12-2018

The Effect of Student Loan Debt on Homeownership

Courtney A. Cantrell
University of Tennessee, Knoxville, ccantr17@vols.utk.edu

The Effect of Student Loan Debt on Homeownership

Courtney Cantrell

Abstract

This research examines the relationship between student loan debt and homeownership in the United States. The government emphasizes long-term investments like homeownership through tax incentives, but does not focus on negative effectors like student loan debt. In this article, I hope to identify how student loan debt affects homeownership through multiple ordinary least square (OLS) regressions. I obtained the data for the project from the Panel Study of Income Dynamics (PSID), specifically the Transition to Adulthood Study (TAS). The TAS surveys children of families involved in the PSID from ages 18-32, and offers biannual data ranging from 2005 to 2015. I ran a pooled time-series regression controlling for the years 2009, 2011, 2013, and 2015 with homeownership as the dependent variable and student loan debt as the independent variable. I included other control variables including race, employment status, income, marital status, number of children, and region of the country in which each individual lived. Based on previous literature, I hypothesized that higher student loan debt will lower the likelihood of homeownership. The results of this study did find a negative relationship, but it was statistically insignificant. The findings in this study compared to others can most be attributed to data limitations. Research in this field is necessary to help policymakers understand the effect of student loan debt on the long-term decisions of those who hold it and show policymakers how creating policies to lower this debt will lead to other social benefits.

Introduction

The national homeownership rate is the lowest it has been in 50 years. From 2005 to 2014, the homeownership rate declined 5 percentage points; moreover, the rate declined 9 percentage points for people in the 24 to 32 age group (Mezza 2016). There are many factors that negatively affect homeownership, one of those being student loan debt. In those same 9 years, student loan debt tripled. In 2005 national student loan debt was $363 billion, but reached a staggering $1.2 trillion dollars in 2014 (Federal Reserve of Economic Data Press Release 2017). Student loan debt is now the greatest source of debt for many Americans, outweighing credit card and other debts combined, making it a deterrent to take on more debt like a mortgage for a house (Dynarski 2014).

Homeownership is encouraged by government because of the benefits both economically and socially. Homeownership is a vital part of the American economy, as the housing sector represented approximately 15% of GDP during 2017 through fixed investments and housing services (Bureau of Economic Analysis 2017). The value of homeownership is seen through the monetary benefits and savings one can obtain from owning a home, which is incentivized through tax breaks.

Beyond the economic benefits of housing, there are numerous social benefits to the individual and society. One individual benefit is higher educational achievement of children in the form of higher graduation rates from both high school and post-secondary education institutions (Rohe 2013). Other individual benefits include more engaged parenting, leading to more well-behaved children (Rohe 2013; Yun 2016). These individual benefits then transform into societal benefits. Homeownership is connected to lower crime rates and increased

property maintenance (Yun 2016). People also tend to trust their neighbors to a greater extent, contributing to those lower crime rates, and also greater civil participation (Rohe 2013; Yun 2016). The benefits also manifest themselves back to greater psychological health, as people have more self-esteem if they live in low crime, appealing areas (Rohe 2013).

If the government wants to further incentivize homeownership to capitalize on those benefits, new policies must consider reducing student loan debt to reduce the burden on recent graduates. Understanding the causal relationship between student loan debt and homeownership provides grounds for policy change surrounding both student loans and housing.

Using data from the Panel Study of Income Dynamics (PSID), specifically the Transition into Adulthood Supplement survey (TAS), I run multiple economic regressions using a measure of homeownership as the dependent variable, amount of student loan debt as independent variables, and a number of other explanatory variables. Given the inability to do time series with the TAS survey, I run three OLS regressions, using the 2009, 2011, 2013, and 2015 data. Using these particular years allows for study while the country was in a deep economic recession and the following years as the country recovered. The different economic climate in each of these years must be controlled for the ensure the result is not skewed. The results of my study indicates that student loan debt does not have a statistically significant effect on homeownership. This differs from previous research which found that having student loan debt reduced the likelihood of owning a home, but my results could be the results of data limitations.

