

Nghiem, Giang; Massenot, Baptiste

Conference Paper

Unemployment Experience and Savings

Beiträge zur Jahrestagung des Vereins für Socialpolitik 2023: Growth and the "sociale Frage"

Provided in Cooperation with:

Verein für Socialpolitik / German Economic Association

Suggested Citation: Nghiem, Giang; Massenot, Baptiste (2023) : Unemployment Experience and Savings, Beiträge zur Jahrestagung des Vereins für Socialpolitik 2023: Growth and the "sociale Frage", ZBW - Leibniz Information Centre for Economics, Kiel, Hamburg

This Version is available at:

<https://hdl.handle.net/10419/277693>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

Unemployment Experience and Savings ^{*}

Baptiste Massenot[†] Giang Nghiem[‡]

March 1, 2023

Abstract

A survey of Dutch households shows that individuals who have experienced higher national unemployment rates over their lifetime save more. Consistent with an effect of experience on beliefs, these individuals are also more concerned about their future income, job prospects, and retirement. These results are consistent with experience-based learning and are not explained by personal employment history, aggregate time fixed effects, individual fixed effects, wealth, or income.

Keywords: Experienced-based learning; Unemployment experience; Savings; Expectations; Survey data.

JEL classification: D14; D80; E21

^{*}A previous version of this paper was entitled “Depressed Demand”. We would like to thank Jérémy Boccanfuso, Lena Dräger, Chiara Lacava, Alex Ludwig, Nate Vellekoop, Olga Goldfayn-Frank, Linh Nguyen, and Johannes Wohlfahrt for helpful comments. We gratefully acknowledge research support from the Research Center SAFE, funded by the State of Hessen initiative for research LOEWE.

[†]Toulouse Business School, b.massenot@tbs-education.fr

[‡]Leibniz University Hannover, nghiem@gif.uni-hannover.de

1 Introduction

A common narrative is that individuals who lived through tough economic times try to spend more carefully and find it important to save more. The reasons could be purely economic as these individuals, or their families may have become unemployed or face increased unemployment risk. However, the reasons could also be more psychological, akin to animal spirits. This paper attempts to uncover such psychological effects by using the recently developed empirical methodology commonly labeled *experience-based learning* (Malmendier and Nagel, 2011) by studying whether individuals who experienced more difficult economic conditions save more.

We measure tough economic times by computing the weighted average of *national* unemployment rates experienced over an individual's lifetime, where more recent experiences receive a larger weight. Importantly, we focus on national unemployment rates because these are exogenous to individuals. They cannot be determined by the personal unemployment history, the preferences, or the beliefs of a particular individual. As a result, our results cannot be driven by specific individual characteristics leading individuals to certain experiences.

Using a survey of Dutch households conducted yearly since 1993, we find that individuals who have experienced higher national unemployment rates over their lifetime save more. These effects are economically significant. A one-standard-deviation increase in unemployment experience increases net financial wealth by about 2,500 EUR and total net wealth by about 10,500 EUR. These first results support the idea that tough economic times induce individuals to save more.

A possible explanation for this result, which has nothing to do with experienced-based learning, is that individuals who lived through higher national unemployment rates are more likely to have been personally unemployed, which could hurt their employment prospects. Several reasons make this interpretation of our results unconvincing. First, since the national unemployment rate has generally remained low in the Netherlands (5% on average), it is a noisy measure of personal unemployment experience, which would

make it difficult to uncover an effect of national unemployment experience on savings if this effect was entirely driven by personal unemployment experience. Second, all the results we document control for personal employment history, income, and wealth, making it unlikely that the effect of national unemployment experience on savings is driven by the personal employment history of the individual. Third, we also study the effect of national unemployment experience on future household income and credit constraints up to 5 years into the future and are unable to find any significant effect, further suggesting that poorer employment prospects do not drive the effect of national unemployment experience on savings.

We rule out additional explanations by controlling for individual and year fixed effects, age, age square, and various demographics. The individual fixed effects ensure that unobserved fixed individual characteristics do not explain our results. The year fixed effects control for aggregate shocks that affect all households simultaneously. Controlling for age and age square ensures that typical changes over the life cycle do not explain our results. By jointly controlling for time fixed effects and age, we also indirectly control for cohort-specific effects.

To better understand the effect of unemployment experience on savings, we then explore whether specific changes in beliefs or preferences drive the saving response. We study the relationship between unemployment experience and various measures of beliefs and preferences available in our dataset. We find that individuals with higher unemployment experience are significantly more pessimistic about their future economic situation and more worried about losing their job, which could explain why they save more. Finally, we do not find an effect of unemployment experience on risk or time preferences, suggesting that changes in preferences do not explain the effect of unemployment experience on savings.

We also explore the possible motivations behind the saving response. To this end, we document the effect of unemployment experience on the importance of several saving motives. We find that the importance of saving for retirement responds most strongly to unemployment experience, suggesting that greater concerns about low income during

retirement explain an important part of the effect of experience on savings. Saving to buy a house and start a business is also positively associated with unemployment experience. These motives may also explain the change in saving behavior associated with higher unemployment experience. Finally, we find that saving to cover unexpected expenses, leave a bequest, or generate financial returns, are not significantly associated with unemployment experience. Overall, these results further suggest that the saving response to higher unemployment experience is driven by concerns about the future economic situation of the household.

These results are consistent with experienced-based learning, which has already been documented in different domains, ranging from financial markets (Kaustia and Knüpfer, 2008; Greenwood and Nagel, 2009; Malmendier et al., 2011; Malmendier and Nagel, 2011; Georgarakos et al., 2014; Knüpfer et al., 2017; Andersen et al., 2019), to housing markets (Kuchler and Zafar, 2019; Malmendier and Steiny, 2019), political preferences and beliefs (Alesina and Fuchs-Schündeln, 2007; Giuliano and Spilimbergo, 2013; Fuchs-Schündeln and Schündeln, 2015; Roth and Wohlfart, 2018; Laudenbach et al., 2019), and inflation expectations (Malmendier and Nagel, 2015).

Our work is most closely related to Choi et al. (2009), Kuchler and Zafar (2019), and Malmendier and Shen (2021). Choi et al. (2009) find that individuals who have experienced higher returns on their 401(k) retirement plan subsequently increase their contribution to the plan. Kuchler and Zafar (2019) find that individuals who personally experience unemployment become more pessimistic about future nationwide unemployment. Our findings complement theirs since we find that nationwide unemployment experience affects expectations about personal unemployment, even after controlling for personal unemployment experience. Malmendier and Shen (2021) find that higher unemployment experience decreases consumer spending in the US. Their main result is broadly consistent with ours. However, we focus on savings instead of consumption and study the Netherlands, a country with more generous unemployment insurance and where unemployment experience may be less scarring. We shed additional light on the mechanisms underlying the effect of unemployment experience on savings thanks to a rich

set of measures of expectations, preferences, and saving motives in the same data set. In particular, our results suggest that changes in preferences are unlikely to drive our main results. Instead, we show that the effect of unemployment experience mostly works through concerns about saving for retirement, buying a house, or starting a business, and more generally, concerns about lower future income.

More generally, our work contributes to the literature studying the economic effects of adverse labor markets. Campos and Reggio (2015) show that the unemployment rate in Spain during the great recession is related to a substantial decline in household consumption. Barcelo and Villanueva (2016) find that employees who face higher unemployment risk accumulate more wealth. Yagan (2019) report that higher unemployment rates during the recession persistently decreased employment rates, especially among older lower-earning workers who were laid off. Couch and Placzek (2010) show that workers affected by mass layoffs suffer significant and persistent earning losses. Furthermore, there is an extensive literature studying the adverse consequences of entering the labor market during a recession (Raaum and Røed, 2006; Kahn, 2010; Genda et al., 2010; Oreopoulos et al., 2012; Hershbein, 2012; Brunner and Kuhn, 2014; Altonji et al., 2016). While this literature emphasizes the changes in economic fundamentals associated with adverse labor markets, our work uncovers an additional channel working through experience-based learning. Besides changes in fundamentals, consumers who experienced adverse labor markets become more pessimistic and save more.

