

Estimating the Impact of Local Conditions on Asset Preferences in Adulthood

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Abstract

In this paper, I quantify the impact of state-level macroeconomic conditions during childhood on investment decisions in adulthood. The use of intertemporal within-state variation allows me to control for potentially confounding unobservable national conditions. Unlike previous research that uses national aggregates, I find a significant effect of childhood macroeconomic conditions on investment decisions. This effect is much larger for those who grew up during the Great Depression. Children who grew up in states with lower average personal income invest less in risky assets throughout their lives, have higher levels of home equity, and are less likely to be self employed. Financial conditions during the teenage years have the largest impact on investment in adulthood. I provide evidence using the Panel Study of Income Dynamics, the Survey of Income and Program Participation, and the Health and Retirement Study.

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1 Introduction

The Great Depression was the longest-lasting economic crisis in American history and significantly altered the lives of the Silent Generation. The “contraction after 1929 shattered beliefs in a ‘new era’” (Friedman and Schwartz, 1971, p. 673). People had to change their lifestyles dramatically in order to survive the harsh economy. “Banks closed with no warning. Businesses were lost. Farms were lost. Homes were lost” (Anderson, 2002, p. 1). Depression survivors were encouraged to remain pessimistic even after the economy began to recover. Experts during this time publicly stated that it was highly likely that there would be another major economic crisis after the end of World War II. This expectation of economic instability led individuals to view “accumulating money and other liquid assets” (Friedman and Schwartz, 1971, p. 560). Anecdotal evidence suggests that the “Silent Generation” who grew up during this time period are still influenced by their experiences and are more cautious with their money than other generations. This “Depression generation” has frequently been described to “hoard money, [be] pack rats, and in general have trouble parting with anything that may possibly be of use down the road” (Williams). Conversely, those who were born after the Depression during the war boom years of the 1940s, often have only memories of good financial conditions as children and make different decisions.

In this study, I identify whether individuals alter their decisions regarding financial assets based on macroeconomic conditions in childhood. I argue that growing up during an economic downturn leads to expectations of instability in the economy as well as an overall pessimistic attitude about returns on investments. This carries over to investment allocations throughout adulthood.

As the deepest and longest lasting economic downturn in American history, the Great Depression provides an ideal setting to investigate behavioral reactions to macroeconomic downturns early in life. I exploit within-state variation in childhood income over time to investigate whether macroeconomic fluctuations at the sub-national level had a lasting impact on people who grew up during this time period, while controlling for national and life-cycle related unobservable shocks. I will determine whether investment in stocks, business, and property were impacted by growing up during this turbulent time.

Unlike previous studies, I use sub-national variation in income over time to investigate impacts of economic duress on investment decisions. The advantage of using state-level variation over variation at the national level during childhood is that I am able to control for unobserved national factors that differ across birth year cohorts. Therefore, I can rule out potential country level and age-related factors that may drive variation in investment allocation decisions across birth cohorts. My identification comes from differences in individuals

who grew up in the same state, but faced different economic settings.

To get detailed investment data from individuals at different points in their lives, I use three different data sets: the 1984-2007 Wealth Supplements of the Panel Study of Income Dynamics, the 1984-1990 panels of the Survey of Income and Program Participation, and the 1992 cross section of the Health and Retirement Survey. The PSID and SIPP repeated cross-sections allow me to observe decisions of Great Depression survivors throughout middle age and into retirement.

The use of the 1992 Health and Retirement Study (HRS) provides a new dimension of evidence for the analysis. It contains data on the changes in labor force participation and health transitions that individuals go through at the end of their careers and beginning of retirement. These data enable me to investigate whether childhood during the Great Depression impacts investment allocations into retirement.

The primary results suggest that the magnitude of the impact of the Depression during an individual's teen years on later investment is substantive. Individuals who grew up during a major economic downturn remain pessimistic and risk averse over the course of their lifetime. I find that individuals put more weight on experiences from their teenage years than earlier periods of childhood, but earlier experiences may also hold some positive weight in decision-making. This change in attitude continues to retirement, as my estimates from the HRS sample are similar to those in the PSID and SIPP. The effect of deviations in state income from long run averages and national trends is greater for individuals who grew up during the volatile time of the Great Depression.

State macroeconomic conditions lead to lower investment in stocks in adulthood (controlling for adult income). An increase of \$1000 in average state income (slightly over one standard deviation) during teenage years will increase the percentage of liquid assets held in stocks by 3.3 percentage points after controlling for national conditions, fixed state attributes, and fluctuations in asset allocation due to the life cycle. Estimates from a sample restricted to those who grew up during the Great Depression (1919-1940) suggest a larger effect of 23 percentage points. This suggests that growing up during a large economic downturn has a greater in magnitude, longer lasting impact than growing up during a less volatile time.

To investigate whether other investment preferences are affected, I also estimate the impact on business ownership and home ownership. Business ownership is considered to be a substantial risk and home ownership is seen as a relatively stable asset. My results are consistent with this hypothesis; I find a significant effect on business ownership in middle age, but not for people who are close to retirement. On the other hand, home ownership rates are not affected by state income per capita where the person was a child. The Great

Depression survivors in my sample are well into middle age by the 1980's, thus it is likely that the life cycle effect dominates the childhood macroeconomic experiences effect on home ownership. Although individuals are not more likely to purchase a house at any point in life, they do make different investment decisions with respect to property. The results suggest that those who experienced lower average state income during late childhood purchase homes earlier in life and invest more in home equity.

In order to test the robustness of my results, I also estimate several alternative regression specifications. First, I allow for state income in childhood to have a nonlinear effect on household investment by including a quadratic term of mean state income for each period of childhood in the regression. Estimates from this specification are of similar magnitude to the linear regression. Second, I also test whether the mean or the variance of state income during childhood matters by including the standard deviation of state income into the regression. The results from this regression suggest that variance of state income during childhood does not matter. Finally, I estimate a flexible weighting model developed in Malmendier and Nagel (2011) to see if using state conditions as a driver for asset allocation decisions suggests a similar weighting scheme to the results using national conditions in their paper. My results suggest that individuals weight local conditions similarly to national conditions when making investment decisions.

The results presented in this project will increase our knowledge about macroeconomic shocks on individual behavior in several ways. First, the use of state level economic conditions during childhood allows us to see if variations in local economic conditions during childhood have noticeable impacts on mean preferences and behavior. People who grew up during the Depression are more financially conservative and therefore accumulate less wealth, but are people who were hit worse by the Great Depression significantly more risk averse? Additionally, the impressionable years hypothesis in psychology claims that conditions during ages 18-25 have the largest impact on preferences for risk (Mannheim, 1952; Krosnick and Alwin, 1989). Results in economics have supported these hypotheses. Giuliano and Spilimbergo (2014) suggest that conditions before this age range have no impact on beliefs, but my preliminary results suggest that preferences for risk are shaped by conditions before this age range, in late childhood. Finally, I am able to investigate whether preferences formed by economic conditions during childhood follow individuals throughout adulthood.

1.1 Literature

The prior literature on the impact on later life choices of economy-wide shocks earlier in life is focused on national aggregates. Regional macroeconomic shocks that occur at

the beginning of one's career have a lasting impact on composition of household assets (Brunnermeier and Nagel, 2008). Also, high lifetime stock market returns will lead to people heavily investing in stocks Malmendier and Nagel (2011). Those who grew up during a depression have a higher value orientation in their investment portfolio (Cronqvist et al., 2015).