The next sections of the paper are organized as follows. Section 2 discusses the policy background of government intervention into student loans. Section 3 examines the previous literature of the positive and negative correlates of homeownership, and more specifically the effect of student loan debt on the likelihood of owning a home. In Section 4, I explain the survey dataset, and in Section 5 I define the economic model and the regression methods I implement. Section 6 analyzes the findings of the regression, and finally Section 7 concludes.

Background and Significance

Federal investment into higher education began in 1944 with the creation of the GI Bill as a benefit to veterans and their families. The government wanted veterans who fought in World War II to have the same opportunities as their peers who did not fight in the war (Gladieux 1995). Just 10 years after the enactment of the bill, higher education enrollment increased from 1.15 million to 2.45 million (Fuller 2014).

The next major change in higher education financing came with the Higher Education Act of 1965. This major piece of legislation from Lyndon Johnson's presidency, "increased the federal government's involvement in higher education and permanently established a philosophy of higher education as an issue of national interest" (Fuller 2014). A small loan system was implemented, but the act put an emphasis on providing assistance through grants, like the Pell Grant, to needy students who would benefit from continued education.

As the country headed into the Space Race, the government put more emphasis on higher education so subsidies increased. At this same time, around the end of the 1960s, the first wave of issues with government-backed student loans arose as students began defaulting

on their loans (Edwards 2016). In hopes of fixing that problem, the 1972 reauthorization of the Higher Education Act attached a new form of lending to students. Originally called the Guaranteed Student Loan Program, the new provision stated the federal government would pay interest on student loans while the student was in college to increase their ability to pay back the loans (Fuller 2014).

During the 1980s, amidst a number of reauthorizations, Congress debated the options for federal student aid and focused on whether to increase the grant program or the loan program. In 1986, under fiscally-conservative Reagan Administration, the future of the program was decided as the executive branch would not authorize a budget increase to the federal grant program. To match the exponential rise in the cost of higher education, Congress voted to raise the ceiling on the loans available to students (Gladieux 1995). Since this decision, federal student aid acts have focused on the improvement of the loan program, while an increase to the grant program is almost never discussed.

President Clinton signed the Student Loan Reform Act in 1993 with the goal of converting a large number of loans from federally guaranteed loans to direct loans (Fuller 2014). Federally guaranteed loans are given by private institutions but backed by the federal government, whereas direct loans are borrowed straight from the Department of Education, meaning the money comes from the US Treasury. The reform in 1993 not only changed the type of loans, but also resulted in lower interest rates and another increased ceiling in the loan amount. These changes led to an unprecedented increase in participation in the program and resulted in a $10 billion increase in loans from 1993 to 1995 (Fuller 2014). During the 2000s, participation in the program continued to grow, while no major changes were made to higher

education federal aid. However, students' inability to repay loans entered the spotlight during and after the late 2000s recession. Students found it increasingly hard to find a job, and the repayment of student loan debt loomed regardless of employment status. Defaults still persistently increase, and in 2015, "more than 1 million borrowers were defaulting on their student loans each year" (Weeden 2015).

As higher education becomes the most common route for students to pursue after high school, the federal government will have to decide how to increase assistance for education, without raising loan debt. States are already addressing the student loan debt issue by implementing programs to cover full tuition for 2-year degrees at community colleges and technical schools. The Tennessee Promise Program was the first program of this kind. According to the Tennessee Promise Program School Resource Guide, the scholarship is the last source of aid students will receive to cover tuition costs after all other grants and scholarships have been applied. The scholarship only covers mandatory tuition costs, so it does not cover books or room and board. There are no prerequisites to receive the tuition coverage, but to stay in the program the student must maintain a 2.0 GPA and complete 8 hours of community service a semester. These types of programs are starting to be implemented in other states such as Rhode Island, New York and many others as a way to combat student loan debt and the negative effects that come with it.

Literature Review

The benefits of owning a home to the economy and personal/familial stability were previously established. Now it is necessary to understand what factors affect homeownership,

both positive and negative. Race is a significant factor on homeownership (Cooper 2014; Haurin 2004). African-Americans are less likely to own a home than their Caucasian counterparts. Gender also plays a significant role, with single males being less likely to own a home than their female counterparts (Haurin 2004). Other significant factors are age, national employment, marital status, and the region of the country (Cooper 2014; Haurin 2004).