The paper is organized as follows. Section 2 presents the data, Section 3 shows the results, and Section 4 concludes.

2 Data

DNB Survey We use various preferences, expectations, and economic behavior measures from the DNB Household Survey. The survey has been conducted annually since 1993 and administered by CentERdata, a survey research institute at Tilburg University specializing in Internet surveys. The survey represents the Dutch population and pro-

vides information on about 2,000 households. The purpose of the survey is to study the economic and psychological determinants of the saving behavior of households. Therefore, the survey also contains detailed information on household characteristics such as employment status, number of years worked, age, income, wealth, liabilities, family situation, gender, retirement status, education, region, etc. Households participate for as long as they want. To deal with panel attrition, the panel replaces the households that left the panel with new ones with the same characteristics in terms of region, age, household composition, degree of urbanization, and monthly household income (Teppa et al., 2012). We exclude respondents who are younger than 25 or older than 75. In a few cases, members of the same household participated in the survey, and we only kept self-reported household heads. In the analysis below, we use the sample from 1993 until 2018. We observe each respondent four times on average, allowing us to control for individual fixed effects. Table 1 summarizes these demographics.

Table 1: Summary statistics - Demographics

Variable	Mean	Std. Dev.	Min.	Max.	N
Household income (EUR, price 2018)	39,093	28,571	-3,902	1,751,826	22,642
Wealth (EUR, price 2018)	143,986	157,359	-45799	924726	22,642
Employed	0.658	0.474	0	1	22,642
Number of years worked	23.584	13.338	0	50	22,642
Age	50.559	13.194	25	75	22,642
Female	0.213	0.409	0	1	22,642
College education	0.481	0.5	0	1	22,642
Couple	0.706	0.456	0	1	22,642
Number of children in the house	0.688	1.068	0	7	22,642
Number of household members	2.415	1.291	1	9	22,642
High income panel	0.093	0.29	0	1	22,642
Degree of urbanization	2.935	1.317	1	5	22,642
Very high urbanization	0.163	0.37	0	1	22,642
High urbanization	0.256	0.436	0	1	22,642
Moderate urbanization	0.222	0.415	0	1	22,642
Low urbanization	0.202	0.402	0	1	22,642
Very low urbanization	0.157	0.364	0	1	22,642

Macroeconomic Experience To measure unemployment experience, we follow Malmendier and Nagel (2011) and construct a measure of experienced unemployment during

the lifetime of each individual based on the following formula:

$$E_{it}(\lambda) = \sum_{k=0}^{age_{it}-1} w_{it}(k, \lambda) U_{t-k}$$

where:

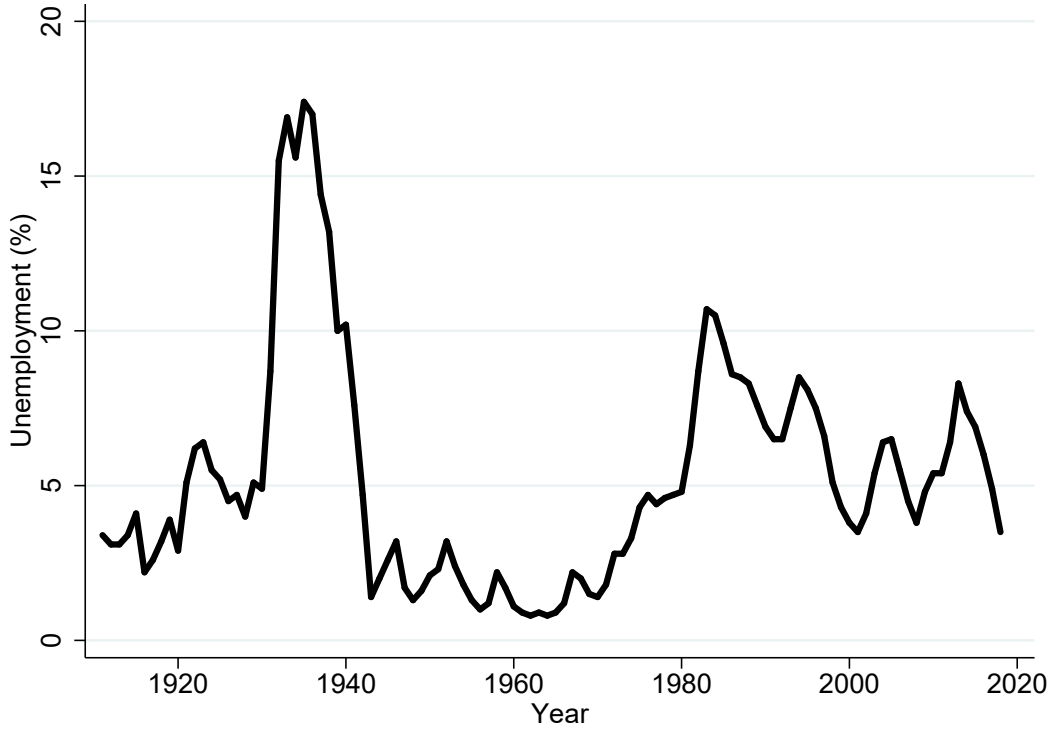
$$w_{it}(k, \lambda) = \frac{(age_{it} - k)^\lambda}{\sum_{k=0}^{age_{it}-1} (age_{it} - k)^\lambda}$$

The experienced aggregate unemployment (E_{it}) of individual i in year t is given by the weighted average of the aggregate unemployment rate in each year k since birth. The weights w_{it} depend on λ . If $\lambda = 0$, each year receives the same weight and the unemployment experience is a normal average of all the unemployment rates experienced by the individual over his lifetime. If $\lambda > 0$, more weight is attached to more recent experiences. If $\lambda < 0$, more weight is attached to experiences earlier in life. Following Malmendier and Shen (2021) and other papers, we use $\lambda = 1$ for our baseline analysis, which has become the standard in this literature. In the Appendix, we experiment with different values of λ and show that $\lambda = 1$ maximizes the R-squared of our main specification. The weighting function could potentially be nonmonotonic. For example, the individuals could put more weight on experiences when entering the job market and more recent experiences. Here, we follow the literature and focus on monotonic weighting functions.

To construct the measure of experienced unemployment, we use the unemployment rate in the Netherlands over the period 1910-2018, which is constructed by Statistics Netherlands and shown in Figure 1.

The measure of unemployment experience ranges from 4.7 % to 7.5%, with a mean of 5.7%. Figure 2 shows the evolution of this measure for three age groups. In 2005, a 25-year-old has experienced 6.3% aggregate unemployment, whereas a 65-year-old in the same year has experienced 5.1%. Ten years later, in 2015, however, the experience of these two groups is much closer. A 25-year-old has experienced 5.8% unemployment, whereas a 65-year-old in 2015 has experienced 5.6%. The 45-year-old has experienced lower unemployment than the 25-year-old until 2008, but higher experienced unemploy-

Figure 1: Unemployment rate from 1910 to 2018



ment afterward.