Macroeconomic duress in childhood also has long-term career impacts. There is a substantial wage penalty if one graduates from college during a recession, which is most striking during the first ten years of one's career. Along with decreased earnings, workers who graduate in a recession begin their careers at lower quality firms and subsequently change jobs more frequently (Oreopoulos et al., 2012). Despite all this evidence, there is still information to be learned about behavior in response to macroeconomic shocks. The one study that focuses on subnational aggregates shows that individuals born in the trough of the Great Depression had substantially lower incomes and higher disability rates than similar individuals born at a time when state income was higher (Thomasson and Fishback, 2014). Their results show that the effect is strongest in low-income states and not present for high-income states during the Great Depression.

Many papers in the psychology literature have investigated whether personal experiences have more sway in decision-making than statistics and summary information obtained through education. They argue that recent personal experiences have a greater influence than past experiences (Nisbett and Ross, 1980; Weber et al., 1993; Hertwig et al., 2004). These ideas have carried over into economics, where research has been done on how environment in childhood impacts preference formation, such as taste for income redistribution and political views (Giuliano and Spilimbergo, 2014; Guiso et al., 2008; Osili and Paulson, 2008). The results of these studies suggest that individuals are very responsive to external economic conditions and that personal experiences shape beliefs more than analysis of historical trends.

2 Methodology

2.1 How Do State Conditions Influence Preferences for Risk?

Individuals decide how to allocate assets based both on preferences for level of risk and beliefs about future returns on assets. Observed macroeconomic conditions over ones lifetime could influence both preferences for risk in assets and beliefs about future economic downturns. Many asset pricing models have assumed that individuals update their beliefs as the market fluctuates and they observe more data. Cogley and Sargent (2008) argue that the

Depression altered the beliefs of the children of the Depression, increasing their pessimism about the future of the economy. Their asset pricing model assumes an agent updates his beliefs about the future of the economy as he observes more data.

I will be using similar assumptions about how economic conditions impact behavior to Malmendier and Nagel (2011); Brunnermeier and Nagel (2008). I assume that an agent’s observations of economic fluctuations in the past have an influence on their decisions in the present.

2.2 Regression

Let i index an individual observed in year t with state of birth b , present state of residence c , age a , and birth year y . The outcome of interest is percentage of household liquid assets in stocks in year t (Y_{it}). The key independent variables are the mean state income during early, middle, and late childhood (ESI_i , MSI_i , and LSI_i). Early childhood is defined as ages 0-6, middle childhood is ages 7-12, and late childhood is ages 13-18. I model the relationship between macroeconomic conditions in childhood and investment in adulthood as:

$$Y_{it} = \alpha + \beta_1 ESI_i + \beta_2 MSI_i + \beta_3 LSI_i + X'_{it}\theta + \gamma_b + \delta_c + \rho_a + \psi_y + \mu_t + \epsilon_{it},$$

where X'_{it} is a vector of economic controls including family income, race, education, marital status, and number of children.

In order to isolate the effect of state income during childhood on investment allocation in adulthood, I add fixed effect to control for potentially confounding unobservables. First, γ_b are birth state fixed effects that control for unobserved shocks related to growing up in a particular state as well as fixed state-level characteristics. Second, δ_c are current state fixed effects that control for unobserved shocks related to residing in a particular state during the survey date. Third, ρ_a are age fixed effects that control for variations in asset allocation related to the life cycle. For example, one might think that asset allocation changes when one approaches retirement age. Since I have multiple years of data, the age and birth year fixed effects are not collinear. Fourth, ψ_y are birth year fixed effects that remove any aggregate cohort effects, such as aggregate risk aversion effects due to national level changes in the macro economy. Finally, μ_t are survey year fixed effects that control for national macroeconomic conditions in the survey year.

Along with using the full sample of these three data sets, I also restrict my sample to individuals born during the Great Depression era (before 1940) in order to determine whether there are heterogeneous treatment effects. Growing up during an especially turbulent time may have a more substantial, longer lasting impact. An eleven month long recession as hap-

pened in 1969-1970 will not be as memorable as the almost four year long Great Depression that had much greater decreases in state income.

2.3 Identification

After all of the fixed effects are included, the identification for the explanatory variables of interest in my specification comes from variation in state income across birth year cohorts, within survey year, birth state, current state, and age group. The treatment effect is the combination of both the direct impact of macroeconomic conditions on the child and the indirect impact passed through the parents to the child. For example, the estimate of β_1 would be impacted if state income dropped when the individual was a toddler and the parent lost their job, so they had more time to spend with the child. As I do not observe inheritances or support from parents, these estimates also contain the effect of transmission of wealth from parents. My estimate will be impacted if the individual's parent loses money due to conditions in the macro economy and thus has less to transmit to their adult child when they die, impacting the individual's investment decisions.

3 Data

3.1 State Income Data

My research question requires detailed financial information at the individual level and some measure of state economic changes during childhood for analysis. As I am analyzing the impact of childhood macroeconomic conditions on investment decisions, I need data on state level macroeconomic conditions for the majority of the 20th century. The explanatory variable that I use is mean real income at the state level. These per capita state level real income data are obtained for the years 1918 to 2007. I obtain personal income data for years prior to 1970 from Thomasson and Fishback (2014) and obtain data for after 1970 from the Bureau of Economic Analysis¹. These real income data are corrected for inflation using the CPI to allow comparisons across years.

In the Census and Bureau of Economic Analysis data, there is substantial variation in state income both across states and over time. Figure 1 shows trends in personal income by region between 1918 and 1970. This time period contains the Great Depression and the recovery period during World War II.

¹As these data come from different sources, I have tested my results using different years as cutoffs between the data sets and get the same results

As seen in Figure 1, states in the South consistently have lower income than Northern states. Much of this variation is due to differences in industries that developed in these regions. The South was largely agricultural (cotton and tobacco) in the early 20th century. The invasion of the boll weevil and low cotton prices stunted growth (Lange et al., Lange et al. (2009)). The Depression and droughts in the 1930's further stunted growth in the South, leading President Roosevelt to name the South as the “number one priority” in allocations of aid. Conversely, industries in the North, such as steel and automobiles flourished over the 20th century. The North did not face severe droughts and thus continued to have the highest personal income levels.

The greatest state income variation for my study comes from the Great Depression and World War II era beginning in 1929 and lasting until 1945. At first, the Great Depression hit heavily industrialized areas like Pennsylvania (steel), Indiana (steel), and Michigan (automobiles). Areas that supported railroads and coal mining also suffered. At the same time as the Great Depression, large droughts happened in the West, meaning devastation in Oklahoma, Texas, Kansas, Colorado, and parts of New Mexico. This led to widespread unemployment and poverty in these states. Recovery was rapid until the United States entered World War II in December 1941, when income growth returned to its long run path. World War II revitalized the U.S. industrial sector, which led to a rapid increase in state incomes that can be seen in the figure.

