The Dynamics of Co-Residence, Wealth, and Family Formation

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Abstract

It has been increasingly common for adult children to live in their parents' home. This paper studies the causes and consequences of co-residence from the perspective of young adults. There are three main results. First, event studies indicate that household finances are surprisingly disconnected from co-residence changes. Second, marriage and fertility correlate strongly with housing independence. Third, plausibly exogenous rental housing unaffordability estimates only modestly affect co-residence. These findings should inform structural work and forecasts of housing demand.

1 Introduction

In 1960, 10.9% of men and 7.4% of women aged 25 to 34 lived with their parents (U.S. Census Bureau 2024). By 2019, these rates had risen to 20.4% for men and 13.1% for women, an increase of 9.5 and 5.7 percentage points, respectively. This rise in co-residence reflects a range of structural and social changes, including rising housing costs, increased debt accumulation, delayed marriage and childbearing, and evolving cultural norms. While living with parents can provide financial support during labor market uncertainty, it may also delay economic independence and shift patterns of saving and family formation. As the transition period into adulthood lengthens and parental co-residence becomes more common, it is important to understand the major forces driving this housing decision and how it may contribute to long-term economic and demographic outcomes.

This paper examines how parental co-residence, net worth, marriage, and parenthood are interrelated, focusing on whether co-residing with parents influences YAs' wealth levels and family formation. Existing literature on parental co-residence has generally focused on understanding which factors affect a YA's decision to choose this arrangement, with an emphasis on labor market activity and housing costs. Marriage and

fertility have also been shown to correlate with co-residence, but they remain underexplored. Using both descriptive and causal methods, I shift focus towards these less commonly studied outcomes using panel data from the Panel Study of Income Dynamics (PSID) Transition to Adulthood Supplement (TAS).

I begin by examining how various outcomes change as YAs move into or out of co-residence using event studies. The panel structure of the data allows me to track YAs over time and observe changes around co-residence moves. Since co-residence is a choice, these event studies are not meant to identify causal effects, but rather to document patterns around the transitions.

To estimate the causal effect of co-residence on wealth and expectations of family formation, I turn to an IV strategy. Parental co-residence is instrumented with the predicted state-level rental unaffordability, defined as the ratio of the state's 40th percentile gross rent estimate to the median family income.[1] This captures how difficult it is for a typical renter to afford a standard quality unit in a given state and year. The literature typically considers either the role of rising housing costs or the delays in marriage and childbearing in co-residence, but rarely both. This paper connects the two by studying co-residence as a potential channel linking housing unaffordability to YAs' wealth and expectations of family formation.

The event studies reveals no significant changes in net worth around co-residence moves. In terms of family formation, the selection out of parental co-residence is stronger than the selection into it. Moving out is associated with a higher likelihood of being married and having larger families, whereas YAs who move back in are no more or less likely to be married or to have more children. While past literature has documented wealth differences between co-residers and non-co-residers, my event studies do not show such patterns. Additionally, earlier studies have suggested that co-residence delays marriage and childbearing, a result that cannot be formed with the present analysis. However, I find that marriage and a larger family size coincide with exits from the parental home.

Causal interpretations from the IV analysis should be made with caution. Across all outcomes, the unaffordability instrument appears weak, which is reinforced by robustness checks and alternative instrument constructions. The results indicate that while co-residence is associated with rental unaffordability, the instrument is likely capturing only a part of the broader mechanism.

