Norges Bank

8 | 2024

Staff memo

The driving forces behind households' accumulation of consumer debt

27.11.2024

Himal Gautam
Ella Getz-Wold
Magnus A. H. Gulbrandsen
Plamen Nenov

ISSN 1504-2596 (online)
ISBN 978-82-8379-343-7 (online)

The driving forces behind households' accumulation of consumer debt*

Himal Gautam Ella Getz-Wold

Magnus A. H. Gulbrandsen Plamen Nenov

Abstract

In this Staff Memo we explore the determinants of unsecured consumer debt among Norwegian households using detailed administrative data from 2020 to 2024. We identify a set of key drivers, including life-cycle patterns, labor market shocks, and homeownership transitions. Our findings reveal that younger households, renters, and individuals with limited financial assets are more likely to rely on consumer loans. Homeownership reduces dependence on such debt through access to lower cost credit options, while unemployment increases reliance on unsecured loans for consumption smoothing. Our results highlight the interplay between financial vulnerability, life events, and debt composition, offering policy insights for promoting financial stability and mitigating household debt risks.

*This paper should not be reported as representing the views of Norges Bank. The views expressed are those of the authors and do not necessarily reflect those of Norges Bank. Gautam: BI Norwegian Business School and Norges Bank, himal.gautam@bi.no; Getz-wold: BI Norwegian Business School and Oslo Housing Lab, ella.g.wold@bi.no; Gulbrandsen: Norges Bank, magnus.gulbrandsen@norges-bank.no; Nenov: Norges Bank, plamen.nenov@norges-bank.no.

1 Introduction

Unsecured consumer loans comprise only 3% of total loans to Norwegian households.[1] However, the nature of this type of debt makes it more susceptible to default. Thus, high growth in consumer loans could pose a threat to financial stability. It might also be viewed as a "leading indicator" of greater financial vulnerabilities building up. While macroprudential authorities tend to focus on the level or growth in *total household debt* (e.g., total debt-to-income), some studies have argued that debt accumulation that finances "over-consumption" is a better indicator of financial vulnerabilities building up (see, e.g., Andersen et al. (2016), Svensson (2021), and Jordà et al. (2013)). Hence, understanding why households take on consumer loans is important, even in normal times.

From the perspective of an individual household, consumer loans may offer a fast and flexible source of liquidity. During periods of unforeseen extraordinary expenses or shorter periods of reduced cash flow, such loans may provide households with a way to smooth consumption, which can be easily rationalized. The downside of this flexibility, however, is high interest rates and shorter amortization schedules. Often, consumer loans are also associated with "over-consumption," which is front-loaded consumption that is not justified by an expected increase in future income. For example, Lindquist et al. (2024) document that 52% of all consumer debt is held by the 11% of the population defined as "risky borrowers." Consequently, consumer loans are considered riskier debt and have higher default rates.

Previous analyses for Norway support the over-consumption narrative. Renters, young individuals, men, and relatively high-income earners are overrepresented among those with significant consumer debt (see, e.g., Solheim and Vatne (2022) and Solheim and Vatne (2024)). Furthermore, these individuals typically hold multiple loans and are in arrears. On the other hand, we also know that about one in four Norwegian households hold smaller unsecured consumer loans, and that almost every Norwegian owns a credit card. We know less about which factors are most significant and why some households end up with substantial consumer debt.

[1] The common Norwegian term for such loans is 'forbrukslån', which translates directly to 'consumer loan'. We thus use the terms 'consumer debt', 'unsecured debt', and 'unsecured consumer debt' interchangeably in this paper.

Thus, in this memo we ask: what are the driving forces behind households' accumulation (and repayment) of consumer debt? More narrowly we want to understand how different life events, such as becoming a homeowner, or a period of unemployment, impact consumer debt holdings. We seek to answer these questions by analyzing detailed administrative data at the household level for all Norwegian households during the period 2020 – 2024. Our main data source is the Norwegian debt register, which contains information on unsecured debt on the individual level. We link these data with tax return data from Statistics Norway, which provides detailed information on individuals' balance sheets. Finally, we add data from the population register, which includes household characteristics and education.[2]

With this dataset, we start by focusing on a snapshot from September 2024 and provide detailed summary statistics of holders and non-holders of unsecured debt. Our initial analysis suggests that the presence and level of unsecured debt in a household's balance sheet can largely be explained by life-cycle patterns (i.e., age, household size) but also by specific balance sheet characteristics (housing wealth, and financial wealth). Our first set of regression analyses utilizes the cross-sectional dimension of the data to help us better understand the extensive and intensive margin choices that households make. A key takeaway is that housing seems to provide households with cheaper credit through mortgage refinancing, rather than through expensive consumer loans.

In a final exercise, we exploit the panel dimension of our data as we delve deeper into the drivers of consumer debt by performing a fixed-effects panel analysis focusing on the effect of important life events ("triggers"), such as house purchases, on unsecured debt. Overall, our results indicate that homeownership and the composition of wealth are significant drivers of households' unsecured debt choices. Furthermore, our findings suggest that households actively substitute unsecured debt with and other types of debt (e.g., mortgages) around the time of a house purchase.

Our paper builds on previous analyses from Norges Bank using data from the debt register. Since the introduction of the register in 2019, regularly published Staff Memos and blogs have documented the aggregate development of unsecured debt in Norway and deepened our understanding of the important characteristics of unsecured debt holders

[2] All data are pseudonymized.

and its composition (Solheim and Vatne (2019, 2021, 2022, 2023, 2024); Lindquist et al. (2024)). In the first analysis after the introduction of the debt register, Solheim and Vatne (2019) documented that many Norwegians hold some consumer debt, and that individuals with consumer debt above NOK 500,000 hold roughly 40% of all consumer debt. They further documented a life-cycle pattern where debt is highest among middle-aged households (35–55 years old). In Solheim and Vatne (2024), the authors documented that the aggregate nominal growth in unsecured debt seen in 2023 was concentrated among younger and higher-income individuals. This contrasts with 2022, where Solheim and Vatne (2023) showed that growth was particularly high among low-income households. Lindquist et al. (2024) documented that a disproportionate share of unsecured debt is held by low-income households. They also examined the relationship between homeownership and unsecured debt and found that 40 percent of consumer debt is held by non-homeowners. Among homeowners, consumer debt represents only a small portion of their total debt, and this portion is even smaller for first-time home buyers.

