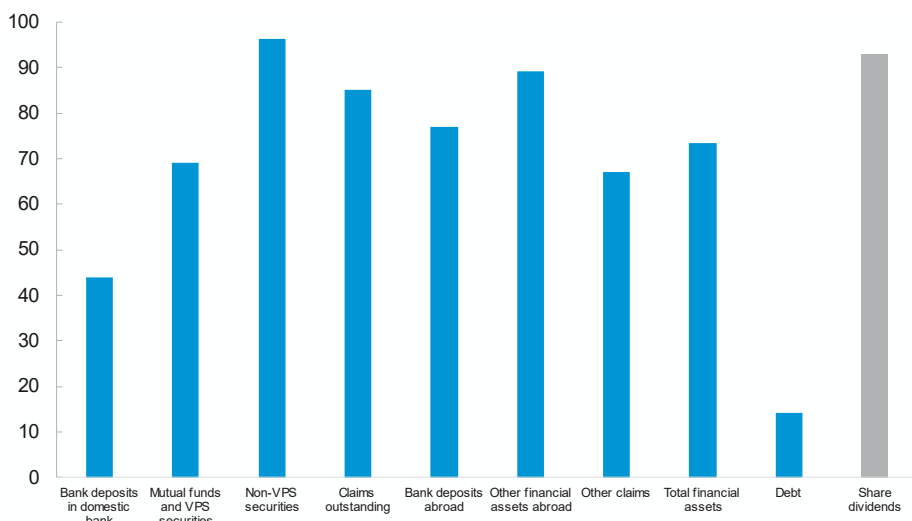
¹¹ For each year, households are arranged by ascending financial assets and divided into 10 groups with an equal number of households in each group (decile). See Appendix 1 for descriptive statistics by financial asset group.

¹² The distribution of financial wealth is more skewed than shown in Chart 13. The top percentile, i.e. the one percent of the households with the largest financial wealth, own about 45 percent of total financial assets. They also dominate net lending in 2020 and 2021 (Chart 12).

significant share of all items, and for non-VPS securities, their share reaches 96 percent. At the same time, they have a low share of total debt. This wealth group receives the main share of total dividends. In years with large dividend payments, their net lending may increase considerably and draw total net lending up significantly, such as in 2021.¹³

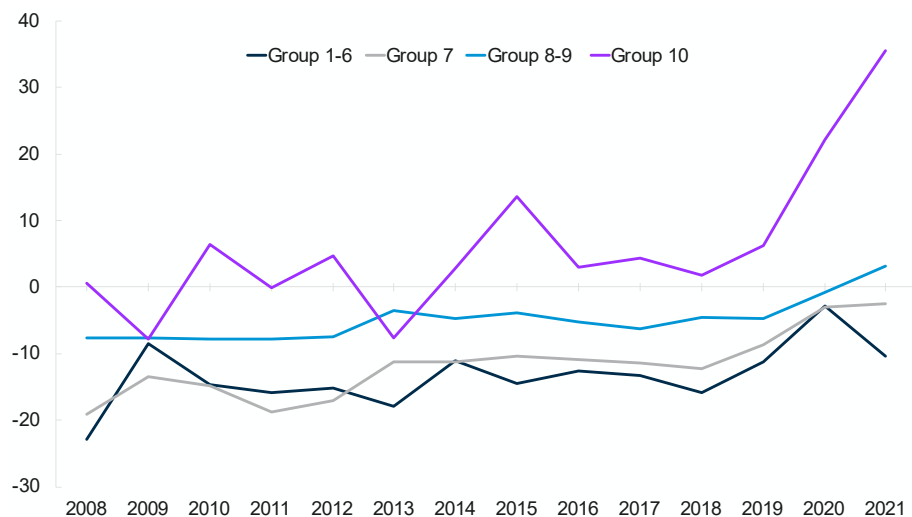
When observing net lending relative to disposable income, a dichotomy can be seen (Chart 14). While net lending continued to increase for the higher wealth

Chart 13. Financial assets, debt and dividends for households in financial wealth group (decile) 10. Percentage of total amount for all households. 2021



Sources: Statistics Norway and Norges Bank

Chart 14. Net lending as a percentage of disposable income. Households by financial wealth group (decile). 2008 – 2021