The existing literature has demonstrated the importance of market and individual differences on the decision to co-reside. Fewer job opportunities, low wages, and rising rental costs have all been shown to increase parental co-residence (Matsudaira 2016; Cooper and Luengo-Prado 2018). Dettling and Hsu (2018) find that indebtedness increases the flow into co-residence, and that the duration of time spent in the

1. Earlier attempts experimented with using the total number of rooms, total number of siblings, and age of youngest sibling as instruments. First stage F-statistics were weak for all, and it is likely that the exogeneity condition is not satisfied. Consider the parent's wealth: YAs with poorer parents may have smaller homes with bigger families, making co-residence unlikely due to crowding. YAs with richer parents are also probably less likely to co-reside because parents can help with making rental payments.

parental home is associated with low credit scores and delinquency. Rosenzweig and Zhang (2014) studied urban China and find that after controlling for income, intergenerational co-residence is associated with greater savings among younger adults, but not older ones. Demographics also matter: Newman, Holupka, and Ross (2018) shows that young black adults react more strongly to rent, while their white counterparts respond more to employment rates. Bleemer et. al. (2014) find that academic background also influences the decision to return home. In states with higher graduation rates, individuals respond more strongly to changes in tuition, with increases in schooling costs similarly increasing the likelihood of living at home. On the other hand, individuals who live in states with lower graduation rates are more impacted by job market conditions. Houle and Warner (2017) show that failing to complete college raises the risk of moving back home, with the effect of student debt on co-residence being stronger for black than white youths. Employment shocks that reduce labor market activity have also been found to increase the hazard of moving back home (Kaplan 2009; Engelhardt, Eriksen, and Greenhalgh-Stanley 2019), as did less job availability for college graduates and lower wages (Albanesi, Gihleb, and Zhang 2022). Co-residence allows for longer job searches and can improve matches (Kaplan 2012). After job displacement, Krolikowski, Zabek, and Coate (2020) find that earnings recovered fully for YAs living near their parents, but declined permanently the further the individual lived away from home. Other studies show that YAs returning home tend to relocate to weaker labor markets (Chan, O'Regan, and You 2021). For working mothers, co-residence with parents can increase labor supply due to grandparent childcare support (Liao and Paweenawat 2022; Compton and Pollak 2014; Arpino, Pronzato, and Tavares 2014). This paper contributes to this literature by examining how co-residence relates to YAs' net worth and expectations around family formation. I analyze patterns in these outcomes around moves into and out of the parental home, providing descriptive evidence on what tends to happen before and after a move, and highlighting any asymmetries in these transitions.

As early as the 1990s, higher relative house prices were shown to significantly slow home-leaving, delay the formation of partnerships, and encourage returns to the parental home in England (Ermisch 1999). In the U.S., Acolin, Lin, and Wachter (2024) attribute a large share of the rise in co-residence since 2000 to falling housing affordability. Srinivas (2019), using macro data from 1983-2017, finds that rents have been progressively unaffordable, and argues that using home prices rather than rental costs may understate the effect of housing cost pressures and overstate the role of other factors. Rental affordability also varies across subpopulations. For instance, immigrants receiving Deferred Action for Childhood Arrivals (DACA) are less likely to live in a multigenerational household, which could in part be explained by the lower rental costs paid relative to non-DACA recipients (Gihleb, Giuntella, and Lonsky 2023). A decline in marriage rates among DACA eligible individuals was also found, but no clear effects on fertility were observed. This literature has established a strong link between housing costs and co-residence decisions, but less is known about how

they affect other life transitions through co-residence. This paper focuses on how rental unaffordability may influence the net worth of YAs and their expectations around marriage and parenthood.

Although parental co-residence and family formation decisions are often correlated, it is unclear the direction of causality. For example, while marriage and parenthood are associated with co-residence transitions, it is difficult to determine whether co-residence delays family formation, or if those not forming families are more likely to co-reside. Previous research has found that parental and marital status of the YA are strongly associated with the increase in co-residency. Kahn, García-Manglano, and Goldscheider (2017) find that after controlling for both parental and marital status, white women are more likely to co-reside than black women. International research shows similar connections. In Taiwan, working women living with their husband's parents tends to delay childbearing (Chu, Kim, and Tsay 2014). In Japan, Yu and Kuo (2016) found that parental co-residence reduces the likelihood of forming romantic relationships. Their results suggest that co-residing with parents led never-married men to increase their contentment with their immediate social surroundings, but reduces women's psychological readiness to transition into adult roles. In this paper, I examine the causal link between parental co-residence and family formation. Rather than focusing on actual outcomes, I study self-reported likelihood and anticipated timing of these events. These expectations allow for a better understanding into YAs' perception of their economic and social readiness.