Part of the objective of these papers is to shed light on the development in unsecured debt over time, given the broader state of the economy. Our paper, on the other hand, intentionally abstracts from cyclical patterns. Instead, we seek to shed light on the fundamental causes and household-level decisions. To do so, we utilize both the time dimension and the cross-sectional heterogeneity in the microdata. Thus, we do not aggregate data into larger groups (e.g., age, income) but keep the household as our unit of analysis in the various analyses. The panel dimension of the data allows us to apply household- and time-fixed effects to control for unobserved factors as well as time-dependent factors (such as the outbreak of the Covid-19 pandemic).

The broader research literature on consumer debt addresses key aspects of consumer credit dynamics, personal bankruptcy and their macro and financial stability implications. Auclert et al. (2019) highlight the macroeconomic and financial stability impacts of consumer credit by examining how debt relief interacts with economic downturns. They show that in the Great Recession, U.S. states with stronger bankruptcy protections saw smaller employment declines and higher debt write-downs. In states where debt write-downs were more difficult, unemployment was higher. These findings underscore the role of consumer debt build-up and personal bankruptcy rules in exacerbating economic downturns. Com-

plementing this, Dobbie et al. (2017) find that Chapter 13 bankruptcy protections not only improve individual financial outcomes, such as increasing homeownership and credit scores, but also reduce adverse events like foreclosure. These findings highlight the potential strong downsides to consumer debt accumulation at the individual level, while also suggesting that structured debt relief can benefit borrowers over time.

A special market of interest internationally is the payday loans market. Melzer (2011) raises concerns about payday lending by documenting that access to such loans does not alleviate financial hardship for low-income households; rather, it often exacerbates their financial challenges due to high repayment burdens. Dobbie and Skiba (2013) on the other hand highlight issues of adverse selection in that market. They find that while larger payday loans (in $50 increments) correlate with a lower default probability, borrowers who opt for these larger loans tend to have a higher risk of default overall. Their findings challenge the causal effect of consumer credit accessibility on personal financial instability and instead suggest that there may be reverse causality – individuals with higher inherent propensity to default tend to self-select into larger consumer debt balances.

Credit-card debt – a major source of consumer credit in many countries – has also received substantial attention. Research by Chatterjee et al. (2023) examines the heterogeneity in the credit card market, showing that interest rates generally decline with higher credit scores and incomes, though rates for higher credit scores do not drop significantly compared to those for lower scores. Their findings indicate that credit card markets may reduce the marginal propensity to consume (MPC), especially among low-income individuals, potentially affecting their economic stability. In a related analysis, Chatterjee and Eyigungor (2023) explore credit scores as a reflection of individuals' unobservable traits, such as patience, which shape lenders' perceptions and affect repayment incentives through a dynamic reputation mechanism.

This Staff Memo is structured as follows. Section 2 describes the data in greater detail. Section 3 provide three sets of results: Section 3.1 provides descriptives on groups that hold consumer debt and groups that do not; Section 3.2 presents cross-sectional regression results, and finally, Section 3.3 focuses on important life events as triggers for consumer debt accumulation or de-accumulation. Section 4 discusses some policy implications of our results, suggests some further research, and concludes.

2 Data

We obtain data on the level, nature and attributes of unsecured consumer debt held by individuals in Norway using a debt register that has been in place in Norway since 2019[3]. The register is updated at regular intervals by lenders for new and existing debt, and also used by lenders to assess whether they can provide additional debt to an individual. Consumer debt is classified into the following three broad categories and contains data on certain key attributes for each type of debt:

1. **Repayment Loans (Nedbetalingslån)**: These are consumer loans with an agreed repayment period.[4] The loans could be paid over time in several installments or fully at maturity. The register contains, among other items, information on the loan amount at origin, the balance of interest bearing debt, and nominal interest rate.

2. **Credit Lines (Rammekreditt)**: These are loans where the customer has an approved credit limit (such as credit cards) and can draw up to the limit or repay it as she likes. In such loans, the debt can be interest bearing, non-interest bearing, or a combination of the two. The register contains information on the credit limit, interest bearing debt, non-interest bearing debt, and nominal interest rate, among other items.

3. **Charge Cards (Faktureringskort)**: These include payment cards/loans where everything must be paid on the due date. The register contains the balance for interest bearing debt and non-interest bearing debt on these loans.

Data is obtained from the register on a bi-weekly basis. We observe two entries per month, once in the middle of each month, and once at the end of each month. For the purpose of our analysis here, we use the values from the middle of September.

