The Effects of Graduating from College during a Recession on Consumption and Asset Holding

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Abstract

Recent studies reveal that graduating from college during a recession has persistent negative effects on labor market outcomes—a phenomenon called the scarring effect. This study assesses the welfare impact of the scarring effect beyond labor market outcomes, by analyzing consumption and asset-holding behaviors. Scrutiny of the Current Population Survey and Consumer Expenditure Survey reveals that, despite a significant decline in earnings, business cycle conditions at the time of entry into the labor market does not affect expenditures or asset holdings; instead, young college graduates who face a recession tend to stay with their parents. These results suggest that the cohort-specific negative shock is absorbed by an implicit inter-generational insurance mechanism; the scarred cohort postpones the timing of leaving the parents' household to secure the same consumption and asset-holding levels as that of other cohorts.

Keywords: Scarring effect, Business cycle, Consumption, Asset holding, Cohort

JEL classification: E21

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1 Introduction

The surge of the unemployment rate after the 2008 financial crisis directly hit young people who were graduating from schools and were looking for jobs in many developed countries. Recent studies reveal that the cohort graduating from school in a bad economy persistently suffers for a long time in terms of employment status and earnings because of the loss of training opportunities or difficulty in changing jobs hampered by information asymmetry in the labor market: the phenomenon called the scarring effect.[1] Few studies, however, empirically analyze the welfare consequence of the scarring effect. Do the members of the scarred cohort suffer from less lifetime consumption? This paper contributes to the literature by examining the consumption and asset-holding behaviors of the members of the scarred cohort.

Quantifying the persistence of the temporary shock at school graduation on subsequent labor market outcomes, or more broadly speaking, on lifetime welfare, has a significant implication for the benefit of mitigating the business cycle fluctuation. Lucas (1987) first argues that the welfare benefit of smoothing the business cycle is small based on the calibrated curvature of the utility function of representative agents in an economy with complete markets where all idiosyncratic shocks are insured (see Barlevy (2005) for the subsequent development of the literature). Krebs (2007), however, demonstrates that an uninsurable and persistent labor market shock creates a substantial cost of the business cycle, because an agent experiencing job displacement should suffer from substantial consumption decline, contrary to the modest consumption decline of a representative agent in a complete market.

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[1]The most relevant studies to ours are Kahn (2010) and Genda et al. (2010). Kahn (2010) established that graduating from college during a recession has a persistent negative effect on earnings, using data of white men in the NLSY 79, and Genda et al. (2010) find a similar effect using the Current Population Survey for white men with at least some college education. The scarring effect is observed in many other countries, such as Canada (Oreopoulos et al., 2012), Japan (Genda et al., 2010), Austria (Brunner and Kuhn, 2014), and Norway (Raaum and Røed, 2006). Kawaguchi and Murao (2014) find stronger scarring effect in economies with more rigid labor market institutions using cross-country panel data.

By the same token, the absence of a market to insure the cohort-specific labor market risk entails a substantial welfare loss from the scarring effect; thus the scarring effect could create a substantial cost for the business cycle. Indeed, the absence of an insurance market is arguably more relevant to the cohort-specific adverse shock caused by the school graduation in a recession than the adverse shock caused by workers' job loss in general, because fresh graduates from schools are typically not covered by the unemployment insurance – a crucial insurance mechanism against adverse labor market shocks.

Whether a cohort-specific labor market shock results in a cohort-specific welfare loss is a controversial issue. While the recession like the 2008 financial crisis negatively affects the cohort that graduates from schools in a persistent way, Miyazaki et al. (2010) argue that the cohort specific shock is partially shared with other cohorts through financial transactions; the cohort hit by recession can purchase asset liability from other cohorts at lower prices. Glover et al. (2011) further argues that the fall of asset prices in such an event could benefit youth; the youth sells consumption goods at higher price to the elderly in exchange of asset liability through asset devaluation in a overlapping generation framework. They calibrate the model economy to the US economy and demonstrate that the youth is better off because the welfare gain from asset-price decline dominates the welfare loss from wage decline. These arguments offer intriguing perspectives, but Hur (2014) challenges this view, because incorporating a realistic liquidity constraint in the model prevents the proposed mechanism from working; the youth cannot purchase an asset liability to reap the higher return. Therefore, whether the financial market absorbs the cohort-specific labor market shock is an empirical question.