The remainder of this paper proceeds as follows. Section 2 details the event study and IV estimation approaches. Section 3 describes the TAS and other data sources used to construct the instrument. Section 4 presents the main results. Section 5 provides robustness checks for the IV analysis and extends the approach by incorporating additional controls and adjusting the instrument definition. Section 6 concludes.

2 Empirical Strategy

To look at the different outcomes around a move-in or move-out decision between movers and non-movers, a dynamic two-way fixed effects (TWFE) event study is estimated:

$$Y_{it} = \sum_{k \neq -2} \tau_k * Move_{i,t-t_i^*=k} + \delta_i + \lambda_t + \varepsilon_{it} \tag{1}$$

Subscript i denotes a young adult and t denotes time which is measures in years. The outcomes of interest Y_{it} are the net worth of the YA (using inverse hyperbolic sine transformation),[2] marital status, and the

2. The inverse hyperbolic sine of net worth is used as it adjusts for the skewness of the variable and retains zero and negative-valued observations. For large positive values, it behaves similarly to a logarithmic transformation. In the event study sample, excluding student loans, 22.67% have zero net worth, 24.79% have no assets, and 75.29% have no debt. Including student loans, 18.07% have zero net worth and 49.38% have no debt. In the IV sample, there are 18.38% with zero net worth, 19.78% with zero assets, and 80.58% with zero debt when we exclude student loans. There are 15.32% with zero net worth and 53.73% with no debt when we include student loans.

total number of kids. The coefficients of interest are τ_k, where $Move_{i,t-t_i^*=k}$ is an indicator for whether the YA has moved by event time k. The reference year is set to the survey prior to the YA changing their co-residence status (i.e., two years). Individual and year fixed effects are included to control for time-invariant individual characteristics and unobserved variables that affect all observations within a specific year equally, respectively.

Recent papers on dynamic differences-in-differences (DiD) highlight challenges in making causal comparisons between treated and control units when treatment adoption is staggered. For a standard DiD, the coefficients are simply the weighted average of treatment effects. However, the different treatment timing leads to problematic comparisons of units already treated. Furthermore, if treatment effects are heterogeneous, the weights used are likely to be incorrect, and could even have a negative weight. Solutions have been proposed, all of which make clear who is included in the control group. In Cengiz et al. (2019), they use a stacking method (stacked DiD) that manually removes already-treated units from the control group. Each treated unit is matched to controls that are not-yet-treated and separate fixed effects are estimated for each group. Callaway and Sant'Anna (2021, CS) propose an estimator that only includes units that never received treatment or those not-yet-treated as controls. It finds $ATT(g,t)$, the average treatment effect at time t for the cohort first treated at time g. To obtain the average treatment effect l periods after treatment across the different cohorts, the average treatment effects are multiplied by specified weights. The weights could, for example, be set to weigh different cohorts equally or proportionally to their cohort size. Both the CS and stacked DID estimators are also used to calculate treatment effects and then compared to the typical TWFE event study estimates presented in Equation (1). Although my analysis is primarily descriptive, I implement methods developed for staggered adoption settings to ensure cleaner comparisons and more transparent, interpretable patterns in outcome dynamics around co-residence transitions, while not making explicit causal claims.

Again, the main issue with this analysis is that co-residence is a choice and not a shock. Co-residence and one's financial and family status are jointly determined. This makes it difficult to conclude that co-residence status is the only significant factor causing the change in the outcome variable between the movers and non-movers. Additionally, the assumption of no anticipation is likely to be violated. Nonetheless, these event studies are informative as they provide insights of reasons why people may choose to move.