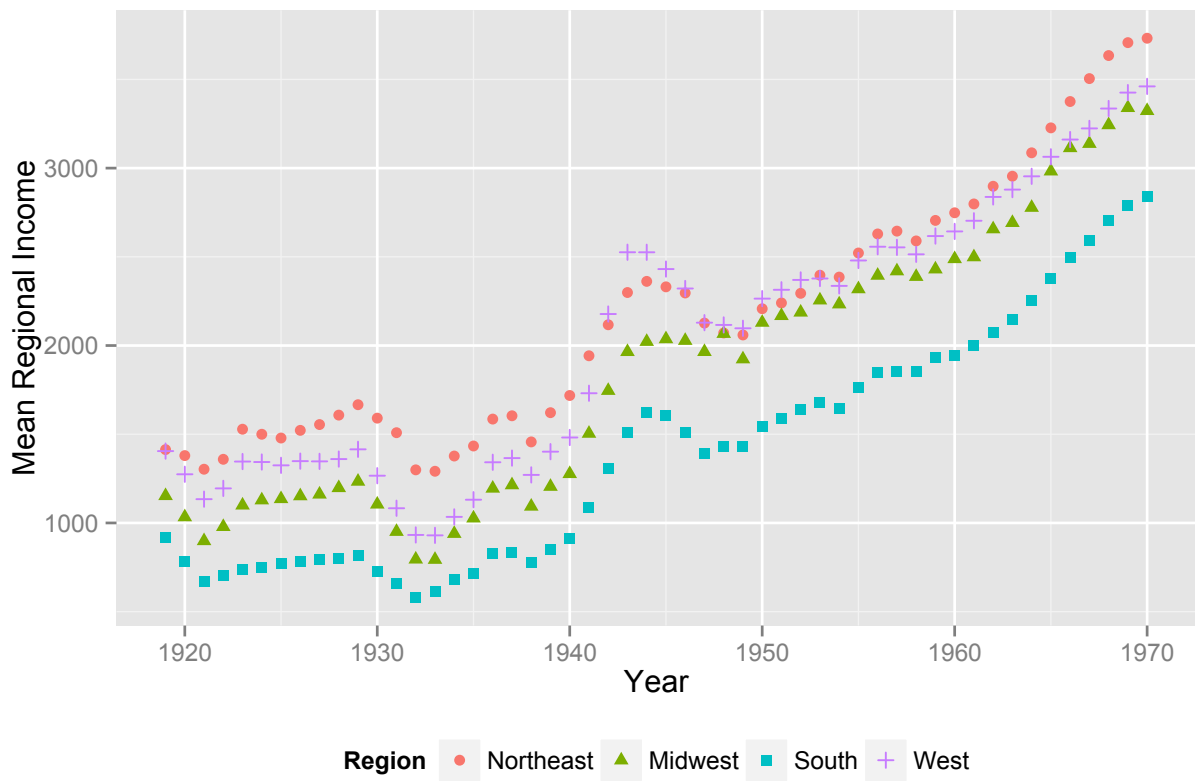
3.2 Panel Study of Income Dynamics

The primary source of household financial data that I use is the Panel Study of Income Dynamics 1984 Wealth Supplement. The PSID is a longitudinal panel survey of American families measuring economic, social, and health factors over multiple generations. It has grown from 4800 families in 1968 to over 9,000 families in 2009 and has an oversample of minority and low-income families. This oversample of low-income families is dropped from analysis so that I can estimate nationally representative average treatment effects.

My sample is a repeated cross-section of individuals who were surveyed in the PSID wealth supplements between 1984 and 2007. The PSID wealth supplement is a detailed survey of selected PSID families' financial status. It includes information about the net value of business assets, value of checking and savings accounts, value of stock investments, and home equity.

The variables that I use from the PSID are defined in table 1 and their summary statistics are shown in Table 16. The household assets that I am primarily interested in for analysis are real estate, stock market, bond investments, and banking accounts. I would expect

Figure 1: Income Dynamics By Region, 1918-1970



participation in the stock market to be lower for Depression survivors (controlling for income) due to correlation in the raw data between observed stock market returns and stock market participation.

Real estate is seen as a ‘safe’ asset by Great Depression survivors, as it is not subject to the fluctuations of the stock market. Real estate values were growing during this time period. After adjusting for inflation, median home values nearly quadrupled between 1940 and 2000. Each decade after 1940 saw an increase in home values, with the largest increase in the 1970's (Census of Housing, 1990). Individuals who grew up during this time period observed these increasing home values and formulated expectations that property values would continue to increase. Therefore home ownership is seen as a relatively safe investment during the mid-20th century.

The demographic controls that I use are those that would impact decisions about household asset composition, while controlling for income. Race affects decisions regarding finances through cultural attitudes. An individual's asset composition changes based on what point in the life cycle he is in, so I must control for age to get rid of life cycle effects on assets. One who is near retirement would not have the same stocks/bonds/savings composition as a young person starting their career. Family composition also affects decisions to invest in stocks or property, so I include marital status and number of children in my regressions. Higher education may make lead one to make more conservative decisions, while a higher income may allow one to take larger risks for a greater payoff.

3.3 The Survey of Income and Program Participation

To check the robustness of my PSID results, I estimate the model using the 1984-1990 panels of the Survey of Income and Program Participation (SIPP). The SIPP is a continuous series of national panels, beginning in 1984. Each panel contains a nationally representative sample of households that are followed for approximately four years. The nationally representative nature of the data will also allow me to determine whether the results from the PSID are true for the majority of the population.

The SIPP also provides detailed financial information for each household that will allow a deeper investigation of the impact of the Great Depression. Table 1 provides definitions of new variables and Table 17 presents summary statistics. I include all of the dependent variables that I used in the PSID analysis and add a few more. The dependent variables that I add to my analysis are: business ownership, IRA value, mortgage principle, and other measures of wealth and debt. I use the same demographic information as control variables as in the PSID analysis.

3.4 The Health and Retirement Study

Although I am constrained to using the four United States regions in the Health and Retirement Study, the use of retirees enables me to determine whether the average treatment effect of state income during childhood in a nationally representative sample of individuals over 50 is the same as a nationally representative sample of all adults. The HRS dataset is a longitudinal panel study that surveys about 20,000 Americans over the age of 50 every two years.

Like the SIPP, the HRS contains detailed financial information at the household level. I can perform all of the regressions that I ran using the PSID and SIPP using data from the HRS. Unfortunately, due to confidentiality, the HRS does not make birth state information at the individual level publicly available. They aggregate birth state information up to the region level. For this reason, I aggregate my state level average income data to the region level and use regional income for my proxy in HRS regressions. Summary statistics can be found in Table 18.

Table 1: Variable Definitions and Sources

Variable Name	Definition	Data Source
State Income 0-17	(Average Real State Income between ages 0-17)/1000	Census
State Income 0-6	(Average Real State Income between ages 0-6)/1000	Census
State Income 7-12	(Average Real State Income between ages 7-12)/1000	Census
State Income 13-17	(Average Real State Income between ages 13-17)/1000	Census
Black	African American Heritage	SIPP/PSID/HRS
Hispanic	Hispanic Heritage	SIPP/PSID/HRS
Other Race	Other Non-white Heritage	SIPP/PSID/HRS
Age	Age of Household Head	SIPP/PSID/HRS
# Children	Number of Children in Household	SIPP/PSID/HRS
Married	Marital Status Dummy	SIPP/PSID/HRS
Education	Years of Education	SIPP/PSID/HRS
Family Income	Family Income	SIPP/PSID/HRS
Home Value	Home Value	PSID/HRS
Home Equity	Total Home Equity	SIPP/PSID/HRS
Mortgage Principal		SIPP
Home Ownership	Dummy for Home Ownership	SIPP/PSID/HRS
Own Stocks	Dummy for Owning Stocks	SIPP/PSID/HRS
Total in Stocks	Total Value of Stocks	SIPP/PSID/HRS
Total in Savings	Total Balance of Savings Accounts	SIPP/PSID/HRS
Liquid Assets	<i>Stocks + Bonds + Savings</i>	SIPP/PSID/HRS
% Liquid Assets in Stocks	<i>Value of Stocks / Value Liquid Assets</i>	SIPP/PSID/HRS
Business Owner	Dummy for Business Owner	SIPP/PSID
Business Equity		SIPP
IRA balance		SIPP/HRS
Net Worth	Household Net Worth (1984 \$)	SIPP
Unsecured Debt	Household Unsecured Debt (1984 \$)	SIPP

4 Summary Statistics and Preliminary Evidence

Table 16 contains summary statistics from the 1984-2007 PSID Wealth Supplements. The average age in my sample is 41, so many in my sample experienced childhood during the Great Depression. I have divided the income measures by \$1000 so that I can interpret my coefficients as changes in \$1000 to average state income. A \$1 change in average state income during childhood likely would not be perceived, but a change of \$1000 would certainly be noticeable.