Intergenerational transfers through co-residence with parents or family are another way to protect youth consumption from a cohort-specific labor market shock. Card and Lemieux (2000) report that Canadian and US youths accommodate negative local labor market shock by co-residing with their parents. Co-residence with parents provides young people with housing and other services in kind at lower costs and secures their consumption. Therefore, the young people who graduate from school during a recession may stay with their parents

longer than other young people who do not graduate during a recession.

This study examines the impact of the labor market condition, approximated by the state unemployment rate, on subsequent labor market outcomes, household formation, consumption, and asset holding among college-graduate white men in the United States using the following two data sets: the Current Population Survey and the Consumer Expenditure Survey. The analysis first replicates significant and persistent effects of the labor market condition at college graduation on subsequent labor market outcomes; graduating college when the state unemployment rate is one percentage point higher decreases real annual earnings by 3.4% during the first three years after graduation. This negative effect fades away gradually and becomes statistically insignificant 12 years after graduation. The cohort hit by the negative shock absorbs this negative income shock by cohabiting with parents after graduation; a one-percentage-point higher state unemployment rate increases the probability of cohabitation with parents by 0.7 percentage point after 1-3 years and 0.8 percentage point after 4-6 years. This cohabitation, presumably accompanied with in-kind transfers from parents to children, seems to mitigate the adverse impact of labor market shock on consumption. Furthermore, a household whose head is hit by a higher state unemployment rate at college graduation does not reduce the equivalent scale expenditure adjusted for household size.

Regarding asset-holding behaviors, we find no evidence that the labor market condition at entry to the labor market affects the amount of assets in bank or security accounts; at least, members of the scarred cohort hold no more assets than other cohorts. This finding apparently does not corroborate with the claims made by Miyazaki et al. (2010) and Glover et al. (2011), although we cannot rule out the possibility that the asset price appreciation may take time so that the scarred cohort reaps the higher asset return. In sum, the insensitivity of expenditure to the labor market condition at college graduation suggests that the negative labor market shock specific to a cohort is shared by other cohorts, at least partly through direct intergenerational transfer from parents.

2 Data

2.1 Current Population Survey

We use the March supplement of the Current Population Survey (March CPS) to confirm the effect of the labor market condition at graduation on earnings and employment status in subsequent years, which is already found in existing studies, and to examine the effect on household structure, such as marriage, co-residence with parents, and the probability of being the reference person. The March CPS is a cross-sectional survey that covers the non-institutionalized population in the United States. We use data from the 1996-2013 surveys.[2] The analysis sample includes white non-Hispanic men aged 20 or older who have some college or higher educational background with 1-18 years of potential labor market experience. Individuals enrolled in college or graduate school are excluded. The remaining sample size is 139,552.

Table 1 reports the descriptive statistics of the variables used in the analysis. The average age is 32, and the average year of graduation is 1994. The real annual earnings is the annual earnings divided by the consumer price index normalized to 1996 price, and the average is about $45,000. 92.0% of the sample are currently employed, and 79.5% are employed fulltime. An average worker works 44.4 hours per week.

To explore the effect on household structure, we construct the following variable using the CPS's household information: dummy for being currently married, number of adults in the household, dummy for residence with parents. Also, though not perfect, we use the dummy variable for being the household reference person as a proxy for being the household head. The marriage rate is 62%, and the mean number of adults is about 2. 9.4% of the sample live with at least one parent, and the share of the reference person is 60%.

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[2]Although data from the March CPS are available for earlier years, the availability of the CES data is limited to the period of 1996-2013. Thus, we limited our sample from the CPS to those who were surveyed during this period, so that both datasets cover the same population.