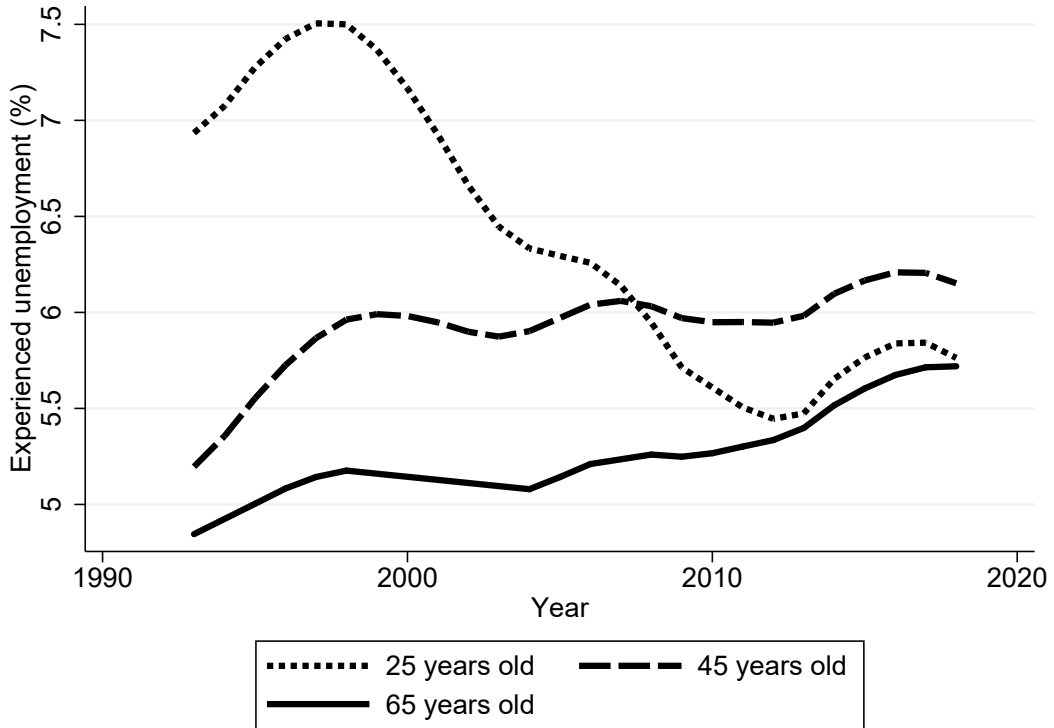
3 Results

We estimate the effect of unemployment experience on savings in section 3.1, on preferences and beliefs in section 3.2, on different saving motives in section 3.3, and on future income and credit constraints in section 3.4. We estimate the following equation:

$$Y_{it} = \alpha + \beta E_{it} + \gamma X_{it} + \eta_t + \nu_i + \epsilon_{it}, \quad (1)$$

where Y_{it} is the outcome of interest, E_{it} is unemployment experience, X_{it} a vector of control variables (income, past net wealth, employment status, number of years worked more than 32 hours per week, age, age square, gender, education, marital status, number of children in the house, family size, whether they are part of the high-income panel, level of urbanization, and province dummies), ν_i are the individual fixed effects, and η_t are year dummies. We estimate this relationship using OLS and cluster the standard errors

Figure 2: Evolution of experienced unemployment for different age groups



at the individual level.

Controlling for past wealth is important to explain savings. First, the empirical evidence suggests a strong association between wealth and savings (Fagereng et al., 2021). There are many possible mechanisms behind this relationship: wealthier households may invest in riskier assets with a different expected return; they may rely more on self-insurance and less on other types of negative-expected-value insurance (for example, specific health services or electronic devices); they may buy higher-quality goods that need to be replaced less often and prove to be less expensive in the long run; they may frequent different social circles with different consumption habits. Overall, our specification assumes that past wealth, measured at the end of period $t - 1$, affects savings in period t .

Controlling for income and variables related to past and current employment is essential to rule out several explanations related to how unemployment experience affects future employment prospects. Controlling for age is crucial to explain saving and borrowing over the lifecycle. We also indirectly control for cohort effects by controlling for both

age and time fixed effects. Indeed, additionally, controlling the year-of-birth fixed effects does not change our results. This indirect control is important because some generations may, for example, attribute greater importance to retirement savings.

3.1 Savings and Credit

This section studies the effect of unemployment experience on savings, which we measure as the change in net wealth. The data include a detailed description of the assets and liabilities of respondents. Assets include housing, vehicles, stocks and bonds, life insurance, savings accounts, and cash holdings. Liabilities include the value of mortgages, private loans, consumer loans, family loans, and study loans. These assets and liabilities are measured in EUR and adjusted for inflation using the 2018 price level. Respondents report the exact amount in EUR for each of these measures. This could produce measurement errors, which should work against finding an effect. To alleviate this measurement error, we exclude observations that belong to the 2.5% lowest and highest levels of net wealth. In the Appendix, we experiment with different cutoff rules.

We construct three measures of savings:

Δ Wealth First, we take the overall change in net wealth, which considers all assets and liabilities.

Δ Financial Wealth Second, we construct a measure of the change in financial net wealth, which excludes house value and vehicle value from the assets, and mortgages and study loans from the liabilities.

Δ Non-Financial Wealth Non-financial net wealth is the complementary measure that uses house value, vehicle value, mortgages, and study loans.

Table 2 shows the summary statistics for these three measures of savings as well as their components.

We first estimate Equation 1 to study the effect of unemployment experience on the three measures of savings. Table 3 shows the results. Unemployment experience has a

Table 2: Summary statistics - Savings (EUR, price 2018)

Variable	Mean	Std. Dev.	Min.	Max.
Δ Wealth	8,177	85,726	-721,560	745,877
Δ Financial Wealth	593	41,800	-669,953	529,391
Δ Non-Financial Wealth	7,585	77,100	-718,446	746,630
Δ House	13,943	92,839	-717,694	1,260,618
Δ Vehicle	39	9,529	-238,604	214,649
Δ Stock	178	21,599	-657,514	469,821
Δ Life Insurance	-170	19,093	-431,515	361,274
Δ Deposit	410	24,228	-512,419	529,482
Δ Cash	12	8,060	-463,006	465,652
Δ Mortgage	5,999	58,935	-579,555	885,934
Δ Private loan	-11	4,154	-120,966	257,913
Δ Consumer loan	-85	6,599	-254,147	239,323
Δ Family loan	-84	4,897	-325,821	142,347
Δ Study loan	-37	1,044	-41,697	24,820
N	16,465			

significantly positive effect on the three measures. The effects are sizable. A 0.1 percent point increase (the within-individual standard deviation) in unemployment experience increases their total net wealth by 10,500 EUR. The second column suggests that most of this effect is driven by changes in their non-financial wealth, which increases by 8,000 EUR. The rest of the total effect consists of changes in their financial net wealth, which increases by 2,500 EUR.

Table 3: Effects of Experience on Savings

	(1) Δ Wealth	(2) Δ Non-Fin. Wealth	(3) Δ Fin. Wealth
Unempl. Experience	105205.4*** (24047.5)	79899.3*** (20528.7)	25306.0*** (9463.5)
R ²	0.396	0.321	0.081
N individuals	4654	4654	4654
N observations	16465	16465	16465

Note: Control variables are time fixed effects, individual fixed effects, income, past net wealth, employment status, number of years worked more than 32 hours per week, age, age square, gender, education, marital status, number of children in the house, family size, whether they are part of the high-income panel, level of urbanization, and province dummies. Sample period: 1993-2018. Standard errors are clustered at the individual level. Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

To understand which components of wealth drive these results, Table 4 runs the same

regression for each asset category. The biggest change, again considering a 0.1 percentage point change in unemployment experience, is the change in deposits (which include all savings accounts), which is 2,000 EUR and is highly significant, followed by the increase in vehicle value of 390 EUR. The effect on housing value is also large (2,100 EUR) but insignificant, which may partly reflect that respondents may be uncertain about the value of their house. Part of the increase in total savings is channeled to life insurance, with a rise of 25 EUR, and stocks, with a rise of 370 EUR, although none of these effects are statistically significant.