We then match this information on consumer debt with information on income and wealth from the tax register and demographic variables from the population register ("folkeregisteret"). The most recent period for which income, wealth and demographic data are

[3]The register is operated by Gjeldsregisteret (https://www.gjeldsregisteret.com/) and Norsk Gjeldsinformasjon (https://www.norskgjeld.no/)

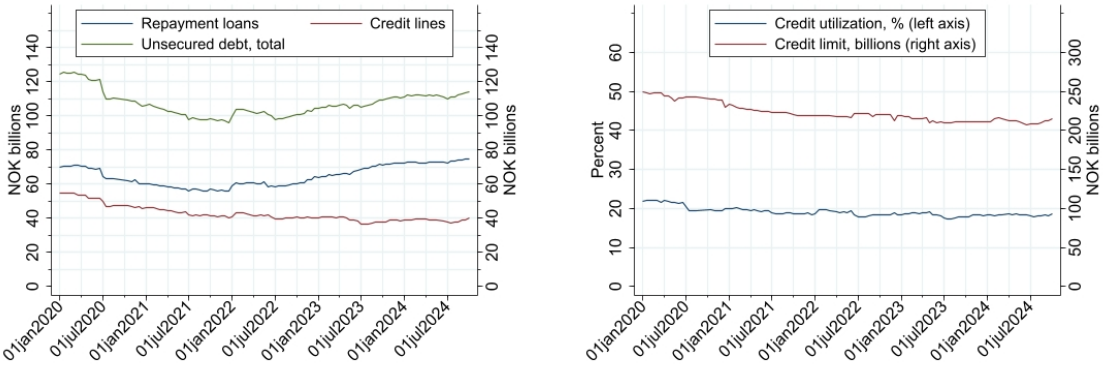
[4]Car loans and boat loans are not included in this category as they are secured with the car or boat as collateral.

available is 2022, so all the analyses in the paper except for that in Section 3.3 uses data on consumer debt matched with two-year lagged data on income, wealth and demographics.[5]

2.1 Some aggregate statistics on types of loans in the debt register

The overarching goal of the debt register was to curb the growth of unsecured debt by providing banks with a comprehensive overview of individuals' liabilities. With the new register, banks were obliged to take total debt burden into account when offering new credit to individuals. After the introduction of the debt register in the summer of 2019, unsecured debt declined. In nominal terms, both the level and growth of all types of unsecured loans fell and have remained lower since 2019 (see Figure 1a). In this respect, the introduction of the register might be viewed as a success Poppe and Skuland (2021); Finanstilsynet (2024); Norges Bank (2024). However, since 2022, consumer debt growth has picked up, particularly for repayment loans. In real terms (i.e., adjusted for CPI inflation), however, debt growth is much more subdued. Figure 1b shows a weak downward trend in the aggregate credit limit to Norwegian households, but a more or less flat development in limit utilization with respect to interest-bearing debt.

Figure 1: Aggregate unsecured debt over time in Norway.



(a) Types of unsecured debt

(b) Credit limit and utilization

These figures plot the nominal NOK values of unsecured debt (billions), credit limit (billions), and the credit limit utilization (percent). Total unsecured debt is defined as the sum of interest-bearing credit line utilization and repayment loans. Charge cards and non-interest bearing debt are excluded. Credit utilization is defined as aggregate interest-bearing portion of the utilized credit limit divided by the aggregate credit limit.

[5]For example, when providing summary statistics on consumer debt from 2024, this is matched with 2022 data on household characteristics and balance sheets.

Table 2.1 provides key numbers on the different loan types in the debt register over time. Credit lines are more common than repayment loans: whereas about 750 000 individuals hold a credit line in 2024, only about 400 000 hold a repayment loan. On the other hand, the average repayment loan is four times larger than the average credit line. Hence, in the aggregate, the total NOK value of repayment loans is roughly double that of credit lines. Charge cards are both more uncommon and loan amounts are smaller. In addition, the charge cards data show a clear break in 2021. Therefore, we exclude these loans from our analyses. In our main analyses, we sum the interest-bearing debt from repayment loans and credit lines and focus on total unsecured, interest-bearing debt as our main variable of interest. Although Table 2.1 shows that these are different types of loans, we argue that one should take both into account when evaluating vulnerabilities and characteristics at the household level.

Table 1: Interest bearing consumer debt across Norwegian households, 2020-2024

	Repayment loans (Nedbetalingslån)			
Year	**Count**	**Mean**	**Total**	**Median**
2020	367,240	240,971	88,500,000,000	104,914
2021	339,283	235,023	79,700,000,000	103,259
2022	347,324	226,840	78,800,000,000	99,545
2023	379,552	219,778	83,400,000,000	89,680
2024	397,122	221,275	87,900,000,000	82,288
	Credit lines (Rammekreditt)			
Year	**Count**	**Mean**	**Total**	**Median**
2020	836,565	60,871	50,900,000,000	18,455
2021	802,698	58,109	46,600,000,000	17,146
2022	774,894	55,303	42,900,000,000	17,552
2023	757,151	52,353	39,600,000,000	17,709
2024	749,044	55,069	41,200,000,000	18,917
	Charge cards (Faktureringskort)			
Year	**Count**	**Mean**	**Total**	**Median**
2020	25,444	24,065	612,000,000	11,296
2021	8,015	4,473	35,900,000	450
2022	7,382	5,712	42,200,000	1,471
2023	6,726	5,327	35,800,000	1,408
2024	6,972	5,554	38,700,000	1,821

The table shows the number of households that hold interest bearing consumer debt and descriptive statistics on the amount of interest bearing consumer debt that they hold for the years 2020-2024. 'Count' shows the number of households that hold interest bearing consumer debt within the different categories (Repayment loans, credit lines, and charge cards) in a given year. 'Mean' and 'Total' show the mean amount of interest bearing consumer debt and the total amount of interest bearing consumer debt held by households within each category across different years. 'Median' shows the amount of interest bearing consumer debt held by the median household (among households that have some interest bearing consumer debt) across different years and consumer debt categories.

3 Results

Our analysis proceeds in three incremental steps. First, we look at descriptive statistics in the cross section of households with and without interest-bearing unsecured consumer debt, as well as households with different levels of consumer debt. Next we look at the main determinants of holding consumer debt (the extensive margin), as well as drivers of the consumer debt balance given some consumer debt holdings (the intensive margin) using regression analyses. Finally, we look at how different life events, such as transition to homeownership, or an unemployment spell impact consumer debt holdings.

3.1 Descriptive statistics in the cross section

We begin with a first look at the cross sectional data on consumer debt holdings across households. Table 2 includes descriptive statistics comparing households with and without consumer debt based on household demographic characteristics as well as income and balance sheet items. Similarly, Table 3 compares households with small and large balances of consumer debt where we set the cutoff at NOK 100,000.