The average family income for this sample is \$61,125, close to the United States average. I have dropped the poverty oversample observations of the PSID in order to obtain a more accurate estimate of the effect for the general American population.

27% of the individuals in the PSID sample invest in stocks, compared with the 34.2% national average. However, I have adequate variation for analysis- the average family in the PSID wealth supplement has 16% of their liquid assets in stocks with a standard deviation of 31 percentage points.

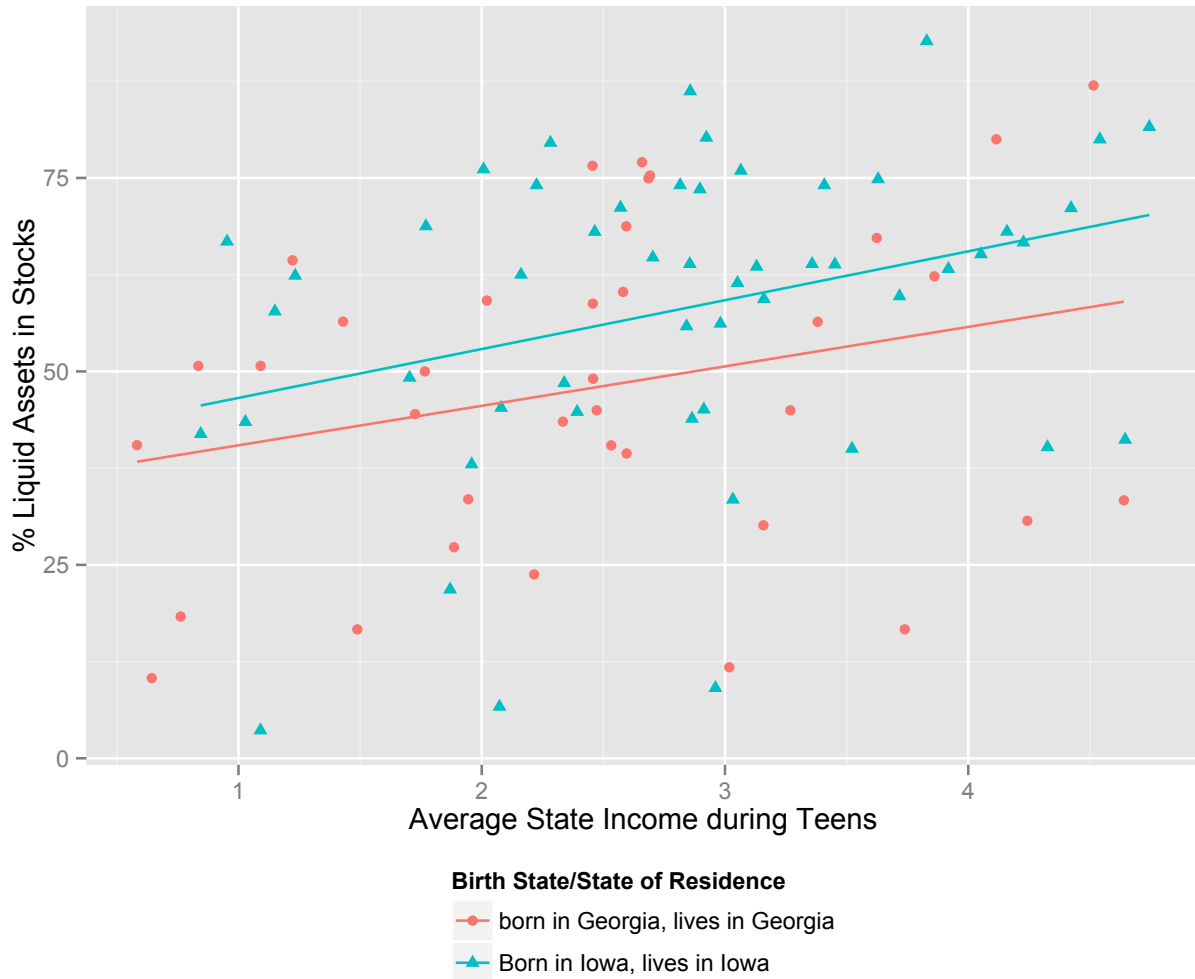
Over half of the people in my PSID sample own homes (65%), which enables me to analyze whether macroeconomic shocks have an impact on the decision to buy a house and how much to spend on a house. The home ownership rate in the PSID is not significantly different than the 64% United States home ownership rate in 1994. The average home value in the PSID is \$229,614 (2007\$). This is lower than the 2007 US average of \$305,900 (US Census).

I am also able to investigate the decision to own or invest in a business using the PSID. 14% of individuals in my sample own a business and the average value is \$261,463. Based on the average value of the businesses in this sample, it is likely that these are small, family owned businesses.

The SIPP survey is a nationally representative sample. The average age of individuals in this sample is 41. The SIPP is a much larger sample than the PSID, however 40% of my sample invests in stocks, which is not significantly different from the national average of 34.2%.

Family income is reported monthly in the SIPP. The average of \$2884 per month is closer to the U.S. Census national average in 1984 than the average 1984 income in the PSID. 56% of the sample owns a home and 9% are independent business owners. The SIPP reports business equity for individuals, so I will be able to analyze whether experiencing macroeconomic shocks in childhood impacted business investments. For those who own businesses, the average business equity is \$67,841. Since the SIPP does not ask about business valuation, I am unable to report the average business value for this data set. However, the

Figure 2: Correlation Between Regional Income During Teens and Stock Investment



average business equity reported in the PSID is \$36,543, so it is likely that businesses in the SIPP are larger on average than in the PSID.

To provide justification for my variable of interest and identification strategy, Figure 2 provides evidence of correlation between average state income in teens and stock investment, by birth state and state of residence. The triangular data points correspond to individuals who were born in Iowa and reside in Iowa at the time of the PSID survey. The circular data points correspond to individuals who were born in Georgia and currently reside in Georgia at the time of the PSID survey. There is a clear positive correlation between average state income during teens and the percentage of liquid assets invested in stocks after controlling for birth state and current state.

Summary statistics for the HRS can be found in Table 18. As the HRS is supposed

to be a nationally representative sample of people over the age of 50, average income is slightly higher than that in the PSID. The US is divided up into 9 regions in the HRS, which allows for some variation in conditions during childhood. Unsurprisingly, the average regional incomes for the childhoods of individuals in this sample are not too different from the average state incomes of individuals in the SIPP and PSID. The average person in the HRS has 19% of their liquid assets invested in stocks, which is higher than in the SIPP and the PSID, but this may account for maturing of investment tastes over time. 12% of individuals in this sample own a business, which is larger than in the SIPP or PSID. This makes sense because people are more likely to set out on their own in the business world as they grow older.

5 Results

Table 2-7 present the results of the regressions for various household assets. Financial status at the state level has a large, positive effect on preferences for risky assets. Holding state of birth and state of residence fixed, individuals invest less in stocks if they experienced a drop in income in late childhood. The estimated impact is robust to changing the model specification and the use of different datasets. This is consistent with economic theory and previous empirical research.

Although I drop the poverty oversample of the PSID, there still may be concerns that the sample may not be nationally representative and the estimates presented below are not an accurate estimate of the average treatment effect. Therefore, I checked my estimates for robustness using the provided sampling weights, which did not change the results.