Table 4: Effects of Experience on Assets

	(1) Δ House	(2) Δ Vehicle	(3) Δ Stock	(4) Δ Insurance	(5) Δ Deposit	(6) Δ Cash
Unempl. Experience	20975.3 (24007.5)	3882.6* (2165.2)	3701.0 (4098.7)	242.8 (4120.3)	20541.0*** (5900.5)	-1129.4 (1272.0)
R ²	0.259	0.019	0.033	0.037	0.035	0.005
N individuals	4654	4654	4654	4654	4654	4654
N observations	16465	16465	16465	16465	16465	16465

Note: Control variables are time fixed effects, individual fixed effects, income, past net wealth, employment status, number of years worked more than 32 hours per week, age, age square, gender, education, marital status, number of children in the house, family size, whether they are part of the high-income panel, level of urbanization, and province dummies. Sample period: 1993-2018. Standard errors are clustered at the individual level. Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 5 runs the same regression for each liability category. Individuals with 0.1 percentage point more unemployment experience reduce mortgage debt faster, by 3,800 EUR more per year. The same is true for their student loan, which they reduce by 100 EUR more per year. Unemployment experience does not significantly affect the other types of debt.

To summarize, our results show that individuals who have experienced higher unemployment save more. This effect is mainly driven by an increase in the balance of their deposit accounts and by the accelerated repayment of mortgages. Below we study the robustness of these results. Our preferred interpretation is experience-based learning. Individuals who lived through tougher economic times are personally affected and respond by spending more and saving more. The channels through which these effects work are still unclear and are further examined in sections 3.2 and 3.3. Finally, section

Table 5: Effects of Experience on Liabilities

	(1)	(2)	(3)	(4)	(5)
	Δ Mortgage	Δ Private	Δ Consumer	Δ Family	Δ Study
Unempl. Experience	-38299.3** (15395.6)	-79.33 (690.6)	-74.80 (1306.2)	878.8 (1469.4)	-1176.5** (513.9)
R ²	0.068	0.003	0.010	0.002	0.013
N individuals	4654	4654	4654	4654	4654
N observations	16465	16465	16465	16465	16465

Note: Control variables are time fixed effects, individual fixed effects, income, past net wealth, employment status, number of years worked more than 32 hours per week, age, age square, gender, education, marital status, number of children in the house, family size, whether they are part of the high-income panel, level of urbanization, and province dummies. Sample period: 1993-2018. Standard errors are clustered at the individual level. Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

3.4 discusses several alternative interpretations of our results.

These results are related to Malmendier and Shen (2021). This paper finds that US consumers who have experienced higher unemployment over their lifetime spend less. It uses the same measure of unemployment experience and, except for a few controls, the same empirical specification as we do. The main difference is that our primary outcome of interest is savings while they focus on consumer spending. Of course, if consumers spend less for a given income, they should also save more. So our results are consistent with theirs. There are a few noteworthy differences between our studies. First, we focus on a different country associated with more generous unemployment insurance, showing that the effects of unemployment experience are not specific to a given labor market institution or culture. Furthermore, our dataset includes several measures of expectations, preferences, and saving motives, allowing us to shed additional light on the underlying channels, as shown below.

Robustness The Appendix examines the robustness of these results to several alternative specifications. First, we investigate whether experiences concerning other macroeconomic variables also affect savings. The previous literature has examined inflation, GDP, growing-up in a recession, inequality, house prices, institutions, etc. More specifically, we expected that inflation experience and GDP growth experience may also play an important role in savings. The measures of experience are constructed using the same

formula as for unemployment, but replacing unemployment rates by inflation rates or GDP growth rates. Tables A1-3 show the results. These alternative measures of experience are not as robustly associated with savings as unemployment experience, probably reflecting the fact that unemployment is perceived as a more important source of income risk. The only significant effect is that individuals who have experienced higher inflation rates increase their financial wealth more. We do not study the effects of growing up in a recession because it features almost no individual variation. Focusing on periods with unemployment rates higher than 10% would give us zero within-individual variation since these periods occurred before our sample started (in 1932-1940 and 1983-1984). We also do not look at stock market experience because few people participate in the Netherlands (about 10% versus more than 50% in the US), and it is not clear what the reference portfolio should be (unlike in the US with the S&P500).

The effect of unemployment experience on savings is also robust to different truncation rules of the data. To alleviate measurement errors, we excluded the top and bottom 2,5% of wealth in our main specification. Tables A4-A5 show the results for 5% and 10% truncations. The coefficients remain highly significant but become smaller, reflecting the exclusion of wealthier individuals.

We also have access to a measure of unemployment rates for each of the 12 provinces of the Netherlands, but only starting from 1981. To build a measure of local unemployment experience, we select a subsample of respondents who lived in the same province in the past five years (71% of the full sample). To measure local unemployment experience, we use the same formula but combine these local unemployment rates for the past five years and the national unemployment rates before that. This composite measure may better reflect the actual unemployment experienced by households. However, the national rates may be more relevant if they are more often reported in the news or if the different provinces are well integrated. Table A6 shows the results. We find that the effect of this local measure on savings is also positive and significant. However, the coefficient size is divided by two, suggesting that local unemployment is less critical for households than the national measure.

We also estimate our main specification using different values of the parameter λ , ranging from -3 to 5 with intervals of 0.5. Figure A1 shows the resulting R^2 . We find that the differences in R^2 values obtained from different choices of λ are marginal, which is also similar to the estimations of Kuchler and Zafar (2019). We also find that the R^2 is maximized for $\lambda = 1$, consistent with the earlier literature. To check the sensitivity of our results, tables A7-A8 show the detailed results of our main specification with $\lambda = 0.5$ and $\lambda = 1.5$. The coefficients remain significant but slightly smaller.

Until 2018, the retirement age in the Netherlands was 65. Excluding respondents aged from 65 to 75, Table A9 shows that the baseline results generally remain unchanged if we focus on respondents aged from 25 to 65.

Although we indirectly control for cohort fixed effects by jointly controlling for year fixed effects and age, the time fixed effects may be cohort-specific. To this end, Table A10 shows the results if we interact time fixed effects with several cohort fixed effects (individuals born in periods 1917-1929, 1930-1944, 1945-1959, 1960-1974, and 1975-1993). Unemployment experience still strongly affects savings. The effect of nonfinancial wealth is similar but only significant at the 10% level. The effects on financial wealth and total wealth are stronger and remain highly significant.

Since participants can decide to drop out of the survey, we may observe a selected sample, which may drive some of our results. Unfortunately, we do not observe the characteristics of the respondents who left the panel, making it difficult to measure these selection effects. However, Table A11 shows that the baseline results remain unchanged if we exclude the last time respondents participated in the survey. Furthermore, controlling for the number of times respondents participated in the survey does not change the results either, as shown by A12. Finally, recall from the section describing the data that the households who left the panel are replaced with new ones with the same region, age, household composition, degree of urbanization, and monthly household income, alleviating selection concerns.

Note that all of our regressions control for individual fixed effects, implying that we fully account for any unspecified time-invariant characteristics. However, there are still

possible endogeneous issues due to potential unobservables that are correlated over time, particularly with the past wealth control. Table A13 shows that our main coefficient of interest β becomes insignificant when we do not control for wealth, implying that controlling for past wealth is crucial for our results. We implement two instrumental variable approaches to deal with potential endogeneity issues. First, we use the second lag of wealth as an instrument for the first lag of wealth. In this model, we assume that the second lag of wealth only affects the current savings indirectly through the first lag of wealth. Table A14 shows the results. Both the underidentification test and weak identification test strongly reject the null hypothesis that the instrument variable is weak. These results suggest that the second lag of wealth is sufficiently correlated with the first lag of wealth, satisfying the conditions of using lagging variables as instruments (Reed, 2015). The effect of unemployment experience on the change in total wealth decreases but remains statistically significant. The effect on the change in non-financial wealth also decreases and becomes insignificant. Finally, the effect on the change in financial wealth increases and remains significant. Note that the number of observations in this specification is reduced by about 20% compared with the baseline models, possibly contributing to the changes in results.