Table 2: Descriptive statistics for households with and without interest-bearing unsecured debt. September 2024

	No unsecured debt			**With unsecured debt (interest bearing)**		
	Mean	**SD**	**Median**	**Mean**	**SD**	**Median**
Age (oldest member)	56	20	56	51	15	50
Household size	1.88	1.14	2.00	2.44	1.37	2.00
Total debt	1,393,120	2,300,906	503,135	2,217,316	4,271,846	1,645,906
Unsecured debt (int. bearing)	0	0	0	149,066	411,959	33,312
Total DTI	1.54	1.85	0.90	2.08	1.80	1.80
DTI ≥ 4	0.09	0.29	0.00	0.12	0.33	0.00
Total income	900,203	1,244,257	676,681	1,034,584	1,098,562	889,058
Total deposits	740,345	2,709,041	311,753	298,871	1,289,978	85,370
Financial wealth	1,990,211	27,900,000	476,415	1,094,958	43,100,000	135,223
Higher education	0.47	0.50	0.00	0.43	0.50	0.00
Homeownership	0.70	0.46	1.00	0.64	0.48	1.00
Housing wealth	3,134,997	3,037,308	2,935,178	2,865,723	2,989,785	2,672,393
Net wealth	4,377,384	28,700,000	2,476,939	2,323,190	40,800,000	855,954
Number of households		**1,719,349**			**860,547**	

The table shows the mean, median and standard deviation for some key variables for all households in Norway split into two groups based on presence of interest bearing consumer debt. Households that have interest bearing consumer debt as of September 2024 are on the panel on the right, and households without any interest bearing consumer debt are in the panel on the left. The values for age and unsecured debt are from September 2024, and the rest of the variables are obtained from tax records for 2022.

The data indicate that one in three Norwegian households hold some form of interest-

bearing consumer debt, with these households generally showing higher levels of overall debt. On average, households with consumer debt tend to have higher incomes than those without such debt. However, they exhibit lower levels of deposits and financial wealth, which points to reduced liquidity. This suggests that despite their higher income, these households may have limited access to readily available funds, as their assets are less liquid compared to households without consumer debt. Additionally, while homeownership rates are somewhat lower among households with interest-bearing consumer debt, the difference is not substantial, indicating that housing ownership remains relatively accessible to both groups.

Households carrying consumer debt also display characteristics associated with specific life stages; they are typically younger and larger, with more children, compared to households without consumer debt. These demographic factors might partly explain some of the observed financial disparities, as younger households generally have higher debt and lower financial reserves. Both groups show a comparable proportion – around 10% – of households with very high debt-to-income ratios, although the ratio is slightly higher among those with interest-bearing consumer debt.

What about households with "a lot" of consumer debt? As Table 3 shows, among Norwegian households, 1 in 10 hold interest-bearing consumer debt exceeding NOK 100,000. Both households with low and high levels of consumer debt are strikingly similar in terms of many characteristics, apart from two key differences. First, households with high levels of unsecured debt have lower levels of deposits, financial wealth, and are significantly less likely to be homeowners. Thus, they have considerably lower housing wealth, implying that households with substantial unsecured debt often lack or have reduced access to home equity. On a related note, for households carrying more than NOK 100,000 in consumer debt, the median level of net wealth is notably low, often approaching minimal positive levels or even dipping into negative net worth. This trend suggests that high levels of unsecured debt may place a significant burden on household finances, potentially leading to a cycle of higher financial vulnerability and lower asset accumulation. The data also indicate that these households differ in educational attainment, with a lower proportion holding higher education degrees, which could potentially influence financial literacy. Furthermore, lower-educated individuals are typically employed in labor-intensive jobs that are

more sensitive to the business cycle. This leaves them more vulnerable to unemployment shocks.

Table 3: Descriptive statistics for households with different levels of interest bearing debt

	Unsecured debt $\leq$ 100k			**Unsecured debt >100k**		
	Mean	**SD**	**Median**	**Mean**	**SD**	**Median**
Age (oldest member)	50	15	50	51	14	51
Household size	2.41	1.35	2.00	2.50	1.40	2.00
Total debt	2,128,934	3,275,425	1,610,414	2,431,117	6,031,274	1,736,037
Unsecured debt (int. bearing)	25,134	25,848	15,596	448,866	672,014	261,121
Total DTI	2.02	1.78	1.76	2.24	1.83	1.88
DTI ≥ 4	0.12	0.32	0.00	0.14	0.34	0.00
Total income	1,024,496	1,160,398	873,469	1,058,988	931,715	923,091
Total deposits	344,952	1,487,566	110,420	187,396	564,686	47,315
Financial wealth	1,161,474	16,600,000	176,548	934,051	75,400,000	69,703
Higher education	0.46	0.50	0.00	0.37	0.48	0.00
Homeownership	0.68	0.47	1.00	0.55	0.50	1.00
Housing wealth	3,075,721	3,007,892	2,915,140	2,357,720	2,882,947	1,850,000
Net wealth	2,715,955	16,800,000	1,243,916	1,373,063	70,800,000	9,704
Number of households		**608,857**			**251,690**	

The table shows the mean, median and standard deviation for some key variables for households that have interest bearing consumer debt as of September 2024. The households with interest bearing consumer debt exceeding NOK 100,000 are on the panel on the right, and households with interest bearing consumer debt less than NOK 100,000 are in the panel on the left. The values for age and unsecured debt are from September 2024, and the rest of the variables are obtained from tax records for 2022.

The comparison between the groups with low and high levels of consumer debt points to homeownership, access to home equity, and the composition of debt as important factors explaining the differences in levels of consumer debt. In this Staff Memo we make a first attempt to understand these relationships.