5.1 Stock Market Participation

The the effect of average state income during childhood on stock market participation in adulthood is investigated using a linear probability model. Equation (1) from the empirical section is estimated with the outcome as a dummy variable equal to one if the individual owns any stocks and zero otherwise.²

Macroeconomic conditions at the state level have a significant impact on both the intensive margin the extensive margin of stock investment. Individuals take deviations in state income from both long run state averages and national trends when deciding to purchase stocks and how many stocks to purchase. According to the SIPP full sample results, a \$1000

²It is important to note here that I control for the amount of liquid asset holdings as stock market participation is increasing in liquid assets (Vissing-Jorgenson Vissing-Jorgensen (2003)).

increase in average state income during late childhood will increase the probability that one will invest in stocks by 5.04 percentage points. When a probit model is used, I obtain similar results.

Estimation of the model using the PSID sample or the Depression subsamples yields a null result. As the PSID sample contains observations over a larger period of time than the SIPP, it has more observations of Great Depression survivors later in life. It is also likely that the life cycle effects or more recent experiences with the economy dominate the childhood experiences effect in stock market participation as Depression survivors age. To support this hypothesis, estimating the regression using just the 1984 PSID Wealth Supplement or the 1984 SIPP produces similar significant stock market participation results to the 1984-1990 SIPP, as these cross-section contains a younger sample of Depression survivors. This suggests that observations of local macroeconomic conditions earlier in life hold more weight for younger individuals. As one ages and gains more experience, they determine that the value of diversifying household assets outweighs the chance of losing their earnings a downturn.

Table 2: Full Sample: Stock Market Participation

	(1)	(2)
	PSID 1984-2007	SIPP 1984-1990
<u>State Income 0-6</u>		
1000	0.619	-3.30
	(1.99)	(3.41)
<u>State Income 7-12</u>		
1000	-0.96	-1.21
	(2.11)	(3.00)
<u>State Income 13-18</u>		
1000	2.10	5.04**
	(1.61)	(2.42)
N	48,743	37,624
Household characteristics	x	x
Survey year dummies	x	x
Age dummies	x	x
Birth year dummies	x	x
State of residence dummies	x	x
Birth state dummies	x	x

† Household characteristic controls include value of liquid assets, household income, race, sex, years of education, number of children, and marital status

†† Robust Standard errors in parentheses (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$)

5.2 Percentage of Liquid Assets Held in Stocks

As I have shown evidence for the extensive margin of stock market participation, I now investigate the intensive margin. Table 3 shows the estimated effect of average state income during childhood on fraction of liquid assets invested in stocks. I restrict the sample to stock market participants, as the assumption that the same mechanism that drives stock market participation drives the fraction of liquid assets invested in stocks may not be correct. Previous literature has asserted that the value of liquid assets is an important determinant of stock market participation, but it does not necessarily have the same role in determining the percentage of liquid assets invested in stocks.

Controlling for birth state, current state, age, birth year, and survey year effects, greater average state income during childhood coincides with greater investment. The results from the 1984-2007 PSID Wealth Supplements in column (1) imply that a \$1000 increase in state income (an increase of about one standard deviation) during late childhood will increase the percentage of liquid assets held in stocks by 6.25 percentage points, controlling for income and other household characteristics. This effect is not robust to the SIPP dataset.

The result that average state income during childhood is most important during late childhood is consistent with the impressionable years hypothesis. This is the time that people begin to form preferences for risk and beliefs about dynamics of the macro economy. Coefficients for the other two periods of childhood are almost never statistically significant.

5.2.1 Heterogeneous Effects

When I estimate the regression using a sample of only individuals who experienced the Great Depression (born before 1940), the estimates of the impact of deviations in average state income during childhood on risky asset holdings in adulthood become much larger in magnitude. This makes sense, as the Great Depression during the 1930's was the longest and deepest financial downturn in American history. Individuals who were growing up during that time were imprinted with the fear of losing everything in another market crash. The mental scars of growing up during this period of extreme economic duress last longer and hold more weight in decisions than experiences growing up during a less volatile time.

Results from the HRS data suggest that a \$1000 increase in mean regional income during teen years will increase the proportion of liquid assets held in stocks by 53.8 percentage points. The result is not significantly different than the PSID Depression sample results. The impact of macroeconomic conditions in childhood is significant for Depression survivors and does last until retirement age.

Table 3: Full Sample: Percentage of Liquid Assets Held in Stocks

	(1)	(2)
	PSID 1984-2007	SIPP 1984-1990
<u>State Income 0-6</u> 1000	5.213 (3.934)	1.833 (5.310)
<u>State Income 7-12</u> 1000	-6.439 (3.959)	4.957 (4.510)
<u>State Income 13-18</u> 1000	6.246** (2.653)	-4.829 (3.610)
N	13,417	10,763
Household characteristics	x	x
Survey year dummies	x	x
Age dummies	x	x
Birth year dummies	x	x
State of residence dummies	x	x
Birth state dummies	x	x

[†] Household characteristic controls include everything listed in table 2 except value of liquid assets

^{††} Robust Standard errors in parentheses (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$)

Table 4: Depression Sample: Percentage of Liquid Assets Held in Stocks

	(1)	(2)	(3)
	PSID 1984-2007	SIPP 1984-1990	HRS 1992
<u>State Income 0-6</u> 1000	23.949*** (8.062)	-7.11 (6.262)	18.737 (13.482)
<u>State Income 7-12</u> 1000	-17.968** (7.670)	-2.313 (5.171)	-15.858 (7.277)
<u>State Income 13-18</u> 1000	22.214** (9.095)	-3.628 (4.974)	53.797* (27.376)
N	2,860	4,297	932
Household characteristics	x	x	x
Survey year dummies	x	x	
Age dummies	x	x	
Birth year dummies	x	x	x
Current state dummies	x	x	x
Birth state dummies	x	x	x

† Household characteristic controls include everything listed in table 2 except value of liquid assets

†† Robust Standard errors in parentheses (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$)

5.3 Substitution into Savings Accounts

The results presented in this paper so far suggest that people who were exposed to deviations in state income from both long run averages and national trends are investing less of their money in stocks. Previous research has suggested that negative experiences with the macro economy lead individuals to be more pessimistic about their own stock returns (Malmendier and Nagel, 2011). If individuals increase their distrust of the economy, one would think investment would increase in safe assets that are less impacted by macroeconomic fluctuations, such as low-interest savings accounts in banks. Therefore, I estimate equation (1) using percentage of liquid assets held in savings accounts as an outcome variable.

Estimates from the full sample provide evidence of substitution from stock investments to savings accounts (Table 5). The PSID results suggest that a \$1000 increase in average state income during late childhood will decrease the percentage of liquid assets held in savings by 2.64 percentage points. This is smaller in magnitude than the stock market effect, suggesting that savings accounts are not a perfect substitute for stock investments. Individuals are diversifying their asset portfolio by purchasing another relatively low-risk asset, government bonds.

Estimates suggest that there is no impact of average state income during childhood on savings account balances for the Depression subsamples of the PSID and SIPP and HRS cross-section. This is likely because in these samples, the Depression cohorts are older and the childhood effect has faded as they redistribute their assets in preparation for retirement.