2.2 Consumer Expenditure Survey

We use the Consumer Expenditure Survey (CEX) to examine the effect of labor market condition at entry on subsequent outcomes, including household structure, equivalent scale expenditure, food expenditure share, house ownership, balance of checking, and savings and security accounts. The CEX is a rotating panel data survey, interviewing randomly selected households for five consecutive quarters; the first-round households join the survey and the fifth-round households exit from the survey in each quarter. We draw on family and member files of interview quarterly files between 1996 and 2013. The unit of observation is the individual. Like the March CPS, the analysis sample includes white non-Hispanic men aged 20 or older who have some college or higher educational background with 1-18 years of potential labor market experience. Individuals enrolled in college or graduate school are excluded. The analysis sample size is 53,902. Table 2 tabulates the descriptive statistics of the analysis sample. The mean age is around 32 years old, the marriage rate is around 60%, and the mean number of adults is about 2. About 60% of the analysis sample is a reference person.

The sample with 53,902 persons includes 32,432 reference persons who own or rent the home. For this group of people, we examine the household-level expenditure per quarter. The quarterly household total expenditure is divided by the Organisation for Economic Co-operation and Development (OECD) equivalent scale household size, 1+0.5(the number of adults-1)+0.3 the number of children, to adjust for the difference in household sizes. According to Table 2, the average equivalent scale expenditure is $4,524 per quarter, and the average equivalent scale household size is around 1.6. We also calculate food share expenditure, the share of food expenditure among the total expenditure, as a measure of living standard; given income elasticity of food expenditure is less than unity, the food expenditure share declines as the total expenditure increases. The average food expenditure share is around 15%. House ownership, another measure of living standard, is slightly above 60%. Means of these variables are quite similar to those from the CPS data reported in

Table 1.

The CEX asks respondents about their financial situation in the fifth round of the survey. The sample size becomes 1/4 of the sample for the expenditure analysis, given that respondents start answering expenditure questions from the second round of the quarterly survey. Among the 8,101 reference persons responding to the fifth round of the survey, 5,271 persons give a valid response to the question asking about the balance of the checking and saving accounts on the last day of the last month of the survey. Among the people who give valid responses, 93% report a positive balance in checking and saving accounts. In contrast, among the 8,101 reference persons, 1,702 people give a valid response to the question asking about the balance of security accounts for stocks, bonds, and mutual funds on the last day of the last month of the survey. Among them, 1,700 people report positive numbers. Since it is unlikely that 99% of the households actually own a positive amount of assets in their security accounts, only respondents with a positive balance in the security account seem to have given valid responses to the question.

2.3   State unemployment rates in the year of graduation

Ideally, we would like to define a cohort as a group of people who graduated college in the same year and state, and assign each person the unemployment rates in the state and year of graduation based on his cohort. Since both the March CPS and the CEX are lacking the exact year of graduation, however, we must compute the year of graduation from the year of birth and educational background as follows: for those with a bachelor's degree, year of graduation = year of survey – (age – 22), and for those without a bachelor's degree but with some college education, year of graduation = year of survey – (age – 20). This corresponds to the year of graduation for a person who entered elementary school at age 6 and went straight to the highest grade. Also, we have to use the state of current residence as the best available proxy for the state of residence at entry.[3]

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[3]This definition of year and state of entry is exactly the same as the one used by Genda et al. (2010).

We use state unemployment rates published by the Bureau of Labor Statistics, which is based on the monthly Current Population Survey. Since our data cover those who had 1-18 years of potential experience in the survey years of 1996-2013, the year of graduation of our analysis sample ranges from 1978 to 2012. The mean of state unemployment rates during this period is 6.05%, and their standard deviation is 2.11%. Since we control for graduation year- and state- fixed effects, our identification of the effect of the state unemployment rate hinges on the variation net of these fixed effects. The standard deviation of the residual of the state unemployment rate net of year- and state- fixed effects is 1.06%, which is about half of the standard deviation of the raw series.

3 Empirical Model to measure the effects of the initial labor market condition on subsequent outcomes

We estimate the effect of local labor market conditions on subsequent labor market outcomes, as well as household structure, expenditure, or asset holdings, up to 18 years after college graduation. We assume that the outcome y of individual i belonging to a cohort c living in state s in year-quarter t is determined by the following linear equation:

$$y_{icst} = \beta_0 + \beta_1 ue_{cs0}exp13_{ct} + \beta_2 ue_{cs0}exp46_{ct} + \beta_3 ue_{cr0}exp79_{ct} + \beta_4 ue_{cs0}exp1012_{ct}$$
$$+ \beta_5 ue_{cs0}exp1315_{ct} + \beta_6 ue_{cs0}exp1618_{ct} + \gamma_{exp} + \delta_c + \zeta_{st} + u_{icst}. \tag{1}$$