3.2 Regression results in the cross section

In this section we use regression analysis to examine the main determinants for holding consumer debt (the extensive margin). In addition, we look at drivers of holding relatively large amounts of consumer debt, as well as drivers of the consumer debt balance given some consumer debt holdings (the intensive margin). Table 4 shows results from regressing an indicator of whether the household has consumer debt in year $t + 2$ on household characteristics in year t. In all specifications we control for common time-varying factors via year-fixed effects, and for time invariant factors at the municipality level via municipality-fixed effects. Hence, the results reported in Table 4 stem from differences between households, not from time- or municipality-specific characteristics. In addition in Columns (2)-(6) we control flexibly for age effects via age bin fixed effects. We discuss

age effects separately in the latter part of this section.

Table 4: Factors that drive the presence of interest-bearing unsecured debt among households

	Dependent Variable: I(Has interest bearing consumer debt)				
	(1)	**(2)**	**(3)**	**(4)**	**(5)**
Household size	0.088***	0.073***	0.072***	0.056***	0.061***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Higher education	-0.053***	-0.072***	-0.073***	-0.093***	-0.072***
	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)
ln(Household income)	0.055***	0.046***	0.047***	0.034***	0.041***
	(0.003)	(0.002)	(0.003)	(0.002)	(0.002)
ln(Household gross wealth)	-0.041***	-0.036***	-0.041***	-0.046***	0.018***
	(0.002)	(0.001)	(0.002)	(0.002)	(0.001)
I(Household homeownership)			0.037***	-0.054***	-0.164***
			(0.008)	(0.012)	(0.014)
ln(Total household debt)				0.029***	0.024***
				(0.000)	(0.001)
ln(Financial wealth)					-0.067***
					(0.002)
N	**10,434,390**	**10,434,390**	**10,434,390**	**10,434,390**	**10,434,390**
Adj. R^2	**0.10**	**0.12**	**0.12**	**0.19**	**0.21**
Municipality FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Age bin FE	No	Yes	Yes	Yes	Yes

*The table presents results from linear probability regressions of an indicator variable, which takes the value 1 if at least one member of the household holds interest-bearing unsecured debt, and 0 otherwise. *, **, and *** indicate statistical significance at 5%, 1% and 0.1% respectively.*

The regression results suggest that larger households with higher incomes are more likely to utilize unsecured debt, reflecting their capacity to service such debt without significant strain on liquidity. However, the presence of higher education within households is associated with lower levels of unsecured debt, confirming the patterns from Table 2. The financial component of household wealth plays a more significant role than total wealth in determining the likelihood of holding interest-bearing debt. Households with higher levels of financial wealth, as opposed to other asset forms, tend to hold less consumer debt, highlighting the importance of liquidity and accessible financial assets in mitigating the need for taking on unsecured debt.[6]

While homeownership initially appears to correlate positively with unsecured debt in column (3), this relationship reverses when controlling for total debt, showing a well-

[6]Note that the effect of gross wealth becomes positive when we control for financial wealth. This effect is somewhat puzzling. Inspection of the other outcomes from Table 5 shows that total household gross wealth has no statistically significant effect on the propensity to have large holdings of consumer debt but it strongly impacts the size of credit lines. One interpretation for these results is that it may be easier to have access to credit cards (and have small amount of credit card debt) if one also has more housing wealth.

known relationship that homeowners typically have lower levels of consumer debt in their total debt load. This suggests that homeowners may be able to reduce their reliance on consumer debt, likely as they incorporate such loans into secured, lower-cost mortgages.

Table 5: Factors that drive interest bearing unsecured debt and credit limits among households.

	Unsecured debt (0/1)	**Unsecured debt >100K (0/1)**	**ln(Unsecured debt)**	**ln(Credit limit)**
Household size	0.061***	0.017***	0.149***	0.087***
	(0.001)	(0.000)	(0.003)	(0.004)
Higher education	-0.072***	-0.057***	-0.385***	0.233***
	(0.002)	(0.002)	(0.010)	(0.007)
ln(Household income)	0.041***	0.029***	0.151***	0.328***
	(0.002)	(0.004)	(0.015)	(0.010)
ln(Household gross wealth)	0.018***	-0.001	0.016	0.257***
	(0.001)	(0.001)	(0.014)	(0.007)
I(Household homeownership)	-0.164***	-0.201***	-1.234***	-0.085***
	(0.014)	(0.011)	(0.075)	(0.008)
ln(Total household debt)	0.024***	0.038***	0.263***	0.015***
	(0.001)	(0.000)	(0.007)	(0.003)
ln(Financial wealth)	-0.067***	-0.033***	-0.295***	0.018***
	(0.002)	(0.001)	(0.005)	(0.002)
N	**10,434,390**	**3,481,189**	**3,481,189**	**8,268,849**
Adj. R^2	**0.21**	**0.11**	**0.16**	**0.26**
Municipality FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Age bin FE	Yes	Yes	Yes	Yes

*The table presents a summary of four regressions to illustrate the factors that influence the presence and level of interest bearing consumer debt among households. Column 1 shows results from linear probability regressions of an indicator variable, which takes the value 1 if at least one member of the household holds interest-bearing unsecured debt, and 0 otherwise. Column 2 shows results from linear probability regressions of an indicator variable, which takes the value 1 if all members of a household combined hold over NOK 100,000 in interest bearing consumer debt, and 0 otherwise. Column 3 shows a linear regression of the log of interest bearing consumer debt held by a household, and Column 4 shows a linear regression of the log of the total utilized amount on the credit lines held by all members of the household combined. Column 1 includes all households in Norway in the period 2020-2024. Columns 2 and 3 only include households where at least one individual holds some interest bearing consumer debt during the same period, and column 4 only includes households where at least one member has a line of credit. *, **, and *** indicate statistical significance at 5%, 1% and 0.1% respectively.*