In addition to the event studies, I also use an IV analysis. The goal is to estimate the causal effect of co-residence on similar outcomes to those from the event studies. This is done by estimating the following system using two-stage least squares:

$$Y_{it} = \beta \widehat{CoRes}_{it} + \theta Age_{it} + \delta_i + \mu_r + \kappa_t + \varepsilon_{it} \tag{2}$$

$$CoRes_{it} = \Pi \widetilde{UnAfford}_{st} + \psi Age_{it} + \delta_i + \mu_r + \kappa_t + e_{it} \tag{3}$$

Equations (2) and (3) are the second and first stages of the two-stage least squares IV estimation, respectively. The outcomes of interest, Y_{it}, are the YA's expectations of the likelihood and age at the start of several family formation events. $Cores_{it}$ is a dummy variable that indicates whether YA i has co-resided with their parent(s) during most of survey year t. Individual, region, and year fixed effects are represented by δ_i, μ_r, and κ_t , respectively.[3] The region fixed effects control for unobserved heterogeneity that is constant over time but varies between regions. Similarly, year fixed effects control for year-specific characteristics and shocks common to all regions. The instrument is $\widetilde{UnAfford}_{st}$, the rental housing unaffordability estimate of the YA's state of residence s.

The cost of housing- in this case, rental- and one's financial situation are two important factors that are considered when deciding whether to live in or outside of the parental home. YAs are more likely to co-reside if they face high rental housing costs, low income, or both- conditions that contribute to housing unaffordability. Here, rental unaffordability is defined as:

$$UnAfford = log\left(\frac{FMR}{medInc}\right), \tag{4}$$

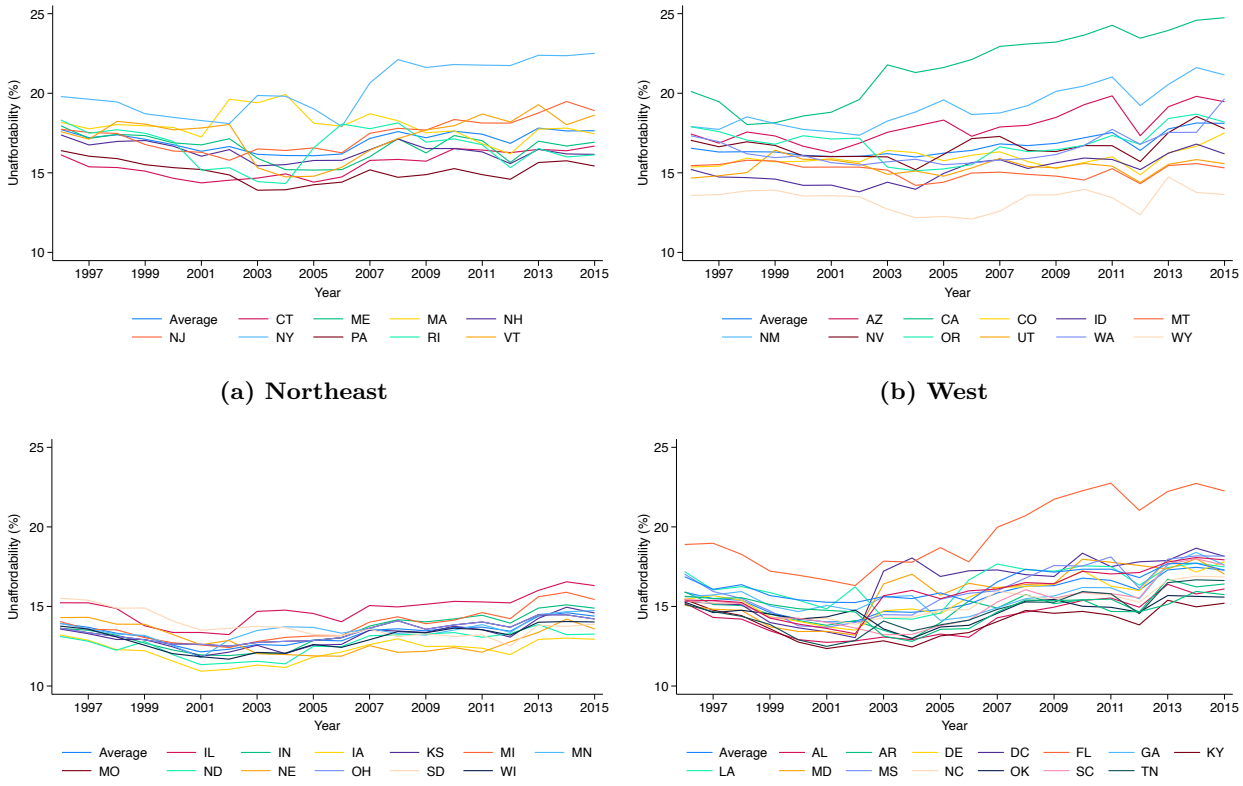
the ratio of the fair market rents (FMR; 40th percentile rents) to the median family income. Within a region, differences in unaffordability can be seen between states (Figure 1). The West and Northeast regions generally observe a higher rental unaffordability compared to the South and Midwest. Trends within the region are generally parallel, with some states (e.g., New York, Florida, California) deviating from the regional average. The instrument I use takes advantage of the differences in state unaffordability to regional unaffordability changes. First, I estimate the sensitivity of each state to the regional unaffordability using:

$$UnAfford_{st} = \sum_s \rho_s UnAfford_{-srt} + \alpha_s + \pi_t + \nu_{st} \tag{5}$$

where $UnAfford$ is defined as in (4). $UnAafford_{st}$ and $UnAafford_{-srt}$ represent the population-weighted state and regional unaffordability estimates, respectively. The coefficients of interest are ρ_s, with each state having a separate coefficient. To construct the instrument used in Equation (3), I multiply $\widehat{\rho_s}$ by the actual unaffordability in that region (leaving out one state) and year: $\widetilde{UnAfford}_{st} = \widehat{\rho}_s UnAfford_{-srt}$. The regression includes state and year fixed effects to control for time-invariant state differences and national trends, respectively. This construction is similar to the one used by Guren et al. (2021).

3. State fixed effects are not used in the main analysis due to collinearity issues, as some YAs never move across states. In Section 5, I run a subsample analysis restricting to YAs who change states, where I include the state fixed effects.

Figure 1: State Rental Unaffordability, by Region



(a) Northeast

(b) West

(c) Midwest

(d) South

Source: U.S. Department of Housing and Urban Development's Fair Market Rent (1997-2015). U.S. Department of Housing and Urban Development's Income Limits (1997-2015).

A valid instrument satisfies the relevance and exclusion restriction. Relevance states that the rental unaffordability instrument is associated with parental co-residence. This is likely satisfied as the existing literature has found support for increased parental co-residence as housing becomes more expensive. The difficult condition to meet is the exclusion restriction, which states that the instrument only affects the outcome through co-residence. This is likely violated as rental unaffordability can affect wealth and family formation directly. People may accumulate less wealth regardless of co-residence status when rents are high, and may delay marriage and parenthood because of housing costs, not just because of co-residence. In addition to unaffordability, income is also very likely to influence our outcomes of interest.

To address potential violations of the exclusion restriction, the rental unaffordability instrument uses predicted values- different time periods are used to calculate and construct the instrument. Specifically, Equation (5) is estimated with data from 1996-2004, while the instrument is constructed using data from 2005-2015. This approach ensures that the instrument reflects only the pre-determined variation and is not influenced by contemporaneous shocks to the outcome variables. Following Guren et al. (2021), when the regional unaffordability measure is calculated, the state in question is excluded to avoid mechanical correlation from including the same state on both sides of the equation.