Specifically looking at the younger generation, or millennials, there are other factors that negatively affect the age group's homeownership rate. The generation is changing lifestyle choices such as, "delaying marriage, postponing having children, and returning home to live with their parents rather than forming their own households and buying (or renting) homes" (Dickerson 2016). These lifestyle choices are somewhat explained by financial millennials face after completing their education. Millennials deal with job insecurity and stagnant wages after graduating from school, so they do not feel comfortable making long-term investments (Dickerson 2016). Part of this financial insecurity is student loan debt. This debt is cumbersome and many times is required to be paid back quickly regardless of a student's financial situation after graduation.

Student loan debt has become a crisis in the United States, which is logical given the data of recent graduates. Student loan debt has become an increasing source of American household debt, as "the average 2015 college graduate owes more than $35,000 in student loans and takes about 17 years to pay it off" (Edwards 2016). The amount of student loan debt has grown exponentially, and it is now the greatest source of debt, over credit card and auto loan debt for many Americans (Dynarski 2014).

This data is compelling, but some scholars believe the situation is not in complete disrepair. Student loans may seem crushing to the student directly after graduation, but the benefits of higher income and stability in the future still outweigh the costs of education. Instead of a student loan debt issue, there is a s mismatch in timing of paying back the loans (Dynarski 2014). Not many solutions arise for this problem as payment plans are structured in a way that loans are paid back as quickly as possible. Millennials have lower incomes directly after graduation than the generation before, making it that much harder to pay back cumbersome student loans (Edwards 2016). As the debt remains with these students, it is affecting the way these people make long-term decisions.

As students marry and start families later in life, they also buy homes much longer after they finish school. “This pattern of homeownership by age for households with at least some college experience seems to suggest that student loan debt delays households in purchasing a house but may not necessarily deter homeownership permanently” (Cooper 2014). While student loan debt may not force people to forgo homeownership, it does increase the amount of time between graduating school and purchasing their home. The negative relationship is further proven by a regression analysis conducted in the paper, *On the Effect of Student Loans on Access to Homeownership*, which found a strong effect of student loan debt on homeownership. The paper found “with a one percent increase in student loan debt leading to an approximately 0.1-0.2 percentage point decrease in the probability of homeownership 24 months out of school” (Mezza 2016).

Data

I use data from the Panel Study of Income Dynamics (PSID) from the University of Michigan. For this research, I use the Transition to Adulthood Study (TAS), a branch of the PSID. The TAS follows children from the original surveyed families from ages 18 to 32 and asks questions about children, debt, income and other lifestyle choices. I chose this dataset because it offered data on student loan debt, which the original PSID did not include.

I examined homeownership based on the living arrangements self-reported by the TAS respondents when asked where he or she lived most of the time. The answer that I am most interested in is if the house or condominium is owned by the respondent. Other answer options include: parent's home, apartment or room rented, college dorm, college fraternity or sorority house, house or condominium owned by the respondent's parents, which become one option if the individual did not own a home.

I study student loan debt as the main independent variable affecting homeownership. The TAS offers data on whether a respondent currently holds student loan debt as a categorical variable; unfortunately, the data on the magnitude of debt are not available. In 2009, 63.58% did not hold student loan debt while 36.29% did hold student loan debt. In 2011, the percent of student loan debt holders increased slightly to 38.65% and remained around that point through 2013 and 2015. I hypothesize based on theory and previous research that the presence of student loan debt will have a negative effect on homeownership relative to those students with no student loan debt.

Other explanatory variables include lifestyle choices facing people 18 to 32 that affect homeownership. These control variables were included based on theory and previous research.

Table 1 shows the description of the control variables and the expected relationship of the variable to homeownership.

Table 1

Variable	Description	Expected Relationship
Student Loan Debt	Whether or not the respondent has student loan debt.	Negative
Other Debts	The amount of other debt (including credit card, auto and mortgage) the respondent has.	Negative
Race	The race of the respondent.	Given previous research, certain races are less likely to own a home. African-Americans are less likely to own homes than whites.
Married	Whether or not the respondent is married.	Positive
Children	The number of children the respondent has.	Positive
Income	The total yearly income of the respondent the year prior the questionnaire.	Positive
Unemployment	The number of months the respondent was unemployed the year prior the questionnaire.	Negative
Region	The region of the country in which the respondent lives.	Based on theory, some regions of the country reduce the likelihood to own a home. For example, in many areas in the northeast homes are more expensive which incentivizes people to rent.