Table 5: Full Sample: Percentage of Liquid Assets Held in Savings Accounts

	(1)	(2)
	PSID 1984-2007	SIPP 1984-1990
<u>Average State Income 0-6</u>		
1000	-1.937 (2.822)	0.505 (2.997)
<u>Average State Income 7-12</u>		
1000	2.263 (2.514)	5.951** (2.925)
<u>Average State Income 13-18</u>		
1000	-2.640* (1.525)	-4.712** (2.314)
N	48,743	28,179
Household characteristics	x	x
Survey year dummies	x	x
Age dummies	x	x
Birth year dummies	x	x
Current state dummies	x	x
Birth state dummies	x	x

† Household characteristic controls include everything listed in table 2 except value of liquid assets

†† Robust Standard errors in parentheses (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$)

Table 6: Depression Sample: Percentage of Liquid Assets Held in Savings

	(1)	(2)	(3)
	PSID 1984-2007	SIPP 1984-1990	HRS 1992
<u>State Income 0-6</u> 1000	-30.442*** (6.807)	5.496 (4.987)	0.06 (10.77)
<u>State Income 7-12</u> 1000	11.003 (9.124)	-0.0176 (3.967)	1.227 (14.176)
<u>State Income 13-18</u> 1000	-19.446*** (6.705)	-2.040 (4.711)	-36.484 (17.633)
N	8,256	10,312	2,506
Household characteristics	x	x	x
Survey year dummies	x	x	
Age dummies	x	x	
Birth year dummies	x	x	x
Current state dummies	x	x	x
Birth state dummies	x	x	x

† Household characteristic controls include everything listed in table 2 except value of liquid assets

†† Robust Standard errors in parentheses (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$)

5.4 Home Ownership

As property values were increasing in the U.S. between 1940 and 1980, it is logical that property would be considered a safer asset than stock investment. One might think that those who lived through hard times in childhood would want to invest in a safe asset that would shelter their money during the next recession. Therefore I look at various measures of property investment-home ownership in general, mortgages, home value, and home equity. If those who experienced adverse conditions in childhood are more likely to invest in property, we should see a negative relationship between average state income and home ownership.

However, an increase in average state income during childhood does not impact the probability of home ownership in adulthood for the PSID sample or the SIPP sample. Regressions using the HRS data set also produce this null home ownership result. As the Great Depression survivors in my sample are well into middle age by the 1980s, it is likely that the life cycle effect dominates the childhood macroeconomic experiences effect on home ownership. It is well known that the home ownership rate increases as age increases. According to the US Census, the home ownership rate for people age 55-64 has been 75-80% for the last 20 years.

Table 7: Full Sample: Home Ownership

	(1)	(2)
	PSID 1984-2007	SIPP 1984-1990
<u>State Income 0-6</u> 1000	-0.0236 (0.0269)	-0.0095 (0.0272)
<u>State Income 7-12</u> 1000	-0.0017 (0.0345)	-0.0110 (0.0206)
<u>State Income 13-18</u> 1000	0.0042 (0.0253)	0.0234 (0.0226)
N	48,743	47,369
Household characteristics	x	x
Survey year dummies	x	x
Age dummies	x	x
Birth year dummies	x	x
State of residence dummies	x	x
Birth state dummies	x	x

† Household characteristic controls include everything listed in table 2 except value of liquid assets

†† Robust Standard errors in parentheses (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$)

There is evidence that those who grew up in states that were hit worse during the Depression are making different decisions regarding property investment. I find evidence in both the PSID and SIPP samples that individuals who experienced worse macroeconomic conditions earlier in life purchase homes earlier and invest more money into home equity.

5.4.1 Year Bought House

Results from the SIPP suggest that individuals exposed to \$1000 lower average state income during late childhood purchase homes 4.2 years earlier (Table 8). I find similar estimates of year bought house in the HRS sample (5.4 years), but the result is not robust to inclusion of all three of my fixed effects (Table 9).

Table 8: SIPP Result: Dependent Variable: Year Bought House

	(1)	(2)	(3)	(4)
<u>State Income 0-6</u> 1000	-0.145 (1.099)	1.516 (1.268)	1.511 (1.347)	1.511 (1.347)
<u>State Income 0-6</u> 1000	-2.390 (1.462)	-1.239 (1.576)	-1.481 (1.595)	-1.481 (1.595)
<u>State Income 0-6</u> 1000	2.251* (1.212)	4.320*** (1.660)	4.166*** (1.516)	4.166*** (1.516)
N	24,902	24,902	24,902	24,902
Household characteristics	x	x	x	x
Survey year dummies	x	x	x	x
Age dummies				x
Birth year dummies	x	x	x	x
State of residence dummies			x	x
Birth state dummies		x	x	x

† Household characteristic controls include everything listed in table 2 except value of liquid assets

†† Robust Standard errors in parentheses (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$)

5.4.2 Home Equity

I find that in the SIPP, individuals invest more in home equity (\$17,619) when exposed to lower average state income during childhood. The estimated impact is similar for both the PSID and SIPP depression samples. This is consistent with the hypothesis that those exposed to more severe state conditions in childhood invest earlier in safe assets. After living through difficult times in childhood and observing increasing property values over the 1940s

Table 9: HRS Results: Dependent Variable: Year Bought House

	(1)	(2)	(3)	(4)
<u>Average Regional Income 0-6</u> 1000	0.434 (1.306)	0.330 (3.662)	3.983* (1.738)	0.561 (2.018)
<u>Average Regional Income 7-12</u> 1000	-0.737 (1.438)	4.846 (4.043)	2.808 (2.164)	4.462 (4.136)
<u>Average Regional Income 13-18</u> 1000	0.157 (1.736)	7.458 (5.763)	5.396** (1.724)	6.948 (3.796)
N	2068	2068	2068	2068
Household characteristics	x	x	x	x
Birth year dummies		x		x
Region of residence dummies			x	x
Birth region dummies		x	x	x

[†] Household characteristic controls include everything listed in table 2 except value of liquid assets

^{††} Robust Standard errors in parentheses (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$)

and 1950s, individuals will view property as something that is somewhat insulated from the fluctuations of the business cycle. Once they begin to accumulate wealth, they will be more attracted to purchasing property and paying it off quickly, as they will expect property to continue to appreciate. This impact is not robust to the full PSID sample or the HRS sample.

Table 10: SIPP Result: Dependent Variable: Home Equity

	(1)	(2)	(3)	(4)
<u>State Income 0-6</u> 1000	17098.1*** (6366.6)	-3917.6 (7039.9)	-2004.7 (7267.9)	-2004.7 (7267.9)
<u>State Income 7-12</u> 1000	5402.2 (7865.1)	-2159.6 (8228.2)	3096.7 (7518.9)	3096.7 (7518.9)
<u>State Income 13-18</u> 1000	-1151.1 (6494.3)	-18404.1** (8265.3)	-17619.1** (7076.4)	-17619.1** (7076.4)
N	8819	8819	8819	8819
Household characteristics	x	x	x	x
Survey year dummies	x	x	x	x
Age dummies				x
Birth year dummies	x	x	x	x
State of residence dummies			x	x
Birth state dummies		x	x	x

[†] Household characteristic controls include everything listed in table 2 except value of liquid assets

^{††} Robust Standard errors in parentheses (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$)

5.5 Business Ownership

An increase of \$1000 in average state income during ages 13-18 will also increase the likelihood of owning one's own business by 18 percentage points (Table 11). This goes along with the story that people who grew up in a better off state are more willing to take on risk. Business ownership requires one to take on a substantial amount of risk. This is only present in the Depression sample.

There is no impact of childhood macroeconomic conditions on business ownership in HRS data or in the SIPP panel. Several reasons exist for why this is the case. The businesses in the SIPP may be qualitatively different than businesses in the PSID, as business equity is much lower in the PSID data than in the SIPP. One of the potential reasons for lower levels of equity is that PSID businesses may be solo-owned, so one's own preferences and experiences would influence the decision more than in a partnership.

There is no impact of childhood income on business ownership for the retiree sample. As many of the Depression survivors are retired by 1992, as someone who was born in 1930 will be 62 in 1992. The PSID sample and the HRS sample both contain a higher concentration of observations of Depression survivors after retirement. Retired individuals are not asked about whether they owned their own business before they retired. Additionally, a similar

argument to the home ownership effect may be used. Perhaps the life-cycle effect dominates the childhood macroeconomy effect. As one gets older and has more experience, one may feel more confident to set out on their own and start their own business. There is empirical evidence that this is the case; high growth startups are twice as likely to be founded by someone over 55 than people 20 to 34 (Wadhwa, 2013). Therefore we will see more people starting their own business at a later age.