The explanatory variable ue_{cs0} is the state unemployment rate at college graduation in state s for cohort c. The dummy variable $expXXYY$ takes one if the cohort c in year t has potential experience between XX and YY years. This specification allows the effect of the initial state unemployment rate on the current outcome to vary with years since graduation, as found in previous studies (Genda et al., 2010; Oreopoulos et al., 2012). The γ_{exp} captures fixed effects corresponding to each year of experience, ζ_{st} captures the state $\times$ year-quarter fixed effects,

including the current labor market condition of the state. Conditioning on these fixed effects, we assume that the error term u_{icst} is uncorrelated with explanatory variables. We estimate the model coefficient using OLS and estimate the associated standard errors allowing for clustering within state s. This clustering robust standard error allows for correlation of u_{icrt} within a cell created by $c \times r \times t$, as pointed out by Moulton (1990), as well as the serial correlation of the state specific shock to address the problem articulated by Bertrand et al. (2004).

4   Estimation results

4.1   Effects on subsequent labor market outcomes

Before examining the effect on household structure and consumption behaviors, let us check whether graduating during a recession has significant negative effects on labor market outcomes for the cohorts we analyze. This is important, because our sample covers much younger cohorts than the existing studies in the United States (Kahn, 2010; Genda et al., 2010), and it is a priori ambiguous whether the sensitivity of new college graduates to labor market conditions has become weaker or stronger. Here we use the data derived from the March CPS.

Table 3 reports $\beta_1 - \beta_6$ in equation (1), the estimated coefficients of the interaction term between the state unemployment rate at college graduation and dummies for potential experience group. Column (1) shows that unemployment rate at entry has a persistent negative effect on earnings, which lasts about 12 years. The size and persistence of the effect are similar to those reported by Kahn (2010) and slightly stronger than that reported in Genda et al. (2010). In contrast, as shown in Columns (2)-(3), the effect on employment is negligible, except that full-time employment and hours worked decrease in the first three years. This is also consistent with findings from existing studies.

4.2 Effects on subsequent household structure

Given the persistent negative effect on earnings, this section examines the effects on household structure. Specifically, we examine the effects on the probability of being currently married, number of adults in the same household, co-residence with parents, and the probability of being a reference person.

Column (1) of Table 4 reports the estimated reports $\beta_1 - \beta_6$ in equation (1), the estimated coefficients of the interaction term between the state unemployment rate at college graduation and dummies for potential experience group, on the dummy for being currently married, using data from the March CPS. Estimated coefficients are insignificant, except for the negative effect for 7-9 years of potential experience. This implies that a recession at graduation does not affect the marriage behavior of college-educated men; this is in contrast to findings from existing studies, which indicate that young women who face a worse labor market condition at entry to the labor market marry earlier (Kondo, 2012; Hershbein, 2012).

Next, Column (2) shows the effect on the number of adults in the same household. There is a significantly positive effect in the first 6 years after graduation: A 1%-point increase in the unemployment rate at entry increases the number of adults by 0.05 in the first three years. In other words, a 1%-point increase in the unemployment rate at entry makes 1 in 20 men live with one more adults in the first three years. The size of the effect reduces to 0.03, or 1 in 30 men, in the next three years. Given that the marriage rate does not increase, this increase in the number of adults should be either co-residence with parents or roommates (including unmarried partners). To check the first possibility, Column (3) reports the effects on the dummy for living with at least one parent. A 1%-point increase in the unemployment rate at entry increases the probability of living with parents in the first six years by about 0.7-0.8%. Since living with parents usually means living with two parents, and sometimes also with other siblings, co-residence with parents seems to explain a large part of the effects on the number of adults in the household.

Lastly, Column (4) shows the effect on the probability of the reference person. Since the

household head tends to be a reference person, this variable serves as a proxy for heading a household. A recession at graduation has a significantly negative effect on the probability of being a reference person for the first 6 years. Combined with the positive effect on the co-residence with parents, this result implies that some of the college graduates who face a recession at entry delay the timing of having an independent household.