Second, we use a heteroscedasticity-based instrument approach by Lewbel (2012) to construct instruments for the first lag of wealth. Table A15 shows the results. The diagnostic tests suggest that the constructed instruments are sufficiently relevant with the first lag of wealth. We find stronger effects of unemployment experience on the changes in total wealth and non-financial wealth, but insignificant effects on the change in financial wealth. However, the effect of unemployment experience on total savings, our main effect of interest, remains positive and significant across approaches. As suggested by Lewbel and Baum (2019), this approach should be applied only if the external instruments are unavailable due to the difficulty of confirming the validity of constructed instruments. The results of this model are therefore only indicative.

3.2 Expectations and Preferences

We now consider several explanations for the higher savings of individuals who have experienced higher unemployment. Do they save more because they believe their income will be lower? Because they are more worried that someone in their household will lose his job or not find one? Or do they save more because their time and risk preferences have changed?

To answer these questions, we use the following measures available from the survey, which are summarized in Table 6.

Expected Income in the Next 5 Years *Do you think the total net income of your household will increase, remain the same, or decrease, in the next five years? 1 Decrease, 2 Remain the same, 3 Increase.* This question was used from 1993 until 2002 but was slightly modified from 2004 to 2018:

How do you think the economic situation of your household will be in five years' time in comparison to the current situation? 1 Much Worse, 2 Worse, 3 The same, 4 Better 5 Much Better. To harmonize the categories, we recode the answers from 2004 to 2018. “Much worse” and “Worse” are combined and coded as 1. “The same” is coded as 2. “Better” and “Much better” are combined and coded as 3.

Expected Stop Working *Do you expect the total net yearly income of your household to change in the next 12 months because a member of your household who currently has a job, will stop working? 1 Yes, 0 No.*

Expected Start Working *Do you expect the total net yearly income of your household to change in the next 12 months because a member of your household who is currently out of work, will start working? 1 Yes, 0 No.*

Forward-Looking *I often work on things that will only pay off in a couple of years. 1 Extremely uncharacteristic, 7 Extremely characteristic.*

Risk Aversion. *I think it is more important to have safe investments and guaranteed returns, than to take a risk to have a chance to get the highest possible returns. 1 Totally disagree, 7 Totally agree.*

Table 6: Summary Statistics - Expectations and Preferences

Variable	Mean	Std. Dev.	Min.	Max.	N
Expected Income	2.089	0.698	1	3	19080
Expected Stop Working	0.047	0.211	0	1	20927
Expected Start Working	0.028	0.164	0	1	20927
Forward-Looking	3.64	1.569	1	7	15929
Risk Aversion	5.034	1.733	1	7	18767

We then estimate Equation 1 to study the effect of unemployment experience on these variables. Table 7 shows the results. Respondents with higher unemployment experience are more pessimistic about the economic situation of their household. They are also more worried that the employed members of their household will stop working. Finally, they expect that current out-of-work members are less likely to start working. Finally, unemployment experience does not significantly affect time and risk preferences, which are thus unlikely to explain their saving response. Overall, the most promising mechanism to explain the effect of unemployment experience on savings seems to rely on more pessimistic beliefs about the household's economic situation.

Table 7: Effects of Experience on Expectations and Preferences

	(1) Expected Income	(2) Expected Stop Working	(3) Expected Start Working	(4) Forward- Looking	(5) Risk Aversion
Unempl. Experience	-0.353*** (0.14)	0.0769* (0.04)	-0.0675 (0.05)	0.140 (0.39)	0.121 (0.35)
R ²	0.066	0.013	0.014	0.015	0.009
N individuals	6100	6362	6362	4893	5794
N observations	19080	20927	20927	15929	18767

Note: Control variables are time fixed effects, individual fixed effects, income, past net wealth, employment status, number of years worked more than 32 hours per week, age, age square, gender, education, marital status, number of children in the house, family size, whether they are part of the high-income panel, level of urbanization, and province dummies. Sample period: 1993-2018. Standard errors are clustered at the individual level. Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

3.3 Saving Motives

To shed light on the potential drivers of the saving response, this section studies the relationship between unemployment experience and six saving motives:

How important is it to you to have some money saved to... (1 Very unimportant, 7 Very important)

1. ...to supplement your general old-age pension? (**Pension motive**)
2. ...to have some money saved so you can buy a (different) apartment or house in the future. (**House motive**)
3. ...to have some money saved to set up your own business? (**Business motive**)
4. ...cover unforeseen expenses? (**Precautionary motive**)
5. ...to save so I can leave money to my children (or other relatives)? (**Bequest motive**)
6. ...to have some money saved to generate income from interests or dividends? (**Returns motive**)

Table 8 gives summary statistics for these six variables.

Table 8: Summary Statistics - Saving Motives					
Variable	Mean	Std. Dev.	Min.	Max.	N
Pension	3.846	2.111	1	7	19512
House	2.818	1.912	1	7	18752
Business	2.282	1.706	1	7	18023
Precautionary	5.536	1.35	1	7	20001
Bequest	2.749	1.788	1	7	18975
Returns	3.087	1.746	1	7	19361

We then estimate Equation 1 to study the effect of unemployment experience on these different saving motives. Table 9 shows the results. Individuals who have experienced higher unemployment find it more important to save to supplement their pension, buy a house, or start a business. The effect on pensions is especially noteworthy, with a t-stat

of more than 7. Furthermore, unemployment experience does not significantly affect the importance of saving to cover unexpected expenses, leave a bequest, or enjoy financial returns.

Table 9: Effects of Experience on Saving Motives

	(1) Pension	(2) House	(3) Business	(4) Precautionary	(5) Bequest	(6) Return
Unempl. Experience	3.335*** (0.41)	0.734* (0.39)	1.460*** (0.41)	-0.367 (0.28)	0.242 (0.33)	-0.164 (0.33)
R ²	0.227	0.019	0.083	0.037	0.026	0.017
N individuals	6086	6009	5890	6151	5949	6077
N observations	19512	18752	18023	20001	18975	19361

Note: Control variables are time fixed effects, individual fixed effects, income, past net wealth, employment status, number of years worked more than 32 hours per week, age, age square, gender, education, marital status, number of children in the house, family size, whether they are part of the high-income panel, level of urbanization, and province dummies. Sample period: 1993-2018. Standard errors are clustered at the individual level. Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Overall, the results in this section suggest that living through tougher economic times reinforces the importance of saving for households, especially for retirement, starting a business, or buying a house. This indicates that the effect of experience on savings documented above is likely to be driven by these considerations. Individuals who lived through tougher economic times save more because they seem more worried about their retirement. They find it more important to save to buy a house or start a business, reflecting concerns about paying the rent or losing their job.

3.4 Alternative Explanations

These results are consistent with experience-based learning, which implies that one needs to personally experience an event to learn from it. In the context of our study, this means that households who experience high national unemployment rates become more pessimistic about their future income, which would naturally lead them to save more.

Another possible explanation, however, is that individuals who lived through higher national unemployment rates have been personally more often unemployed, which would hurt their future unemployment prospects. As a result, these individuals would also

become more pessimistic and save more. While we cannot completely rule out this alternative explanation with our data, it is not fully convincing for several reasons. First, a historically low national unemployment rate in the Netherlands is bound to remain a noisy measure of personal unemployment experience, which would make it difficult to uncover an effect of national unemployment experience on savings if this effect was entirely driven by personal unemployment experience. Second, all the results we document control for personal employment history, income, and wealth, making it unlikely that the personal employment history drives the effect of national unemployment experience on savings.

This section further sheds light on this alternative explanation by estimating the effect of national unemployment experience on future household income and future credit constraints. More specifically, we estimate equation 1 using as outcome variables future income and credit constraints at one-year and five-year horizons.

Income We use the net household income measured in 2018 prices to measure future income.

Constrained To measure credit constraint, we use the following question from the survey: *If you would need credit now, would you expect your application to be accepted?* 0 No, 1 Yes.