There are other control variables thought to affect homeownership not included in this study because of data limitations. For example, age and gender both have an effect on

homeownership based on other research, but neither were included as variables in the TAS questionnaire.

Methods

The home ownership variable is dichotomous so I examine the data using the probit estimator. While multiple years of data are available, respondents were not uniquely identified between years, so panel methods cannot be applied to the data. As an alternative, multiple cross-sectional analyses are used. While this approach is limiting, it still allows analysis of four different years of data. The coefficients across years can be examined to determine whether behavioral patterns changed across time as the United States slowly emerged from the 2009 recession.

The estimated model includes the following variables:

$$(1)\ HO = \alpha + \beta_1 SLD + \beta_2 Debt + \beta_3 Race + \beta_4 Married + \beta_5 Children + \beta_6 Income + \beta_7 Unemployment + \beta_8 Region$$

It varies slightly from an ideal fully-specified model, but still includes a number of variables of interest according to previous research, in particular a measure of student loan debt. Given the inability to identify each person across the time period, I am running a pooled cross section that includes the years 2009, 2011, 2013 and 2015. To do this I add a time variable for each of the years to capture each year's unique characteristic. The model is now:

$$(2)\ HO = \alpha + \beta_1 SLD + \beta_2 Debt + \beta_3 Race + \beta_4 Married + \beta_5 Children + \beta_6 Income + \beta_7 Unemployment + \beta_8 Region + \beta_9 Time$$

I run this model under normal OLS regression standards (as a linear probability model), and with a probit model. Both my independent and dependent variables are categorical, so running a probit regression is ideal for this model. The OLS regression adds a robustness check. White standard errors are implemented for both models to make them robust against heteroskedasticity.

Results

Table 2 shows the results of the pooled cross-sectional probit regression and the linear probability regression. This study did not find a statistically significant relationship between student loan debt and homeownership. However, several of the explanatory variables did have small, but significant effects on whether an individual owned a home. I interpret the results based on the probit model, as it more accurate, while the linear probability model was a check for robustness and internal validity. The major difference between the two models that the probit model excluded two races, Pacific Islander and Latino, and the region of Alaska and Hawaii because there are not enough observations for the probit model to find a relationship.

Table 2

Categorical Data Analysis			
"*"=95% Statistical Significance, "**"=90% Statistical Significance**			
Homeownership		Model 1	Model 2
Student Loan Debt		-0.00218	-0.020333
		(0.005)	(0.061)
Married		0.24136***	1.274441***
		(0.016)	(0.063)
Other Debt		0.000**	0.000***
		(0.000)	(0.000)
White (Race)			
	Black	-0.03773***	-0.4170306***
		(0.005)	(0.071)
	American Indian	0.03004	0.2351708
		(0.029)	(0.209)
	Asian	-0.02865***	-0.6518728**
		(0.011)	(0.448)
	Pacific Islander	-0.03623***	-
		(0.009)	
	Latino	-0.04230***	-
		(0.012)	
Income		0.000	0.000
		(0.000)	(0.000)
Number of Children		0.00197	0.0210721**
		(0.001)	(0.008)
Unemployment		-0.00126***	-0.0830724***
		(0.002)	(0.000)
Northeast (Region)			
	North Central	0.0414***	0.4289336***
		(0.008)	(0.107)
	South	0.02261***	0.266109***
		(0.007)	(0.109)
	West	-0.02006**	-0.3079657***
		(0.008)	(0.130)
	Alaska/Hawaii	-0.14640	-
		((0.085)	
	Foreign country	0.05001	0.3242606
		(0.109)	(.565)
Number of Observations		6,906	6,851
Type of Model		Linear Probability Model	Probit

When interpreting the results of the probit model, I use the average marginal effect of the coefficients. Table 3 shows the marginal effect of the variables that are statistically significant.