Sources: Statistics Norway and Norges Bank

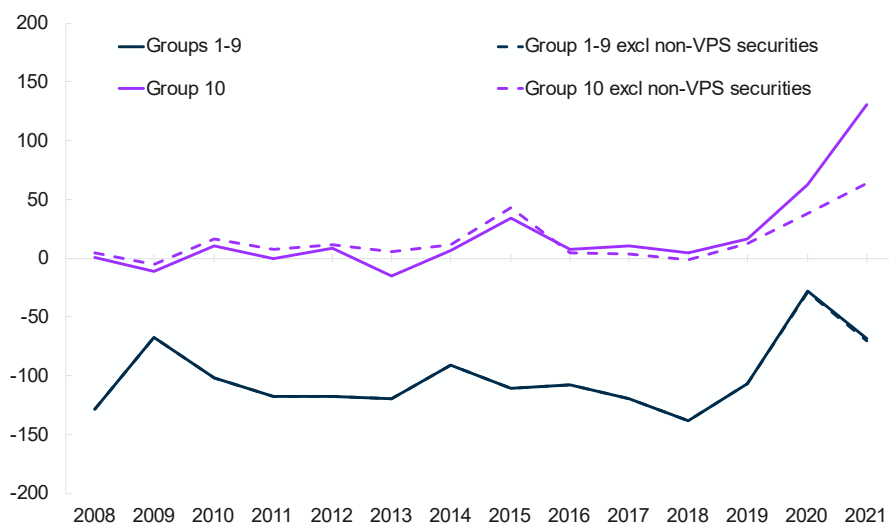
¹³ Large fluctuations in dividends are often tax-motivated, as in the period 2002-2005 when the taxation of share dividends was changed (see Riiser (2009)). In 2021, the tax on share dividends was raised, effective from 2022. This may have contributed to the large dividends in 2021. Certain restrictions on dividend payments during the pandemic year of 2020 may also have contributed to the large payments in 2021.

groups in 2021 compared to 2020, it fell in the lower to middle wealth groups (deciles 1-6). However, an unusually high initial level preceded the decline seen for these groups. The decline can thus be considered as a return to a more ordinary saving behaviour.

Our calculations are based on several assumptions. Among other things, we apply the ratio between transactions and stocks in the financial accounts to estimate financial investments based on microdata. However, *non-VPS securities* are valued employing different methods in financial accounts and in microdata. In the financial accounts, households' ownership share of the companies' *book equity* is used. In the calculations using microdata, which are based on tax returns, the basis is the companies' *net worth*. In periods marked by sharp increases in net worth, our calculation of financial investments in *non-VPS securities* might be overestimated. To assess the robustness of our results, we have calculated net lending excluding investments in *non-VPS securities*. As Chart 13 indicates, this primarily affects net lending in the top wealth group (decile 10 (Chart 15)).

In the calculations excluding *non-VPS securities*, we find again that net lending increased significantly in both 2020 and 2021 in the top wealth group, albeit less. For the remaining groups, the omission of *non-VPS securities* has a limited impact. The wealthiest group still dominates developments, but without *non-VPS securities*, total net lending turns slightly negative in 2021. Actual development in net lending for the wealthiest group probably lies between the two series with and without financial investments in *non-VPS securities*. But the financial accounts also show that over the period analysed, financial investments in *non-VPS securities* were particularly high in 2020 and 2021, both in absolute value and in relation to stocks. This implies that net lending in group 10 can be assumed to be somewhat higher than the dotted line in Chart 15.

Chart 15. Household net lending by financial wealth group (decile). Billions. 2008 – 2021



Sources: Statistics Norway and Norges Bank

6. Summary

In this article, we analyse household net lending using microdata over the period 2007-2021. We exclude accumulation of and deduction of collective pension entitlements. Net lending follows a positive trend post-GFC, i.e. from 2008. However, net lending was negative until 2020. Net lending grew considerably for all household groups after the coronavirus outbreak in 2020. For several groups, it shifted from negative to positive, which historically is an unprecedented development.