Table 11: Depression Sample: Business Ownership

	(1)	(2)	(3)
	PSID 1984-2007	SIPP 1984-1990	HRS 1992
<u>State Income 0-6</u> 1000	-8.85 (7.15)	-4.17* (2.10)	-2.71 (8.67)
<u>State Income 7-12</u> 1000	6.05 (6.73)	-3.30 (2.37)	-1.64 (7.76)
<u>State Income 13-18</u> 1000	18.07** (8.86)	0.76 (2.73)	3.56 (12.10)
N	8,256	17,521	2,506
Household characteristics	x	x	x
Survey year dummies	x	x	
Age dummies	x	x	
Birth year dummies	x	x	x
State of residence dummies	x	x	x
Birth state dummies	x	x	x

[†] Household characteristic controls include everything listed in table 2 except value of liquid assets

^{††} Robust Standard errors in parentheses (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$)

5.6 Investment for Retirement

I find that state income during childhood has no impact on the value of one's IRA account, both in mid-career and near retirement (1992). However, this does not mean that childhood macroeconomic experiences have no role in how one decides to save for retirement. The data that I use does not provide information about the composition of individual IRA accounts. As there are various types of IRA accounts that invest ‘mostly in stocks’, ‘split between stocks and bonds’, or ‘mostly in interest-bearing assets’, it is possible that Great Depression survivors choose a different type of IRA account than others due to their childhood experiences.

6 Robustness Checks

6.1 Does Variance of State Income During Childhood Matter?

High variance of state income during childhood will lead an individual to expect the market to be volatile, and thus might make them more risk averse. Therefore, I estimate equation (1) with an added control for variance of state income during childhood. One specification controls for mean-adjusted standard deviation of state income during entire childhood and a second specification controls for standard deviation of state income during the three different periods of childhood.

Results from the PSID full sample suggest that a one unit increase in mean-adjusted standard deviation over the entire childhood will lead to a 19 percentage point decline in percentage of liquid assets held in stocks. Standard deviation is insignificant when I control for variance during the three different periods of childhood.

This result is not robust to the SIPP full sample or Depression subsamples. Average income levels during childhood matter more in later in life decision making. This makes sense, as persistently low state income would be more memorable than a brief dip in state income followed by a quick recovery.

6.2 Nonlinear Effects

Allowing average of state income during childhood to impact investment decisions quadratically produces a null result in the full sample. Table 14 contains estimates of the average marginal effects for the SIPP and PSID full samples. This may be because it is more difficult to estimate individual parameters for six different measures of state income during childhood. I will show in the next section that allowing for a much more flexible nonlinear functional form leads to results that are significant and similar to the linear model results.

The effect of average state income on asset holdings by the Depression subsamples remains significant (Table 15). When I include all of the fixed effects in my specification, an increase of \$1000 to average state income during teenage years will increase percentage liquid assets in stocks by 19.74 percentage points (significant at the 99% level). The HRS estimate remains significant as well. An increase in regional income of \$1000 during late childhood will increase percentage liquid assets held in stocks by 38.58 percentage points.

Table 12: Full Sample: Percentage of Liquid Assets Held in Stocks controlling for Variance in State Income During Childhood

	(1)	(2)
	PSID 1984-2007	SIPP 1984-1990
<u>SD State Income 0-18</u>		
Average State Income 0-18	-19.0712**	-0.00259
	(8.227)	(0.00466)
<u>State Income 0-6</u>		
1000	0.885	-1.531
	(2.968)	(1.459)
<u>State Income 7-12</u>		
1000	-3.443	-0.477
	(2.651)	(1.831)
<u>State Income 13-18</u>		
1000	4.221***	1.482
	(1.485)	1.395
N	48,743	31,763
Household characteristics	x	x
Survey year dummies	x	x
Age dummies	x	x
Birth year dummies	x	x
State of residence dummies	x	x
Birth state dummies	x	x

† Household characteristic controls include everything listed in table 2 except value of liquid assets

†† Robust Standard errors in parentheses (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$)

Table 13: Depression Sample: Percentage of Liquid Assets Held in Stocks controlling for Variance in State Income During Childhood

	(1)	(2)	(3)
	PSID 1984-2007	SIPP 1984-1990	HRS 1992
<u>SD State Income 0-18</u>			
Average State Income 0-18	-3.968 (18.278)	0.0068 (0.010)	2.293 (26.414)
<u>Average State Income 0-6</u>			
1000	24.953*** (7.075)	-0.177 (3.277)	-2.531 (9.322)
<u>Average State Income 7-12</u>			
1000	-9.402 (8.438)	-1.646 (3.166)	0.648 (7.800)
<u>Average State Income 13-18</u>			
1000	18.383*** (7.044)	-0.180 (2.770)	41.179* (20.035)
N	8,256	11,235	2,506
Household characteristics	x	x	x
Survey year dummies	x	x	
Age dummies	x	x	
Birth year dummies	x	x	x
State of residence dummies	x	x	x
Birth state dummies	x	x	x

† Household characteristic controls include everything listed in table 2 except value of liquid assets

†† Robust Standard errors in parentheses (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$)

Table 14: Full Sample: Average Marginal Effects of Childhood State Income on Percentage of Liquid Assets Held in Stocks

	(1)	(2)
	PSID 1984-2007	SIPP 1984-1990
<u>State Income 0-6</u>		
1000	3.945 (2.776)	-1.007 (1.417)
<u>State Income 7-12</u>		
1000	-5.069 (3.112)	0.407 (1.556)
<u>State Income 13-18</u>		
1000	3.887 (2.497)	1.607 (1.482)
N	48,743	47,369
Household characteristics	x	x
Survey year dummies	x	x
Age dummies	x	x
Birth year dummies	x	x
State of residence dummies	x	x
Birth state dummies	x	x

† Household characteristic controls include everything listed in table 2 except value of liquid assets

†† Robust Standard errors in parentheses (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$)

Table 15: Great Depression Sample: Average Marginal Effects of Childhood State Income on Percentage of Liquid Assets Held in Stocks

	(1)	(2)	(3)
	PSID 1984-2007	SIPP 1984-1990	HRS 1992
<u>State Income 0-6</u> 1000	26.28** (11.93)	-2.78 (3.569)	-11.13 (11.33)
<u>State Income 7-12</u> 1000	-9.154 (7.501)	0.105 (2.839)	7.603 (8.290)
<u>State Income 13-18</u> 1000	19.74*** (5.603)	1.579 (2.853)	38.58** (16.73)
N	8,256	13,395	2,506
Household characteristics	x	x	x
Survey year dummies	x	x	
Age dummies	x	x	
Birth year dummies	x	x	x
State of residence dummies	x	x	x
Birth state dummies	x	x	x

† Household characteristic controls include everything listed in table 2 except value of liquid assets

†† Robust Standard errors in parentheses (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$)

6.3 Flexible Model

In order to allow state income levels at earlier ages as well as state income in adulthood to influence asset allocation decisions, I use a flexible estimation method developed in Malamendier and Nagel (2011). This specification allows me to estimate weights for the state income in each year of an individual's life. For each household i in year t , the weighting specification is as follows:

$$A_{it}(\lambda) = \sum_{k=1}^{age_{it}-1} w_{it}(k, \lambda) R_{t-k}, \quad (1)$$

where

$$w_{it}(k, \lambda) = \frac{(age_{it} - k)^\lambda}{\sum_{k=1}^{age_{it}-1} (age_{it} - k)^\lambda} \quad (2)$$

A_{it} is a weighted average of observed state income for every year since birth. The weights (w_{it}) depend on the age at time t , how many years ago the state income was observed (k), and the parameter λ which allows for the weighting function to take different shapes. λ is estimated empirically. The weights can be monotonically increasing in k , decreasing in k , or flat ($\lambda = 0$). A flat weighting function means that $A_{it}(\lambda)$ will be the average of state income since birth; thus observations of state income during childhood hold the same weight as observations of state income in adulthood. The results presented in previous sections suggest that this is not the case, as the coefficients for state income during early and middle childhood are almost never statistically significantly different from zero.