Table 10 presents the results. Column 1 shows that individuals with higher unemployment experience do not report a lower income next year or in 5 years. They report a higher income, although the coefficients are not significantly different from 0. The standard error increases a lot when looking at income five years from now, reflecting the drop in the number of observations. Since households only participate a limited number of times in the survey, measuring their future income implies that we have to drop those who no longer participate. The further in the future, we measure income, the more households drop out of the sample. These results are thus only indicative. However, they do not support the idea that experiencing higher national unemployment rates decreases future income after controlling for time fixed effects, personal unemployment experience,

wealth, and income. These results suggest that although individuals with higher unemployment experience are more pessimistic about their future income, this pessimism seems unwarranted.

In columns 3 and 4, we further examine whether individuals with higher unemployment experience tend to become more credit constrained. Again, the coefficients are insignificant, suggesting that higher national unemployment experience does not affect future constraints. This channel is unlikely to explain the effect of unemployment experience on expected income and savings.

Table 10: Effects of Experience on Changes in Future Income and Credit Constraints

	(1) Income(t+1)	(2) Income(t+5)	(3) Constrained(t+1)	(4) Constrained(t+5)
Unempl. Experience	0.0627 (0.18)	2.382 (6.88)	-0.0958 (0.08)	0.0120 (0.17)
R ²	0.493	0.010	0.020	0.030
N individuals	4701	915	4944	1569
N observations	14942	3609	16147	6973

Note: Control variables are time fixed effects, individual fixed effects, income, past net wealth, employment status, number of years worked more than 32 hours per week, age, age square, gender, education, marital status, number of children in the house, family size, whether they are part of the high-income panel, level of urbanization, and province dummies. Sample period: 1993-2018. Standard errors are clustered at the individual level. Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Overall, these results suggest that the higher savings of individuals with higher unemployment experience are unlikely to be driven by a lower permanent income or lower future creditworthiness.

4 Conclusion

Using a survey of Dutch households, we find that individuals who experienced higher unemployment over their lifetime save more. We also provide evidence suggesting that more pessimistic beliefs about future income, job loss, and retirement may explain this result. The results are consistent with experience-based learning and the narrative that adverse labor markets can depress consumer sentiment.

References

- Alesina, Alberto and Nicola Fuchs-Schündeln**, “Goodbye Lenin (or not?): The effect of communism on people’s preferences,” *American Economic Review*, 2007, *97* (4), 1507–1528.
- Altonji, Joseph G, Lisa B Kahn, and Jamin D Speer**, “Cashier or consultant? Entry labor market conditions, field of study, and career success,” *Journal of Labor Economics*, 2016, *34* (S1), S361–S401.
- Andersen, Steffen, Tobin Hanspal, and Kasper Meisner Nielsen**, “Once bitten, twice shy: The power of personal experiences in risk taking,” *Journal of Financial Economics*, 2019, *132* (3), 97–117.
- Barcelo, Cristina and Ernesto Villanueva**, “The response of household wealth to the risk of job loss: Evidence from differences in severance payments,” *Labour Economics*, 2016, *39*, 35–54.
- Brunner, Beatrice and Andreas Kuhn**, “The impact of labor market entry conditions on initial job assignment and wages,” *Journal of Population Economics*, 2014, *27* (3), 705–738.
- Campos, Rodolfo G and Iliana Reggio**, “Consumption in the shadow of unemployment,” *European Economic Review*, 2015, *78*, 39–54.
- Choi, James J, David Laibson, Brigitte C Madrian, and Andrew Metrick**, “Reinforcement learning and savings behavior,” *The Journal of finance*, 2009, *64* (6), 2515–2534.
- Couch, Kenneth A and Dana W Placzek**, “Earnings losses of displaced workers revisited,” *American Economic Review*, 2010, *100* (1), 572–89.
- Fagereng, Andreas, Martin Blomhoff Holm, Benjamin Moll, and Gisle Natvik**, “Saving behavior across the wealth distribution: The importance of capital gains,” *Working paper*, 2021.

- Fuchs-Schündeln, Nicola and Matthias Schündeln**, “On the endogeneity of political preferences: Evidence from individual experience with democracy,” *Science*, 2015, *347* (6226), 1145–1148.
- Genda, Yuji, Ayako Kondo, and Souichi Ohta**, “Long-term effects of a recession at labor market entry in Japan and the United States,” *Journal of Human resources*, 2010, *45* (1), 157–196.
- Georgarakos, Dimitris, Michael Haliassos, and Giacomo Pasini**, “Household debt and social interactions,” *The Review of Financial Studies*, 2014, *27* (5), 1404–1433.
- Giuliano, Paola and Antonio Spilimbergo**, “Growing up in a Recession,” *Review of Economic Studies*, 2013, *81* (2), 787–817.
- Greenwood, Robin and Stefan Nagel**, “Inexperienced investors and bubbles,” *Journal of Financial Economics*, 2009, *93* (2), 239–258.
- Hershbein, Brad J**, “Graduating high school in a recession: Work, education, and home production,” *The BE journal of economic analysis & policy*, 2012, *12* (1).
- Kahn, Lisa B**, “The long-term labor market consequences of graduating from college in a bad economy,” *Labour Economics*, 2010, *17* (2), 303–316.
- Kaustia, Markku and Samuli Knüpfer**, “Do investors overweight personal experience? Evidence from IPO subscriptions,” *The Journal of Finance*, 2008, *63* (6), 2679–2702.
- Knüpfer, Samuli, Elias Rantapuska, and Matti Sarvimäki**, “Formative experiences and portfolio choice: Evidence from the Finnish great depression,” *The Journal of Finance*, 2017, *72* (1), 133–166.
- Kuchler, Theresa and Basit Zafar**, “Personal experiences and expectations about aggregate outcomes,” *The Journal of Finance*, 2019, *74* (5), 2491–2542.

- Laudenbach, Christine, Ulrike Malmendier, and Alexandra Niessen-Ruenzi**, “Emotional Tagging and Belief Formation: The Long-Lasting Effects of Experiencing Communism,” in “AEA Papers and Proceedings,” Vol. 109 2019, pp. 567–71.
- Lewbel, Arthur**, “Using Heteroskedasticity to Identify and Estimate Mismeasured and Endogenous Regressor Models,” *Journal of Business and Economic Statistics*, 2012, 30, 67–80.
- **and Christopher Baum**, “Advice on using heteroskedasticity-based identification,” *The Stata Journal*, 2019, 19 (4), 757–767.
- Malmendier, Ulrike and Alexandra Steiny**, “Rent or buy? The role of lifetime experiences of macroeconomic shocks within and across countries,” *Working paper*, 2019.
- **and Leslie S Shen**, “Scarred consumption,” *Working paper*, 2021.
- **and Stefan Nagel**, “Depression babies: do macroeconomic experiences affect risk taking?,” *The Quarterly Journal of Economics*, 2011, 126 (1), 373–416.
- **and —**, “Learning from inflation experiences,” *The Quarterly Journal of Economics*, 2015, 131 (1), 53–87.
- **, Geoffrey Tate, and Jon Yan**, “Overconfidence and early-life experiences: the effect of managerial traits on corporate financial policies,” *The Journal of finance*, 2011, 66 (5), 1687–1733.
- Oreopoulos, Philip, Till Von Wachter, and Andrew Heisz**, “The short-and long-term career effects of graduating in a recession,” *American Economic Journal: Applied Economics*, 2012, 4 (1), 1–29.
- Raaum, Oddbjørn and Knut Røed**, “Do business cycle conditions at the time of labor market entry affect future employment prospects?,” *The review of economics and statistics*, 2006, 88 (2), 193–210.