3 Data

3.1 PSID Transition to Adulthood Supplement

Data on YAs are drawn from the TAS, a supplemental survey of the PSID. It is carried out every two years by the University of Michigan's Survey Research Center and follows children who are entering young adulthood and who one day will become a participant of the main PSID study. TAS respondents become part of the core PSID when they move out of their parents' home and establish an independent household of their own. The TAS started in 2005, following children from the original 1997 PSID Child Development Supplement until 2015. It was relaunched in 2017 to follow all children in the PSID sample aged 18-28. Under the current design, regardless of whether they are a member of the main PSID sample, YAs are interviewed for the TAS until they reach 28 years old. A plethora of information is collected on financial responsibilities, family formation, fertility-related behavior, employment and income, education, and career goals. The survey also collects wealth information through a series of questions about different debt categories and the net value of different assets and investments. In this paper, financial assets include savings accounts, checking accounts, and the net value of other savings or assets such as money market funds, certificates of deposit, stocks,

mutual funds, and bonds. Debt includes carryover balances on credit cards, store cards, or any other loans.[4] Both asset and debt values are winsorized at the 99th percentile for each year. The survey also provides information on where the YA lived for most of the reference year. It asks "During last fall and winter, that is, October [previous year] through April [current year], where did you live most of the time?" and "During [*current year*:this/*current year+1*:last] summer, that is, May through August of [current year], where did you live most of the time?".[5] If the YA chooses "Parents' home (house or apartment)" or "Spouse/partner's parent's home" for at least one of those questions, I consider them to have co-resided during the survey reference year.

Separate samples are used for the event study and IV analysis due to changes in the survey. For both samples, observations are dropped if YAs are under 18, co-residence status is unknown, or last year's income, health status, or state of residence are missing.

For the event study analysis, I further drop observations with more than a two-year gap (e.g., if a YA is interviewed for the 2005, 2009, and 2011 surveys, I drop 2005). It is unclear what the primary residence of the YA is during that missing year, so to prevent incorrect lead and lag times, the survey before the gap occurs is dropped. A YA is considered to have made a move if their co-residence status differs from the previous survey. Table 1 presents demographic characteristics between movers and non-movers at the start of their observation. Looking at Panel A, at the baseline, YAs who move back into the parental home are more likely to be white compared to YAs who never co-resided. They are also more likely to be married and have a higher net worth, all of which are significant at the 10% level. Although no other variables are significant, the differences are in the direction we would expect; age, number of kids, and employment status are negative. On average, movers are observed to be co-residing for 1.012 surveys (standard deviation = 0.208) and not co-residing for 1.011 surveys (sd = 0.202). YAs who never co-resided are observed for about 2.007 surveys (sd = 0.113). Next, in Panel B, I compare the group of YAs who move out with the YAs who are always co-residing. More YAs are observed to leave co-residence (944) than remain in the parental home (524), with few differences between the two groups at baseline. Those who moved out are more likely to be male and not have an Associate's degree, which are statistically significant at the 10% and 5% level, respectively. If the YAs eventually move out, then we observe them in co-residence for about 1.008 surveys (sd = 0.141) and 1.009 surveys (sd = 0.253) living independently (i.e., not living with their parents). YAs who always co-resided are in the sample for 2.003 surveys (sd = 0.057), on average. In Appendix Table A.1, I break down movers into three groups–YAs who only moved in, only moved out, and both moved in and out, and compare their demographic characteristics at baseline.

4. In some cases, I include student loans in the calculation of net worth. Unless indicated, debt and net worth do not include student loans.