Since information on household structure is also available in the CEX (except for co-residence with parents), Table 5 Columns (1)-(3) repeat the same analysis using the CEX. Although the point estimates tend to be smaller, we can confirm the same pattern as in Table 4 Columns (1), (2), and (4): no clear and systematic effects on marriage, a significant increase in the number of adults in the household in the first 6 years after graduation, and though not statistically significant in the CEX, a slight decrease in the probability of being a reference person in the first 6 years after graduation.

4.3   Effects on subsequent consumption

This subsection discusses whether graduating from college in a bad economy adversely affects consumption. Capturing the consumption of members of a specific cohort has at least two difficulties in measurement. The first difficulty is to capture consumption from expenditure data of CEX. As articulated by Aguiar and Hurst (2005), consumption and expenditure are different, because consumption goods are produced by a combination of purchased goods and time input. For example, suppose that the food expenditure of members of the scarred cohort is lower than that of other cohort; if they spend more time on cooking, their food consumption level may not be as low as suggested by the food expenditure. The discrepancy of consumption and expenditure could be serious if members of a scarred cohort spend more time on household production than members of other cohorts. Indeed, Aguiar et al. (2013) show that people spend 20-30% of their forgone work hours in household production during the Great Recession. The CPS analysis, however, finds that members of a scarred cohort are equally likely to work and work similar hours compared with other cohorts. Thus, we

do not have a strong reason to doubt that members of a scarred cohort spend more time on household production than other cohorts, though we cannot give a definite answer without examining the time use survey.

The second difficulty is to capture individual consumption from the CEX household expenditure data. The CEX records the household expenditure by items but does not record which household member consumes the item. Literature has identified the resource allocation within a household using expenditure items that allow researchers to link a specific item expenditure with a specific household member, such as clothing; clothing expenditure is classified into men's, women's, and children's clothing in a typical household expenditure survey (Dunbar et al., 2013). We cannot use this methodology, however, because there is no expenditure item that can be specifically linked to the consumption by young adults, who are our research target. To overcome this difficulty, we focus on the expenditure of households headed by young adult college graduates.

Focusing on the consumption behaviors of only households headed by young adult college graduates could cause a sample selection bias, given the endogenous household formation decision; only people who are not severely affected by the local labor market condition at graduation may be included in the sample, and we may fail to find a significant difference in the expenditure of the households headed by young adults who graduated from college in a bad economy and those headed by young adults who graduated in a good economy. The CPS analysis reported in Table 4 Column (4) indicates that the adverse impacts of a high state unemployment rate at graduation on the probability of being the household reference person are observed up to 6 years from college graduation. Thus, we should keep in mind as a caveat that the effect of state unemployment at entry on consumption may be attenuated for up to 6 years from college graduation. Table 5 Column (3) indicates that the state unemployment rate at entry does not affect the probability of household headship in a statistically significant way based on the CEX sample, while this is admittedly not definitive evidence because of lower power due to the smaller sample size than the CPS sample.

Table 6 Column (1) reports the regression coefficients of the log of the equivalent scale consumption on the state unemployment rates at graduation. The equivalent scale consumption is the OECD-equivalent consumption defined as:

$$\frac{\text{The quarterly household total expenditure}}{1 + 0.5 \times (\text{the number of adults} - 1) + 0.3 \times \text{the number of children}}.$$

A 1%-point increase of state unemployment at entry decreases the equivalent scale consumption by 1.6 percent between 1 to 3 years after graduation but increases it after 4 years past graduation, while no other impacts are statistically significant. Column (2) reports the regression results of the log of the OECD-equivalent household size to examine whether the result in Column (1) is driven by the change in household size. The results indicate that a 1%-point increase in the state unemployment rate at graduation increases the equivalent scale household size by 1.5 percent after 1-3 years of graduation; thus the negative impact of state unemployment on the equivalent scale consumption up to 3 years after graduation is driven by the increase in the household size. This result is somewhat puzzling, given that the sample is restricted to households headed by young adult college graduates. Young adults who are hit by negative labor market shock at graduation may live with other young adults, such as siblings. Overall, the analysis of the equivalent scale expenditure does not offer strong evidence that the scarred cohort reduces its consumption level.