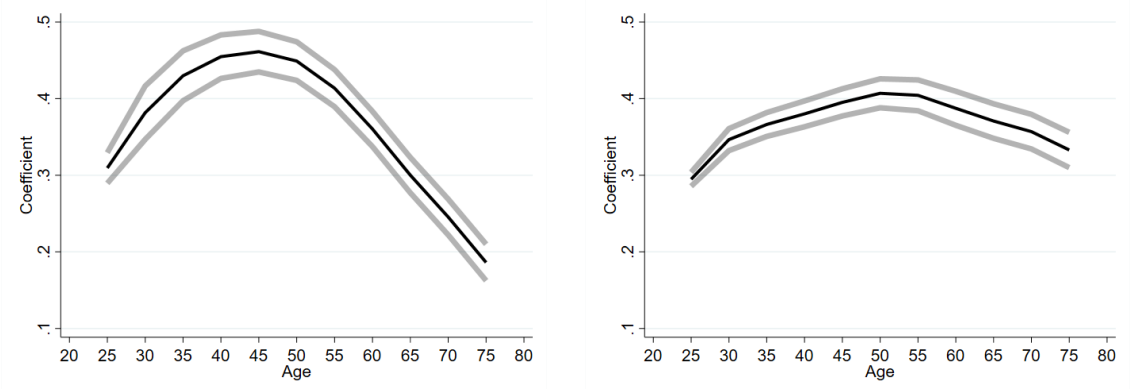
In Table 5 we examine a number of other outcomes. Column (1) reproduces the last column from Table 4, while Column (2) shows the effects with an indicator for having a large amount of consumer debt (over NOK 100,000) as outcome. The overall pattern is similar to the determinants of having any interest-bearing unsecured debt in the regressions in Table 4 with some notable differences. First, while household size matters for having any consumer debt, it is much less significant for determining the presence of large amounts of consumer debt. Second, household gross wealth does not seem to matter for whether the household has a large amount of consumer debt. Third, financial wealth matters to

a smaller extent for having a large amount of consumer debt. This finding confirms the interpretation of having (a low level) consumer debt as the outcome of lower liquid wealth. However, liquid asset holdings seems to be a much weaker determinant for holding a large balance of consumer debt.

In terms of the intensive margin (Column (3)), we see a similar pattern to the extensive margin. Of note is the sizable coefficient on the household homeownership indicator, which shows that conditional on holding some consumer debt, homeowners hold sizably less debt than non-homeowners. Note also that this effect holds after controlling for total household debt, which shows a compositional effect of debt with a strong tilt toward lower cost secured debt for homeowners.[7]

Finally, Column (4) shows the effects on credit limits for credit card debt. Here a number of variables have the opposite sign, for example education and financial wealth, which likely shows supply-side effects of larger credit limit approvals. Homeowners have lower credit limits on unsecured debt suggesting they might use their house as collateral to borrow instead of using consumer debt.

Figure 2: Unconditional and conditional age profile of holding unsecured debt.



(a) Uncond. age profile

(b) Cond. age profile

The charts illustrate the probability of a household of holding interest-bearing consumer debt based on the age of the oldest member in the household. The estimates are obtained from a linear probability regression of an indicator variable that takes the value 1 if at least one member in the household has interest bearing consumer debt and 0 otherwise. The age group 18-24 is taken as the base group in the regressions. The coefficients for all other age groups are scaled up by the share of households where the oldest member is in the 18-24 age group and one member holds interest bearing consumer debt. The gray bands show 95% confidence intervals. Figure (a) does not include any controls and figure (b) includes all controls from Table 4

[7]The effects are also conditional on gross household income, which implies that homeowners have lower levels of consumer debt relative to household income levels, not only a lower NOK value of consumer debt.

Figure 2 plots the propensity to hold consumer debt as a function of age, both without conditioning on controls (panel (a)) and after conditioning on all of the controls from Table 4. Without accounting for other variables, a clear life-cycle pattern emerges: individuals tend to increase their debt gradually until their mid-40s, after which they begin to reduce their debt levels. However, when controls are introduced, especially when focusing on higher levels of debt (see Figure 3 in the Appendix, Section A.1), this trend shifts noticeably. Rather than reducing debt as they age, households appear to continue accumulating consumer debt into their late 50s, suggesting that age itself may capture the cumulative impact of various financial shocks encountered over the life-cycle. Moreover, the propensity of holding debt with age declines only slightly by age 75, indicating a strong persistence of any triggers for consumer debt accumulation. This pattern indicates that, instead of consistently paying down debt, many households experience circumstances or needs that lead them to retain or even increase their consumer debt as they grow older. This accumulation effect, particularly prominent among those with high debt, may reflect the ongoing financial pressures or life events that drive older households to rely on consumer loans, holding other parts of their balance sheet fixed. In the next section we examine several significant life events and their impact on consumer debt accumulation.

3.3 Important life events and consumer debt holding

In this section we take our regression analysis one step further, exploiting the panel dimension of the household data and including household-fixed effects into our analysis. This enables us to look more closely at how different life events impact the likelihood of having consumer debt and the consumer debt balance. We focus on two such events: entry into homeownership and the experience of an unemployment spell. Table 6 collects the estimated effects from these life events on the holdings of consumer debt.[8] The analysis suggests that purchasing a home is associated with a sizable decrease in unsecured consumer debt among households. Our point estimate suggests a 40% decrease in consumer debt. This reduction may be explained by a common practice of consolidating existing consumer debt into the mortgage, effectively shifting high-interest, unsecured loans into a

[8]The dependent variable in Table 6, ln(1+Interest bearing consumer debt), captures both the extensive and the intensive margin responses to the life event. In the Appendix A.2, we report results with the extensive and intensive margin, separately, see Table A.2.

Table 6: Effect of homeownership and unemployment on the level of unsecured debt holdings.