- Reed, William**, “On the Practice of Lagging Variables to Avoid Simultaneity,” *Oxford Bulletin of Economics and Statistics*, 2015, 77 (6).
- Roth, Christopher and Johannes Wohlfart**, “Experienced inequality and preferences for redistribution,” *Journal of Public Economics*, 2018, 167, 251–262.
- Teppa, Federica, Corrie Vis et al.**, “The CentERpanel and the DNB household survey: Methodological aspects,” Technical Report, Netherlands Central Bank, Research Department 2012.
- Yagan, Danny**, “Employment hysteresis from the great recession,” *Journal of Political Economy*, 2019, 127 (5), 2505–2558.

A Appendix

A.1 The Effect of Macroeconomic Experiences on Savings

Table A1: Effects of Inflation Experience on Savings

	(1) Δ Wealth	(2) Δ Non-Fin. Wealth	(3) Δ Fin. Wealth
Inflation Experience	35525.6 (48485.1)	-4058.2 (41621.0)	39583.8** (17642.6)
R ²	0.395	0.320	0.081
N individuals	4654	4654	4654
N observations	16465	16465	16465

Note: Control variables are time fixed effects, individual fixed effects, income, past net wealth, employment status, number of years worked more than 32 hours per week, age, age square, gender, education, marital status, number of children in the house, family size, whether they are part of the high income panel, level of urbanization, and province dummies. Sample period: 1993-2018. Standard errors are clustered at the individual level. Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A2: Effects of GDP Experience on Savings

	(1) Δ Wealth	(2) Δ Non-Fin. Wealth	(3) Δ Fin. Wealth
GDP Experience	-18858.4 (31713.0)	-14642.6 (29066.7)	-4215.8 (12603.4)
R ²	0.394	0.320	0.081
N individuals	4654	4654	4654
N observations	16465	16465	16465

Note: Control variables are time fixed effects, individual fixed effects, income, past net wealth, employment status, number of years worked more than 32 hours per week, age, age square, gender, education, marital status, number of children in the house, family size, whether they are part of the high income panel, level of urbanization, and province dummies. Sample period: 1993-2018. Standard errors are clustered at the individual level. Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A3: Effects of Macro Experience on Savings

	(1) Δ Wealth	(2) Δ Non-Fin. Wealth	(3) Δ Fin. Wealth
Inflation Experience	83526.4 (57829.4)	15642.7 (49502.0)	67883.7*** (23269.7)
GDP Experience	48653.8 (38022.1)	15632.5 (35281.5)	33021.4* (17583.3)
Unempl. Experience	114543.6*** (25705.1)	82611.2*** (22210.8)	31932.4*** (10583.0)
R ²	0.396	0.321	0.082
N individuals	4654	4654	4654
N observations	16465	16465	16465

Note: Control variables are time fixed effects, individual fixed effects, income, past net wealth, employment status, number of years worked more than 32 hours per week, age, age square, gender, education, marital status, number of children in the house, family size, whether they are part of the high income panel, level of urbanization, and province dummies. Sample period: 1993-2018. Standard errors are clustered at the individual level. Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

A.2 The Effect of Unemployment Experiences on Savings: Using Different Wealth Truncation

Table A4: Effects of Experiences on Savings, Excluded top and bottom 5% of Wealth

	(1) Δ Wealth	(2) Δ Non-Fin. Wealth	(3) Δ Fin. Wealth
Unempl. Experience	86172.6*** (23325.1)	62119.6*** (19975.5)	24053.0*** (9050.7)
R ²	0.401	0.325	0.071
N individuals	4410	4410	4410
N observations	15230	15230	15230

Note: Control variables are time fixed effects, individual fixed effects, income, past net wealth, employment status, number of years worked more than 32 hours per week, age, age square, gender, education, marital status, number of children in the house, family size, whether they are part of the high income panel, level of urbanization, and province dummies. Sample period: 1993-2018. Standard errors are clustered at the individual level. Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A5: Effects of Experience on Savings: Excluded top and bottom 10% of Wealth

	(1) Δ Wealth	(2) Δ Non-Fin. Wealth	(3) Δ Fin. Wealth
Unempl. Experience	67749.6*** (22630.1)	52004.5*** (19329.8)	15745.0* (8798.0)
R ²	0.386	0.316	0.056
N individuals	3992	3992	3992
N observations	13310	13310	13310

Note: Control variables are time fixed effects, individual fixed effects, income, past net wealth, employment status, number of years worked more than 32 hours per week, age, age square, gender, education, marital status, number of children in the house, family size, whether they are part of the high income panel, level of urbanization, and province dummies. Sample period: 1993-2018. Standard errors are clustered at the individual level. Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

A.3 The Effect of Local Unemployment Experiences on Savings

Table A6: Effects of Local Unemployment Experience on Savings

	(1) Δ Wealth	(2) Δ Non-Fin. Wealth	(3) Δ Fin. Wealth
Local Unempl. Experience	45468.6** (18485.2)	23548.6 (15041.8)	21920.0*** (8209.0)
R ²	0.440	0.371	0.089
N individuals	3396	3396	3396
N observations	11724	11724	11724

Note: Control variables are time fixed effects, individual fixed effects, income, past net wealth, employment status, number of years worked more than 32 hours per week, age, age square, gender, education, marital status, number of children in the house, family size, whether they are part of the high income panel, level of urbanization, and province dummies. Sample period: 1993-2018. Standard errors are clustered at the individual level. Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

A.4 The Effect of Unemployment Experiences on Savings: Using Different Values of λ

Table A7: Effects of Unemployment Experience on Savings: $\lambda = 0.5$

	(1) Δ Wealth	(2) Δ Non-Fin. Wealth	(3) Δ Fin. Wealth
Unempl. Experience	77824.5*** (28116.4)	59644.7** (23976.5)	18179.7* (10972.2)
R ²	0.395	0.321	0.081
N individuals	4654	4654	4654
N observations	16465	16465	16465

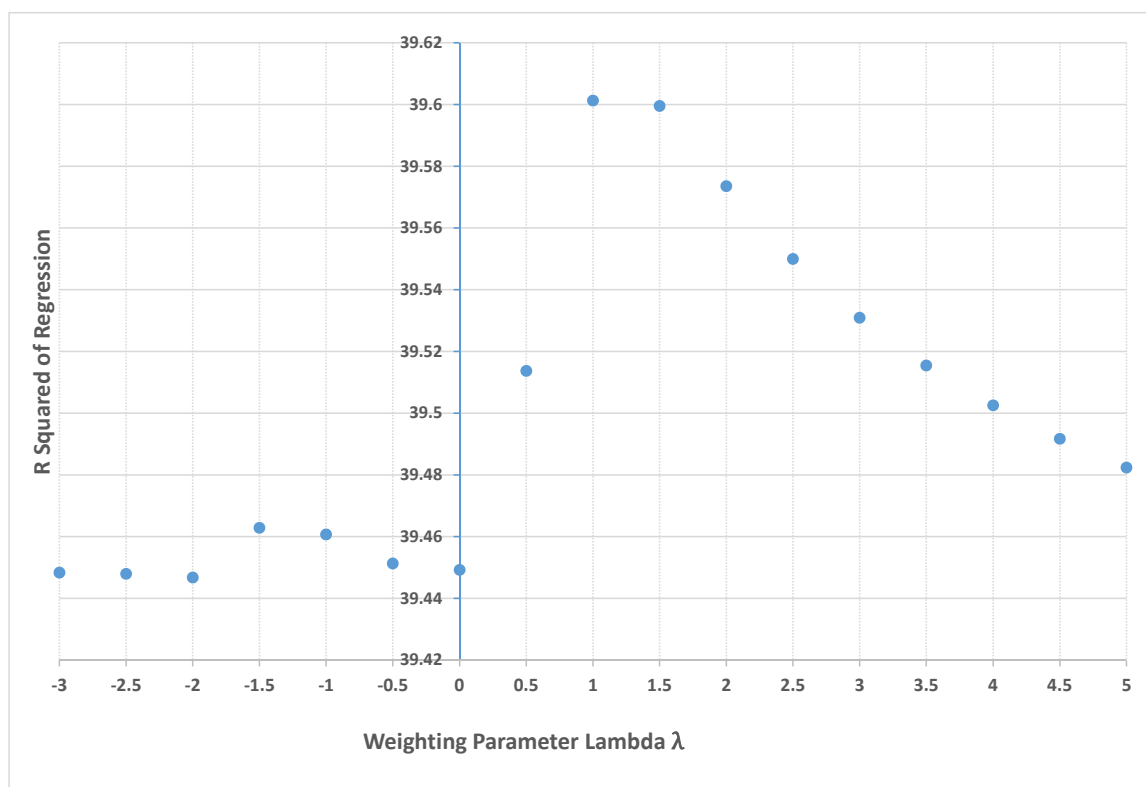
Note: Control variables are time fixed effects, individual fixed effects, income, past net wealth, employment status, number of years worked more than 32 hours per week, age, age square, gender, education, marital status, number of children in the house, family size, whether they are part of the high income panel, level of urbanization, and province dummies. Sample period: 1993-2018. Standard errors are clustered at the individual level. Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A8: Effects of Unemployment Experience on Savings: $\lambda = 1.5$