Net lending tends to be positive for the 65 years and above age groups. During the pandemic, net lending increased for all age groups, but primarily for age groups 55 years and above. For households aged between 45 and 64 years, net lending shifted from negative to positive. As a share of disposable income, net lending also increased for all household age groups in 2020. However, in 2021, net lending as a share of disposable income fell for the under 35 years age groups, while it continued to increase for the other age groups.

Only the 10 percent of households with the highest financial wealth (decile 10) had positive net lending in certain years prior to the pandemic. This group accounted for most of the increase in total household net lending during the pandemic. Financial wealth deciles 8 and 9 also had positive net lending during the pandemic. For the other wealth groups, net lending remained negative. Regarding net lending as a share of disposable income, a dichotomy appeared in the economy in 2021: net lending fell for households with lower to medium financial wealth (deciles 1-6), while it continued to increase for households with higher financial wealth (deciles 7-10).

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Appendix 1. More detailed description of the data

Our dataset comprises all households that submit a tax return in Norway and have a household number.

Descriptive statistics, 2021

Age

The youngest age group has the fewest households, 180 000 persons, while the largest is the 45-54 years age group with just over 470 000 households in 2021 (see Table A1). Average financial assets rise with increasing age up to NOK 2.6 million in the 55-64 years age group, and then decreases. Average bank deposits are highest for the two oldest age groups. Much of the oldest persons' financial assets are in the form of liquid bank deposits. Average disposable income reaches a peak of NOK 821 000 in the 45-54 years age group, while financial assets reach a peak in the age group above.

Financial wealth groups

While financial assets in the middle wealth group, group 5, vary between NOK 202 000 and NOK 328 000 in 2021, they range between NOK 2.6 million to NOK 35.6 billion in the wealthiest group (see Table A2). Furthermore, we note that average financial assets and debt are NOK 261 000 and 1.7 million respectively in group 5. The average age increases in line with the wealth group, and among the wealthiest group the average age is 60 years.

Table A1. Descriptive statistics, age groups. 2021

Age group	1000	Average, 1000 NOK			
	Number of households	Financial assets	Bank deposits	Disposable income	Debt
0-24 years	180	349	165	248	627
25-34 years	460	882	286	537	1888
35-44 years	444	1242	346	719	2399
45-54 years	472	2014	483	821	2200
55-64 years	423	2564	728	801	1576
65-74 years	334	2485	998	639	853
75+ years	322	1734	994	439	380

Sources: Statistics Norway and Norges Bank

Table A2. Descriptive statistics, wealth groups¹. 2021

Wealth group ¹	1000 NOK	Average, 1000 NOK				Average, years
	Maximum financial assets	Financial assets	Bank deposits	Disposable income	Debt	Age
1	14	4	4	280	549	42.5
2	51	31	26	399	1094	44.5
3	113	80	64	464	1457	45.5
4	202	155	124	508	1618	46.6
5	328	261	206	555	1726	48.1
6	511	413	319	607	1796	50.0
7	798	642	480	669	1837	52.7
8	1325	1032	739	733	1784	56.0
9	2618	1852	1232	811	1672	59.2
10	35610218	12396	2515	1396	2251	60.1

¹) Households are sorted by increasing financial assets and divided into 10 groups (deciles) with the same number of households in each group.

Sources: Statistics Norway and Norges Bank

More about the data calculations

Since we use tax return figures, we must also take into account technical changes in taxation that affect the figures we obtain. Prior to 2008, discounts were granted for certain financial asset, e.g. listed and unlisted equity, mutual funds, equity certificates, etc. The figures for 2007 include these items with tax value and we have adapted them to market value, i.e. excluding valuation discounts.

The share savings account (ASK) was introduced in 2017 and is intended to be used for trading in listed equities and mutual funds. We add this to mutual funds and securities registered in the Norwegian Central Securities Depository (VPS securities) in our data.

The data also include an unallocated item for securities from 2019. To calculate transactions in financial assets, we divide this item between mutual funds and securities registered in the Norwegian Central Securities Depository (securities VPS) on the one hand and securities non-registered in the Norwegian Central Securities Depository (non-VPS securities) on the other. We distribute the item so that the growth in the sum of mutual funds and VPS securities in our data is the same as the growth in the sum of the corresponding items in the financial accounts in 2019-2021.¹⁴ Market prices for mutual funds and VPS securities are available, and there are good statistics for the stocks of the corresponding items in the financial accounts. Therefore, we choose this method to split the unallocated item in our data.