Column (3) reports the regression coefficients of food expenditure share on the state unemployment rates at graduation. Given that the food share Engel curve is downward sloping with respect to the total expenditure, the food expenditure share is inversely related to the total expenditure and, presumably, the living standard. None of the estimated coefficients is statistically significant, implying that the state unemployment rate at graduation does not affect the total expenditure. This result reinforces the results based on equivalent scale expenditure that the labor market condition at college graduation does not affect subsequent consumption behavior.

We also examine whether the local labor market condition affects subsequent house own-

ership. House ownership represents both consumption and asset-holding behaviors, because owned house provides both consumption and asset values. Previous empirical studies tend to show a positive correlation between lifetime wealth and house ownership (Henderson and Ioannides, 1987). Column (4) reports the regression coefficients of the house-ownership dummy variable on the same set of explanatory variables. The result implies that the state unemployment rate at graduation does not systematically affect the probability of house-ownership among the households headed by young adults. This result further reinforces our findings that local labor market condition at graduation does not affect the cohort members' subsequent living standard.

4.4 Effects on subsequent asset holding

We next examine the effect of the state unemployment rate at college graduation on subsequent asset holing behaviors. The CEX asks about the asset holding only to the fifth-round respondents. The valid response rates to the financial questions are low, 65.1% for the bank account question and 21% for the security account question. Thus we first examine if the probability of giving a valid answer depends on the state unemployment rate at college graduation to infer a possible sample selection bias. Table 7 Column (1) reports the result of the regression of the dummy variable for valid bank balance information on the explanatory variables. In response to a 1%-point increase in the state unemployment rate at graduation, the probability of a valid response decreases by 2.2 percentage points after 4 to 6 years of graduation, but we do not find a systematic pattern of valid answers for other years. Column (2) reports the regression result of the dummy variable indicating a positive bank account balance on explanatory variables and shows the absence of systematic correlation except for the increase in the probability of having a positive bank account balance after 10 to 12 years of graduation. Furthermore, column (3) regresses the log of bank balance on the explanatory variables to find no systematic patterns. In sum, we do not find evidence that the state unemployment rate at graduation systematically affects the liquidity holding in

bank accounts.

Columns (4) to (6) repeat the same exercise for security accounts. We do not find evidence that the state unemployment rate at college graduation affects the probability of reporting a valid answer, the probability of reporting a positive account balance, or the amount of security holdings. While the evidence in this subsection is not definitive because of a smaller sample size and a high rate of nonresponse, we do not find evidence that corroborates with the hypothesis that the members of a cohort who are hit by negative labor market shock at graduation purchases more financial assets than other cohorts because of a fall in prices.

5 Conclusion

This paper examined the effect of graduating from college in a recession on consumption and asset-holding behaviors. Using data from the CPS, we confirmed that college graduates who entered the labor market in a recession earn significantly less than those who enter the labor market in a usual economic condition, and the effect lasts up to 12 years after graduation, as found in previous studies. Furthermore, scarred cohorts tend to stay with parents longer after graduation, presumably in order to accommodate the earnings loss. Consequently, as revealed by our analysis of the CEX data, their consumption level is not necessarily lower than that of other cohorts who did not graduate in a recession. Their asset-holding levels are also similar to the ones held by college graduates who entered labor market in a usual condition. These results suggest that, although college graduates who enter the labor market in a bad economy suffer from persistent earnings loss, they cope with this adverse income shock by living with parents and presumably receiving in-kind and monetary transfers. Most probably because of this intra-household transfer, they do not lower their consumption level after leaving their parents' home and becoming household heads.

The finding that graduating from college during a recession does not necessarily lower the long-term consumption level has an important implication for the benefit of mitigating the business cycle. Literature has shown that the presence of uninsurable labor market shock

substantially increases the cost of the business cycle, contrary to the famous argument by Lucas (1987); but the results in this study suggest that the risk of being hit by a recession at the time of graduation – a labor market shock that seems difficult to insure because of the lack of access to unemployment insurance – is insured presumably through intergenerational transfers from parents through co-residence. Thus, the results in this study suggest that the benefit of mitigating the business cycle fluctuation can be discussed within a representative agent framework setting cohort-specific labor market shock issue aside. This implication is similar to the ones proposed by Miyazaki et al. (2010) and Glover et al. (2011), while we do not find evidence corroborating their suggested mechanism: A cohort that enters labor market in a recession holds more financial assets.