	(1) Δ Wealth	(2) Δ Non-Fin. Wealth	(3) Δ Fin. Wealth
Unempl. Experience	79405.0*** (18842.0)	59786.6*** (15953.8)	19618.4*** (6959.6)
R ²	0.396	0.321	0.081
N individuals	4654	4654	4654
N observations	16465	16465	16465

Note: Control variables are time fixed effects, individual fixed effects, income, past net wealth, employment status, number of years worked more than 32 hours per week, age, age square, gender, education, marital status, number of children in the house, family size, whether they are part of the high income panel, level of urbanization, and province dummies. Sample period: 1993-2018. Standard errors are clustered at the individual level. Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Figure A1: R^2 for different values of λ



A.5 Further Robustness Checks

Table A9: Effects of Experience on Savings: Age 25-65

	(1) Δ Wealth	(2) Δ Non-Fin. Wealth	(3) Δ Fin. Wealth
Unempl. Experience	104314.5*** (28646.2)	78295.0*** (24420.4)	26019.5** (10671.3)
R ²	0.405	0.335	0.078
N individuals	4105	4105	4105
N observations	13206	13206	13206

Note: Control variables are time fixed effects, individual fixed effects, income, past net wealth, employment status, number of years worked more than 32 hours per week, age, age square, gender, education, marital status, number of children in the house, family size, whether they are part of the high income panel, level of urbanization, and province dummies. Respondents aged 25-65. Sample period: 1993-2018. Standard errors are clustered at the individual level. Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A10: Effects of Experience on Savings: Additionally Control for The Interaction of Time Fixed Effects and Cohorts

	(1) Δ Wealth	(2) Δ Non Fin. Wealth	(3) Δ Fin. Wealth
Unempl. Experience	133133.3*** (50101.2)	78264.4* (42169.2)	54868.9*** (19536.4)
R ²	0.402	0.329	0.086
N individuals	4654	4654	4654
N observations	16465	16465	16465

Note: Control variables are interaction of time fixed effects with dummy variables for cohorts (who were born in periods 1917-1929, 1930-1944, 1945-1959, 1960-1974, and 1975-1993), time fixed effects, individual fixed effects, income, past net wealth, employment status, number of years worked more than 32 hours per week, age, age square, gender, education, marital status, number of children in the house, family size, whether they are part of the high income panel, level of urbanization, and province dummies. Sample period: 1993-2018. Standard errors are clustered at the individual level. Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A11: Effects of Experience on Savings: Exclusion of Last Time Participation

	(1) Δ Wealth	(2) Δ Non-Fin. Wealth	(3) Δ Fin. Wealth
Unempl. Experience	118418.6*** (25126.7)	86666.6*** (21578.3)	31752.0*** (10227.2)
R ²	0.396	0.313	0.086
N individuals	3347	3347	3347
N observations	12687	12687	12687

Note: Control variables are time fixed effects, individual fixed effects, income, past net wealth, number of years worked more than 32 hours per week, age, age square, gender, education, marital status, number of children in the house, family size, whether they are part of the high income panel, level of urbanization, and province dummies. This sample excludes the last time participation of all respondents. Sample period: 1993-2018. Standard errors are clustered at the individual level. Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A12: Effects of Experience on Savings: Additionally Control for The Ordinal Numbers of Each Respondent's Participation over the Panel

	(1) Δ Wealth	(2) Δ Non-Fin. Wealth	(3) Δ Fin. Wealth
Unempl. Experience	109625.2*** (23957.4)	84161.6*** (20454.5)	25463.5*** (9583.3)
R ²	0.398	0.323	0.083
N individuals	4654	4654	4654
N observations	16465	16465	16465

Note: Control variables are time fixed effects, individual fixed effects, income, past net wealth, number of years worked more than 32 hours per week, age, age square, gender, education, marital status, number of children in the house, family size, whether they are part of the high income panel, level of urbanization, and province dummies. Sample period: 1993-2018. Standard errors are clustered at the individual level. Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A13: Effects of Experience on Savings Without Past Wealth Control

	(1) Δ Wealth	(2) Δ Non Fin. Wealth	(3) Δ Fin. Wealth
Unempl. Experience	-7019.0 (18936.3)	-6111.7 (17616.8)	-907.3 (8377.2)
R ²	0.051	0.063	0.006
N individuals	4654	4654	4654
N observations	16465	16465	16465

Note: Control variables are time fixed effects, individual fixed effects, income, employment status, number of years worked more than 32 hours per week, age, age square, gender, education, marital status, number of children in the house, family size, whether they are part of the high income panel, level of urbanization, and province dummies. Sample period: 1993-2018. Standard errors are clustered at the individual level. Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A14: Effects of Experience on Savings: Using the Second Lag of Wealth as an Instrument for the First Lag of Wealth

	(1) Δ Wealth	(2) Δ Non Fin. Wealth	(3) Δ Fin. Wealth
Unempl. Experience	55331.3** (24427.0)	19216.3 (23089.5)	36115.1** (14112.1)
R ²	0.302	0.213	0.080
N individuals	3518	3518	3518
N observations	13268	13268	13268
Diagnostic tests			
Underidentification test			
Kleibergen-Paap rk LM statistic	112***	112***	112***
Weak identification test			
Cragg-Donald Wald F statistic	1070	1070	1070
Stock-Yogo weak ID test critical values			
10% maximal IV size	16.38	16.38	16.38

Note: Control variables are time fixed effects, individual fixed effects, income, past net wealth, employment status, number of years worked more than 32 hours per week, age, age square, gender, education, marital status, number of children in the house, family size, whether they are part of the high income panel, level of urbanization, and province dummies. The first lag of net wealth control variable is instrumented by the second lag of net wealth. Sample period: 1993-2018. Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A15: Effects of Experience on Savings: Heterocedasticity-Based Instrument

	(1) Δ Wealth	(2) Δ Non Fin. Wealth	(3) Δ Fin. Wealth
Unempl. Experience	134989.6*** (22168.7)	131380.6*** (20965.1)	-165.1 (10685.0)
R ²	0.372	0.252	0.012
N individuals	4654	4654	4654
N observations	16465	16465	16465
Diagnostic tests			
Underidentification test			
Kleibergen-Paap rk LM statistic	71.7***	71.7***	71.7***
Weak identification test			
Cragg-Donald Wald F statistic	27.3	27.3	27.3
Stock-Yogo weak ID test critical values			
5% maximal IV relative bias	21.40	21.40	21.40

Note: Control variables are time fixed effects, individual fixed effects, income, past net wealth, employment status, number of years worked more than 32 hours per week, age, age square, gender, education, marital status, number of children in the house, family size, whether they are part of the high income panel, level of urbanization, and province dummies. We assume the past net wealth control is an endogenous variable and use the heteroscedasticity-based instrument approach (Lewbel, 2012). Sample period: 1993-2018. Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$