We calculate transactions in funds and securities based on the ratio between transactions and stocks in Statistics Norway's financial accounts (Statistics Norway, 2023a) for items containing funds and securities: mutual funds, VPS securities and non-VPS securities, respectively. The error that appears in the calculated figures will be moderate for households with a transaction volume in relation to their stocks of securities and mutual funds close to the aggregate statistics, but the error may be considerable for some households.

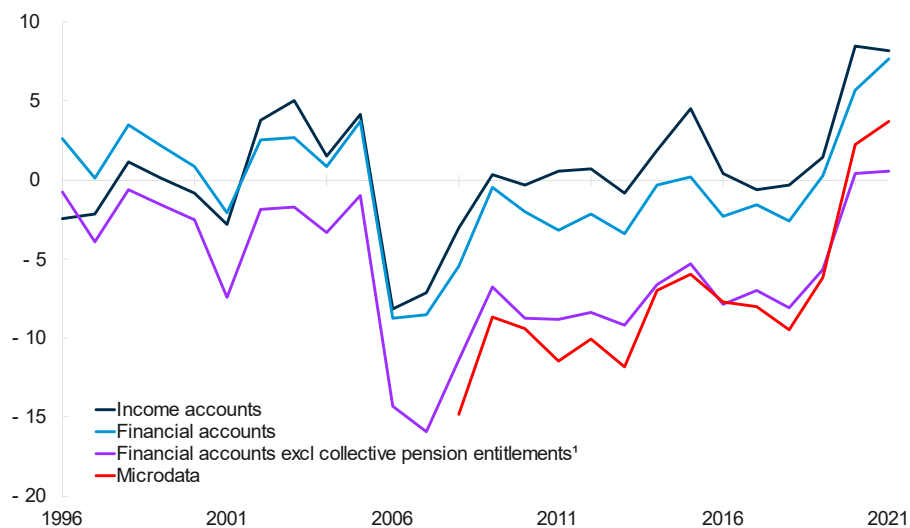
Net lending calculated using macro figures (official statistics) and microdata

In general, net lending is partly based on calculations, and it is useful to compare calculations based on different sources. We compare our calculations on microdata with net lending in both the income account, which is part of the national accounts, and in the financial accounts (Statistics Norway, 2023b and 2023a) (see Chart A1). In both these official statistics, household net lending is estimated based on macro figures. The two macro-based series indicate the same development, but some discrepancies can be observed in most of the years. This is due to different methods for estimating net lending. In the income accounts, net lending is calculated as a residual, and there are several possible

¹⁴ The corresponding items in the financial accounts are investment fund shares or units, listed shares, other equity and debt securities. Debt securities are included, because VPS securities in microdata include debt securities.

sources of incorrect measurement.¹⁵ The financial accounts, on the other hand, use information about household sector debt and financial assets by financial instrument in the calculations. Net lending is calculated as the increase in financial assets corrected for capital gains and losses (transactions in financial assets) less the increase in debt. This is essentially the method we use but at household level.

Chart A1. Household net lending as a percentage of disposable income. Income accounts, financial accounts and microdata. 1996 – 2021



1) Net lending excluding collective pension entitlements, accumulated entitlements, entitlements to non-pension benefits and non-life insurance technical reserves.
Sources: Statistics Norway and Norges Bank

The tax return, and thereby our microdata, do not contain figures for households' accumulated collective pension entitlements, which are included in the calculation of net lending using macro figures. In order to compare our calculations with the macro figures, we have adjusted the macro figures from the financial accounts for among others accumulated collective pension rights (Chart A1). Net lending calculated using microdata shows the same trajectory as the corrected financial account figures, but with deviations in some years. The main explanation for the deviations is that the items in the two statistics are not completely identical, and that there may be differences in the valuation methods for the various items.

¹⁵ Net lending in the income accounts = Savings + net capital transfers – gross investments + depreciation of capital – net acquisition of non-produced real capital. Saving = disposable income – consumption.