	Dependent Variable: ln(1+Interest bearing consumer debt)	
	(1)	**(2)**
New Homeownership	-0.398***	
	(0.012)	
Unemployment		0.106***
		(0.012)
N	**7,552,102**	**7,552,102**
Adj. R^2	**0.77**	**0.77**
Controls	Yes	Yes
Household FE	Yes	Yes
Municipality FE	Yes	Yes
Year FE	Yes	Yes
Age bin FE	Yes	Yes

*The table shows results from linear regressions of the log of the sum of interest bearing unsecured debt in the household. New homeownership is an indicator variable that takes the value 1 if the household transitions from having no housing wealth to having a positive value for housing wealth and 0 otherwise. Unemployment is an indicator variable that takes the value 1 if at least one person in the household receives unemployment benefits over NOK 100,000 during the year and 0 otherwise. All regressions include household-fixed effects so that the coefficients indicate the effect of a change in these variables for the households, i.e. for instance, column (1) indicates that a household that goes from not owning a home to owning a home in a given year sees approximately 40% decrease in the level of unsecured consumer debt. *, **, and *** indicate statistical significance at 5%, 1% and 0.1% respectively.*

secured, lower-interest debt structure. This consolidation can ease the financial burden on households by reducing monthly payment obligations and improving disposable income. It could alternatively be the result of temporary increases in consumer debt prior to home purchases, for example for purchasing furniture or to meet a down payment requirement. Exploring the dynamics of this debt restructuring, particularly around the period of home purchase, could shed further light on how households manage debt effectively during major asset acquisitions and is an important question for future research on this topic.

Conversely, unemployment appears to prompt households to increase their levels of unsecured debt (on average by 10%), likely due to a need for consumption smoothing during periods of income loss. When faced with a temporary reduction in income, households may rely on consumer loans to maintain their standard of living until employment is regained. The pure age profile we uncovered in Figure 2 strongly suggests that accumulation of consumer debt around an unemployment spell is highly persistent. Further analysis, particularly around repayment patterns and the potential for increased long-term debt levels, could help clarify the role of consumer loans in supporting households through

short-term financial difficulties and the risks associated with such borrowing.

4 Discussion and conclusion

Are households with unsecured debt more vulnerable than other households? Several of our results in this paper suggest that holding a consumer loan is common and part of a natural life-cycle pattern. Many of the differences between households with and without unsecured debt can be explained by a combination of age and family circumstances. For instance, households that have not yet climbed onto the housing ladder do not have access to mortgage credit lines and will, therefore, resort to consumer credit. Furthermore, younger households that do own a house typically have less liquid savings, and the loan-to-value ratio on their house is typically higher than for older households, making it more difficult to refinance their mortgages in order to finance consumption. Finally, younger households in the early establishment stage of their lives typically have higher expenses related to small children, refurnishing, etc. When we control for such effects, we are left with a residual which we have interpreted as the effect of accumulated lifetime shocks.

Some households hold a lot of consumer debt, despite having higher than average income. As we have seen, their total debt-to-income ratio is not necessarily alarmingly high, but their composition of debt is markedly different from the rest. A natural question is, why? Our results do not provide definitive answers, but a combination of adverse shocks, financial literacy, and preferences seem to be plausible explanations. Future research that investigates the dynamics of these households' balance sheets will help us understand the mechanisms driving them into a financially vulnerable position and what might help them out of it.

Our findings, although descriptive, already suggest some important mechanisms that merit further analysis due to their first-order policy implications. First, our finding that consumer debt increases with adverse life events such as a period of unemployment, combined with the increasing pure age profile are consistent with a potential reverse causality interpretation of financial vulnerabilities due to consumer debt build-up. Specifically, rather than higher reliance on consumer debt causing higher financial vulnerability, it may instead be the case that larger susceptibility to adverse labor market shocks, such as

unemployment, leads to both higher reliance on consumer debt and higher financial vulnerability. Such reverse causality interpretation of consumer debt build-ups would point to consumer credit having a beneficial role in facilitating consumption smoothing among these households. It would also call for policy measures that encourage higher liquid savings and/or an enhanced access to lower cost unsecured credit (up to a limit) even in an environment with a strong social safety net like Norway.

Second, homeownership appears to significantly increase the durability of household balance sheets and their financial stability by reducing reliance on expensive consumer debt. On the other hand, access to less expensive secured debt is a well-known risk factor towards greater indebtedness, with potentially large negative spillovers to economic activity – a core reason for macroprudential regulation of homeowner debt. Furthermore, the negative correlation between consumer debt and entry into homeownership may also indicate reverse causality, since consumer debt may be used by some households, particularly households with strongly binding debt-to-income limits as a source of liquidity to meet the down payment requirements for a new home. By using the panel dimension and higher-frequency data from the debt register and property register, we can better understand these mechanisms in future analyses on this topic.

A common perception is that consumer loans make households more financially vulnerable, partially based on the fact that they are more prone to default but also that they are associated with "over-consumption". This paper has highlighted that consumer debt can provide needed liquidity over the life-cycle or in the face of financial shocks. That is not to say that it does not contribute to long-term financial challenges. Higher levels of debt, combined with limited financial assets, can indicate vulnerability. Addressing these vulnerabilities might involve policies promoting financial literacy and encouraging savings, including via faster entry into homeownership, to reduce reliance on high-interest consumer debt during financial difficulties.

References

Andersen, A. L., Duus, C., and Jensen, T. L. (2016). Household debt and spending during the financial crisis: Evidence from danish micro data. *European Economic Review*, 89:96–115.

Auclert, A., Dobbie, W. S., and Goldsmith-Pinkham, P. (2019). Macroeconomic effects of debt relief: Consumer bankruptcy protections in the great recession. Technical report, National Bureau of Economic Research.

Chatterjee, S., Corbae, D., Dempsey, K., and Ríos-Rull, J.-V. (2023). A quantitative theory of the credit score. *Econometrica*, 91(5):1803–1840.