There are several limitations in the current study. First, we cannot provide direct evidence for the in-kind and monetary transfers within a household as a mechanism through which a cohort-specific labor market shock is insured. This limitation is mostly due to the nature of the household expenditure survey and seems to be difficult to overcome. Second, the asset-holding information recorded in the CEX seems erroneous, including many missing values. The analysis of a data set that specializes in asset-holding information, such as the Survey of Consumer Finance, may overcome this limitation. These additional analyses are left for future research.

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Table 1: Summary statistics of Current Population Survey

Variable	Mean	Std. Dev.	N
Age	32.084	5.216	139,552
Year of graduation	1994.388	7.028417	139,552
Real annual earnings $\vert > 0@$ (in 1996 dollars)	44895.01	46056.74	133,606
Employed	0.920	0.271	135,914
Employed fulltime	0.795	0.404	135,914
Hours worked per week $\vert > 0$	44.373	10.453	133,914
Married	0.622	0.485	139552
Number of Adults (16 and above)	2.150	0.793	139552
Coresidence with parents	0.094	0.292	139552
Household reference person	0.609	0.488	139552

Table 2: Summary statistics of consumer expenditure survey

Variable	Mean	Std. Dev.	N
Age	31.958	5.279	53902
Year of graduation	1993.792	7.095	53902
Married	0.592	0.491	53902
Number of Adults (16 and above)	2.067	0.819	53902
Reference person	0.602	0.49	53902
Eqv scale exp in the previous quarter, 1996 price	4524.485	3967.53	32432
Equivalent scale household size	1.645	0.527	32432
Food share	0.154	0.08	32432
House Ownership	0.628	0.483	32432
Bank valid answer	0.651	0.477	8101
Positive checking & saving account	0.935	0.247	5271
Checking & saving balance $\mid > 0$	19235.611	57687.796	4927
Security valid answer	0.21	0.407	8101
Positive security	0.999	0.034	1702
Security balance $\mid > 0$	67812.082	201897.415	1700

The analysis sample includes white non-Hispanic men aged 20 or older who have some college or higher educational background with 1-18 years of potential labor market experience. Those who are currently enrolled in college or graduate school are excluded.

Table 3: State unemployment rate at college graduation and labor market outcomes

	ln(real annual earnings)	Employed	Fulltime	ln(hours worked per week)
UE 1-3	-0.034***	-0.003	-0.009***	-0.006*
	(0.010)	(0.002)	(0.003)	(0.003)
UE 4-6	-0.026***	-0.002	-0.004	-0.001
	(0.006)	(0.002)	(0.003)	(0.002)
UE 7-9	-0.014***	0.000	0.000	0.000
	(0.005)	(0.002)	(0.003)	(0.002)
UE 10-12	-0.010**	-0.001	-0.002	0.001
	(0.004)	(0.002)	(0.002)	(0.001)
UE 13-15	-0.001	0.001	0.000	0.002
	(0.004)	(0.001)	(0.002)	(0.001)
UE 16-18	-0.005	0.002*	0.001	0.000
	(0.003)	(0.001)	(0.002)	(0.001)
R2	0.21	0.03	0.04	0.06
N	133,606	135,914	135,914	133,914

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

State-level clustering robust standard errors are reported in parentheses. All specifications include dummy variables corresponding to each year of potential experience and cohort and state $\times$ year-quarter fixed effects.

Table 4: State unemployment rate at college graduation and household structure (CPS)

	Married	N adults	Co-residence with parents	Reference
UE 1-3	0.001	0.046***	0.007	-0.009*
	(0.005)	(0.015)	(0.009)	(0.005)
UE 4-6	-0.002	0.031***	0.008*	-0.007*
	(0.005)	(0.008)	(0.005)	(0.003)
UE 7-9	-0.008**	0.007	0.003	-0.001
	(0.003)	(0.006)	(0.003)	(0.004)
UE 10-12	-0.003	0.009*	0.001	0.002
	(0.002)	(0.005)	(0.002)	(0.003)
UE 13-15	-0.003	0.001	0.000	0.001
	(0.003)	(0.005)	(0.002)	(0.002)
UE 16-18	-0.002	0.001	-0.001	-0.002
	(0.003)	(0.006)	(0.002)	(0.002)
R2	0.200	0.088	0.144	0.051
N	139,552	139,552	139,552	139,552

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

State-level clustering robust standard errors are reported in parentheses. All specifications include dummy variables corresponding to each year of potential experience and cohort and state $\times$ year-quarter fixed effects.