Table 3

Variable		Marginal Effect
Student Loan Debt		-0.001672
Married		0.1047993
White (Race)		
	Black	-0.0327325
	Asian	-0.0438882
Number of Children		0.0017328
Unemployment		-0.0068312
Northeast (Region)		
	North Central	0.0367986
	South	0.0202804
	West	-0.0153993

Marital status had the most significant impact in this study. On average the effect of being married makes a respondent 10.4% more likely to own a home over being single, widowed, or divorced. Race also had a significant effect on homeownership. Both African-Americans and Asians are less likely to own home versus white people in the same age group, which follows the previous literature on the subject. The number of children a respondent has and the number of months they were unemployed in the last year both had small, but significant effects on homeownership. On average, for each additional child a respondent has makes them .17% more likely to own a home. Each additional month of unemployment decreased the likelihood of homeownership by .68%. Finally, the region of the country in which a person lives changes their likelihood of homeownership. Compared to the northeast region, a

person is more likely to own a home if they live in the north central and southern region, but less likely to own a home if they live in the west.

Conclusion

This paper aimed to find the relationship between student loan debt and homeownership. Given theory and previous literature on the subject, I hypothesized that student loan debt would have a negative effect on homeownership. Using data from the Transition to Adulthood Study for years 2009, 2011, 2013 and 2015, pooled-cross section linear probability and probit models were run. The results from this study did not find that student loan debt had a statistically significant effect on homeownership. Significant results were found for several explanatory variables including marital status, race, number of children, unemployment, and region.

There are several reasons why the student loan debt presented a statistically significant coefficient. It could have been the exclusion of the age and gender variables, which have been shown to effect homeownership decisions in previous literature. I was unable to include these in my study because those questions were not included in the survey. This also led to the issue of the inclusion of current college students, which possibly skewed the results. Current college students are less likely to own homes given their financial situations.

There are many ways to further the research I have conducted. First, there is the opportunity to find a more complete dataset to avoid the issues that possibly skewed my results. Also there is an option to find an instrumental variable to eliminate omitted variable bias, especially the intrinsic qualities of a person. Someone who is very risk-averse may be less

likely to take on mortgage debt, but the only way to determine this about a person would be through an instrumental variable.

Works Cited

Cooper, D. and C. Wang (2014). "Student Loan Debt and Economic Outcomes." FRB Boston Current Policy Perspectives, (14-7).

Dickerson, Mechele A. (2016). "Millennials, Affordable Housing, and the Future of Homeownership." Journal of Affordable Housing: Volume 24, Number 3, (435-465).

Dynarski, Susan (2014). "An Economist's Perspective on Student Loans in the United States," ES Working Paper Series. Economic Studies at Brookings.

Edwards, Dana (2016). "How We Can Solve the Student Loan Debt Crisis." The Journal of the James Madison Institute, (79-90).

Fuller, Matthew (2014). "A History of Financial Aid to Students." Journal of Student Financial Aid: Volume 44, Issue 1, Article 4.

Gladieux, Lawrence (1995). "Federal Student Aid Policy: A History and an Assessment." Financing Postsecondary Education: The Federal Role.

Haurin, Donald and Stuart Rosenthal (2004). "Sustainability of Homeownership: Factors Affecting the Duration of Homeownership and Rental Spells." U.S. Department of Housing and Urban Development Office of Policy Development and Research.

Hegji, Alexandra, David Smole, and Elayne Heisler (2016). "Federal Student Loan Forgiveness and Loan Repayment Programs." Congressional Research Service.

Mezza, Alvaro, Daniel R. Ringo, Shane M. Sherlund, and Kamila Sommer (2016). "On the Effect of Student Loans on Access to Homeownership." Finance and Economics Discussion: Series 2016-010. Washington: Board of Governors of the Federal Reserve System.

Rohe, William and Mark Linblad (2013). “Reexamining the Social Benefits of Homeownership after the Housing Crisis.” Joint Center for Housing Studies.

Tennessee Promise: School Resource Guide. http://tennesseepromise.gov/files/TNPromiseHandbook080514.pdf

Weeden, Dustin (2015). “Student Loan Debt.” Hot Topics in Higher Education. National Conference of State Legislatures.

Yun, Lawrence and Nadia Evangelou (2016). “Social Benefits of Homeownership and Stable Housing.” National Association of Realtors, Research Division.