Chatterjee, S. and Eyigungor, B. (2023). Heterogeneity in the credit card market. Working paper.

Dobbie, W., Goldsmith-Pinkham, P., and Yang, C. S. (2017). Consumer bankruptcy and financial health. *Review of Economics and Statistics*, 99(5):853–869.

Dobbie, W. and Skiba, P. M. (2013). Information asymmetries in consumer credit markets: Evidence from payday lending. *American Economic Journal: Applied Economics*, 5(4):256–282.

Finanstilsynet (2024). Rapport om utviklingen i forbruksgjeld, oktober 2024. Rapport, Finanstilsynet.

Jordà, Ò., Schularick, M., and Taylor, A. M. (2013). When credit bites back. *Journal of money, credit and banking*, 45(s2):3–28.

Lindquist, K.-G., Solheim, H., and Vatne, B. H. (2024). Personer med lav inntekt og uten bolig holder mest av særlig utsatt forbruksgjeld. Bankplassen blogg, Norges Bank.

Melzer, B. T. (2011). The real costs of credit access: Evidence from the payday lending market. *The Quarterly Journal of Economics*, 126(1):517–555.

Norges Bank (2024). Videreføring og endring av utlånsforskriften - norges banks høringssvar. Høringssvar, Norges Bank.

Poppe, C. and Skuland, S. E. (2021). Virker gjeldsregistrene? bankenes erfaringer med og holdninger til gjeldsinformasjonsforetak. Sifo rapport 8/2021, Forbruksforskningsin-

stituttet SIFO.

Solheim, H. and Vatne, B. H. (2019). Nytt gjeldsregister: Mange har litt forbruksgjeld – noen få har mye. Bankplassen blogg, Norges Bank.

Solheim, H. and Vatne, B. H. (2021). Forbruksgjelden falt i 2020 - men misligholdet økte. Bankplassen blogg, Norges Bank.

Solheim, H. and Vatne, B. H. (2022). Over halvparten av forbruksgjelden var risikoutsatt ved inngangen til 2022. Bankplassen blogg, Norges Bank.

Solheim, H. and Vatne, B. H. (2023). Lavtlønte og de uten bolig økte forbruksgjelden i 2022. Bankplassen blogg, Norges Bank.

Solheim, H. and Vatne, B. H. (2024). 85 prosent av de med betalingsanmerkning eier ikke bolig, og mange har forbruksgjeld. Bankplassen blogg, Norges Bank.

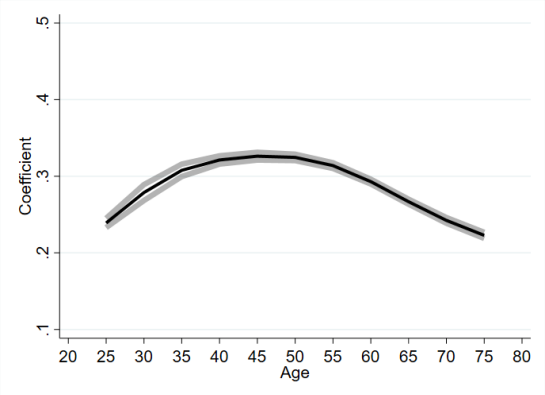
Svensson, L. E. (2021). Household debt overhang did hardly cause a larger spending fall during the financial crisis in australia. Technical report, National Bureau of Economic Research.

A Additional tables

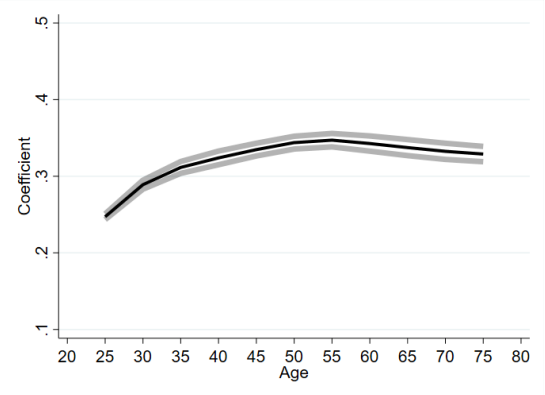
A.1 Additional tables from Section 3.2 - the cross-sectional regressions

These figures are parallel to Figure 2, but with unsecured debt exceeding NOK 100,000 as the dependent variable.

Figure 3: The unconditional and conditional age profile of individuals who have unsecured debt exceeding NOK 100,000.



(a) Uncond. age profile



(b) Cond. age profile

A.2 Additional tables from Section 3.3 on triggers

Table 7: Effect of various life-events on the acquisition and level of unsecured debt in a household

	Dependent Variable			
	I(Has int. bearing consumer debt)		**ln(1+Int. bearing consumer debt)**	
	(1)	**(2)**	**(3)**	**(4)**
New Homeownership	-0.034***		-0.212***	
	(0.001)		(0.016)	
Unemployment		0.008***		0.031***
		(0.001)		(0.007)
N	**7,552,103**	**7,552,103**	**2,309,825**	**2,309,825**
Adj. R^2	**0.69**	**0.69**	**0.78**	**0.78**
Controls	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Age bin FE	Yes	Yes	Yes	Yes

*Columns (1) and (2) show results from regressions of an indicator variable which takes the value 1 if at least one member in the household has interest bearing unsecured debt, and 0 otherwise. Columns (3) and (4) show results from regressions of the log of the sum of interest bearing unsecured debt in the household. The sample is restricted to households that already held interest bearing consumer debt. New Homeownership is an indicator variable that takes the value 1 if the household reports positive housing wealth for the first time in the sample period. Unemployment is an indicator variable that takes the value 1 if at least one person in the household receives unemployment benefits over NOK 100,000 during the year and 0 otherwise. All regressions include household-fixed effects so that the coefficients indicate the effect of a change in these variables for the households. *, **, and *** indicate statistical significance at 5%, 1% and 0.1% respectively.*