As my results above suggest that state income during late childhood holds more weight in decisions than state income earlier in childhood, I expect the weight to be decreasing in lag k ($\lambda > 0$). This means that observations from earlier in life hold less weight than more recent observations. The function will be concave if $0 < \lambda < 1$, linear if $\lambda = 1$, and convex if $\lambda > 1$. If the weights are convex and decreasing in the lag k , then this means that the importance of state income decreases rapidly for recent observations, but state income observations from earlier in life hold relatively similar weight in decision-making. My results in previous sections do not provide any guidance on the concavity of the weighting function.

The following regression demonstrates how I estimate the weights and the sensitivity to observed macroeconomic shocks in the past.

$$outcome_{it} = \alpha + \beta_1 A_{it}(\lambda) + X_i \beta + \gamma_{bs} + \phi_{cs} + \lambda_{by} + \epsilon_i, \quad (3)$$

where $A_{it}(\lambda)$ represents the weighted sum of observed state income throughout an individual's life, X is a vector of socio-demographic controls including race, family income, education, marital status, and number of children. γ_{bs} are birth state fixed effects that control for

unobserved shocks related to growing up in a particular state, ϕ_{cs} are current state fixed effects that control for unobserved shocks related to residing in a particular state during the survey date, and λ_{by} are birth year fixed effects that control for national shocks for a particular age cohort. As $A_{it}(\lambda)$ is a nonlinear function, I use nonlinear estimation methods. I choose the parameters to minimize the sum of squared residuals for continuous dependent variables and MLE for binary dependent variables.

In order to determine whether early-in-life experiences carry weight in adult asset allocation decisions, I will vary the starting point of observation of state income in my regression. I will estimate parameters using state income for ones entire life, starting 10 years after birth, and finally starting 20 years after birth. Results should not change when I exclude observed state income earlier in childhood if this period has no weight in adult decision making.

6.4 Flexible Model Results

My preliminary results give me an estimate of 1.34 for λ and 0.75 for β_1 . This implies that for a 41 year old, a change of \$1000 in state income when you were 18 years old will lead to an increase in percentage of liquid assets held in stocks by 1.32 percentage points, which is similar to the results presented earlier in the paper. As in Malmendier and Nagel (2011), the weighting function is convex and decreasing in the lag k .

7 Conclusion

The evidence presented in this paper demonstrates that state macroeconomic conditions impact financial decisions in adulthood. Both average and standard deviation of state income during childhood has an influence on decision-making. Individuals who begin their lives by observing an economic downturn remain pessimistic and risk averse with respect to investments over the course of their lifetime. This results in decreased investment in the stock market, increased investment in low-interest savings accounts, and increased investment in home equity. I find that individuals put more weight on experiences from their teenage years than earlier periods of childhood, but earlier experiences may hold some positive weight in decision making.

The magnitude of the impact of the Depression on risk-taking is significant. An increase of \$1000 in average state income over teenage years will increase the percentage of liquid assets held in stocks by about 23 percentage points if one grew up during the Great Depression. Due to the greater return on risky assets, this has impacted the growth of Depression survivor's wealth. A portfolio that has the majority of money in savings accounts and government

bonds does not have as much potential for growth as one that contains investments in stocks or mutual funds.

This study has significance for future generations. The children of the Great Recession may behave similarly to the children of the Great Depression. It has been argued that it had a large impact on young people. They will possibly exhibit similar risk-averse, pessimistic behavior in adulthood.

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Appendix A Summary Statistics

Table 16: PSID Variable Summary Statistics

	N	Mean	SD	Min	Max
% of Liquid Assets in Stocks	57,272	16.47	31.43	0	100
% of Liquid Assets in Savings	57,272	81.45	33.45	0	100
Value Stock Holdings	57,272	29,691	368,701	0	4.00e+07
Total Wealth	57,272	145,937	772,245	-898,150	4.98e+07
Home Owner	57,272	.65	.48	0	1
Value Home Equity	37,667	92,570	150,474	9	5,800,000
Business Owner	57,272	.14	.35	0	1
Business Value	8,092	261,463	1,188,217	0	4.00e+07
ESI_i	57,272	2.41	.82	.38	5.83
SD ESI_i	57,272	162.52	90.53892	10.364	644.794
MSI_i	57,272	2.693729	.8985794	.3774062	6.74884
SD MSI_i	57,272	185.0541	100.1353	10.3913	799.928
LSI_i	57,272	3.005386	.9883094	.3774062	7.994904
SD LSI_i	57,272	194.2321	101.1715	10.86469	698.8767
Family Income	57,272	61,155	79,322	0	5,500,000
Years Education	49,272	13	2	1	17
# Children	57,272	.89	1.12	0	9
Female	57,272	.31	.46	0	1
Black	57,272	.27	.44	0	1
Other Race	57,272	.003	.06	0	1
Married	57,272	.62	.49	0	1
Age	57,272	41	15	18	89
Birthyear	57,272	1957	16	1918	1988

Table 17: SIPP Variable Summary Statistics

	count	mean	sd	min	max
% Liquid Assets in Stocks	41,553	9.80	24.51	0	100
% Liquid Assets in Savings	34,281	59.35	39.10	0	100
Stock Market Participation	54,568	.40	.49	0	1
Home Owner	54,568	.56	.50	0	1
Home Equity	8,819	53,528	63,074	-20,000	300,000
Mortgage Principal	30,154	20,082	31,475	0	150,000
Year Bought House (1990)	4,119	1981	7	1952	1990
Business Owner	41,553	.09	.29	0	1
Business Equity	3,542	67,841	108,810	-400,000	754,000
ESI_i	54,199	2.02	.84	.38	4.54
SD ESI_i	49,446	152	93	10	799
$MSI_{i,c}$	54,265	2.24	.84	.38	4.85
SD MSI_i	49,509	165	97	10	699
LSI_i	54,335	2.50	.83	.37	5.24
SD LSI_i	49,584	197	103	2.64	729
Monthly Income	54,568	2,884	2,017	0.25	23075
Years Education	54,427	12.91	2.82	1	18
# Children	47,693	1.23	1.61	0	7
Female	54,568	.46	.49	0	1
Black	54,568	.09	.29	0	1
Married	54,568	.62	.49	0	1
Age	54,568	41.37	13.92	18	70
Birth Year	54,568	1945	15	1918	1973

Table 18: HRS Variable Summary Statistics

	count	mean	sd	min	max
Average Regional Income 0-17	2506	1.83	.45	.59	3.28
Average Regional Income 0-6	2506	1.51	.51	.53	2.91
Average Regional Income 7-12	2506	1.90	.44	.51	3.50
Average Regional Income 13-17	2506	2.14	.45	.61	3.93
Yearly Income	2754	41457	240265	234	1.24e+07
Hispanic Race	2754	.06	.23	0	1
African American	2754	.13	.34	0	1
Other Race	2754	.005	.074	0	1
Married	2754	.81	.39	0	1
# Children	2754	.66	1.65	0	14
Age	2754	54.57	4.94	35	73
Years of Education	2754	13.89	2.78	0	17
Birth Region	2750	5.01	2.79	1	11
Current Region	2754	4.82	2.34	1	9
% Liquid Assets in Stocks	2754	19.85	31.81	0	100
Balance of Savings Account	2738	16483	69390	0	2500000
Home Owner	2754	.80	.40	0	1
Own Business	2754	0.13	0.33	0	1