Table 5: State unemployment rate at college graduation and household structure (CEX)

	Married	N of adults	Reference
UE 1-3	-0.001	0.021	-0.003
	(0.005)	(0.009)**	(0.005)
UE 4-6	0.007	0.027	-0.006
	(0.005)	(0.008)***	(0.005)
UE 7-9	0.006	0.004	0.006
	(0.004)	(0.008)	(0.005)
UE 10-12	0.009	-0.009	-0.004
	(0.004)**	(0.007)	(0.004)
UE 13-15	-0.003	-0.007	0.003
	(0.003)	(0.006)	(0.003)
UE 16-18	0.007	0.005	-0.003
	(0.003)**	(0.006)	(0.003)
R^2	0.14	0.03	0.01
N	53,902	53,902	53,902

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

State-level clustering robust standard errors are reported in parentheses. All specifications include dummy variables corresponding to each year of potential experience and cohort and state $\times$ year-quarter fixed effects.

Table 6: State unemployment rate at college graduation and consumption behaviors

	ln(Exp)	ln(HH)	Food share	House ownership
UE 1-3	-0.016	0.015	0.003	-0.009
	(0.016)	(0.008)*	(0.003)	(0.014)
UE 4-6	0.011	0.008	-0.002	0.005
	(0.013)	(0.007)	(0.002)	(0.009)
UE 7-9	0.011	0.002	-0.001	-0.004
	(0.014)	(0.006)	(0.002)	(0.008)
UE 10-12	0.014	-0.007	-0.001	0.007
	(0.012)	(0.006)	(0.001)	(0.010)
UE 13-15	0.005	-0.005	0.001	-0.012
	(0.009)	(0.005)	(0.001)	(0.007)
UE 16-18	0.002	0.002	0.001	-0.012
	(0.008)	(0.005)	(0.001)	(0.007)*
R^2	0.45	0.10	0.02	0.14
N	32,431	32,432	32,432	32,432

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

State-level clustering robust standard errors are reported in parentheses. All specifications include dummy variables corresponding to each year of potential experience and cohort and state $\times$ year-quarter fixed effects.

Table 7: State unemployment rate at college graduation and asset-holding behaviors

	Bank valid	Bank+	ln (Bank)$\| > 0$	Sec valid	Security+	ln (Sec)$\| > 0$
UE 1-3	0.005	0.004	0.003	0.012	0.002	-0.142
	(0.017)	(0.008)	(0.081)	(0.015)	(0.002)	(0.348)
UE 4-6	-0.022	-0.002	-0.073	0.006	-0.002	-0.021
	(0.013)*	(0.009)	(0.065)	(0.011)	(0.003)	(0.192)
UE 7-9	0.003	0.004	0.019	0.004	0.006	0.039
	(0.011)	(0.007)	(0.069)	(0.011)	(0.004)	(0.207)
UE 10-12	-0.002	0.017	-0.012	-0.001	0.002	0.010
	(0.012)	(0.009)*	(0.052)	(0.011)	(0.002)	(0.122)
UE 13-15	0.001	0.005	0.014	0.005	0.000	0.067
	(0.013)	(0.006)	(0.033)	(0.007)	(0.001)	(0.099)
UE 16-18	-0.010	0.007	-0.028	0.005	-0.000	0.116
	(0.010)	(0.005)	(0.058)	(0.007)	(0.001)	(0.098)
R^2	0.01	0.05	0.14	0.06	0.04	0.13
N	8,101	5,271	4,927	8,101	1,702	1,700

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

State-level clustering robust standard errors are reported in parentheses. All specifications include dummy variables corresponding to each year of potential experience and cohort and state $\times$ year-quarter fixed effects.