5. Whether the YA is asked *this* or *that* for the summer residence item depends on when they were interviewed.

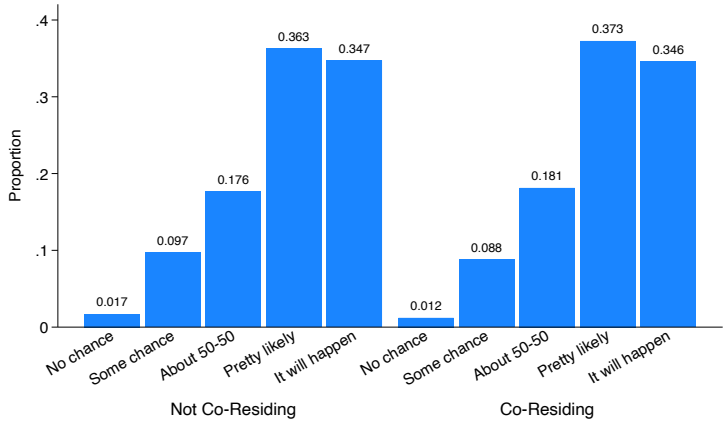
Table 1: YA Demographic Characteristics for Event Study Sample

	Movers	Non-Movers	Diff
Panel A:	**Moved In**	**Never Co-Resided**	
Age	21.504	21.860	-0.356
	(1.861)	(1.730)	
Male	0.524	0.360	0.165
White	0.848	0.642	0.206*
Employed	0.728	0.750	-0.011
Married	0.417	0.115	0.302*
Number of Kids	0.262	0.628	-0.366
	(1.092)	(0.926)	
Education			
Less than HS	0.196	0.077	0.119
HS	0.193	0.353	-0.160
Some College	0.410	0.477	-0.067
Associate's	0.051	0.033	0.019
Bachelor's	0.150	0.061	0.089
Master's+	0.000	0.000	0.000
Health (1:Poor-5:Excellent)	3.979	3.729	0.250
	(1.055)	(0.875)	
Last Year's Income ($1k)	21.516	19.341	2.175
	(25.276)	(16.957)	
Net Worth ($1k)	15.419	2.074	13.344*
	(45.859)	(3.852)	
With Student Loans	13.701	-3.880	17.581**
	(45.278)	(14.930)	
Number of YAs	444	500	
Observations	1,544	1,446	

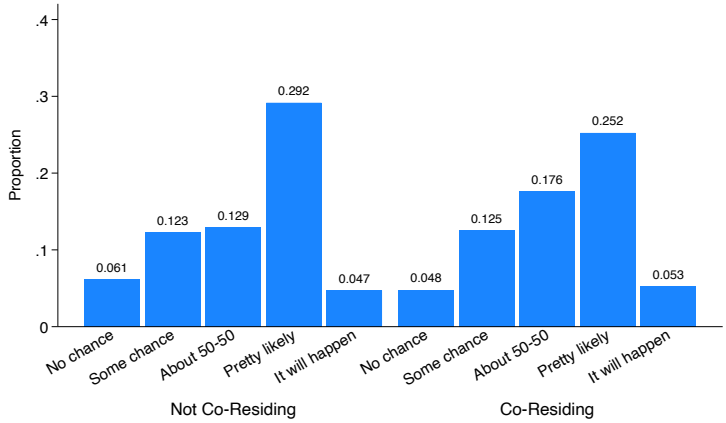
	Movers	Non-Movers	Diff
Panel B:	**Moved Out**	**Always Co-Resided**	
Age	20.760	20.959	-0.200
	(0.994)	(0.728)	
Male	0.535	0.504	0.030*
White	0.810	0.712	0.098
Employed	0.765	0.851	-0.086
Married	0.016	0.000	0.016
Number of Kids	0.066	0.113	-0.046
	(0.416)	(0.311)	
Education			
Less than HS	0.205	0.135	0.071
HS	0.190	0.149	0.041
Some College	0.543	0.488	0.055
Associate's	0.030	0.168	-0.139**
Bachelor's	0.032	0.060	-0.028
Master's+	0.000	0.000	0.000
Health (1:Poor-5:Excellent)	3.630	3.772	-0.142
	(1.239)	(0.589)	
Last Year's Income ($1k)	9.728	13.749	-4.021
	(11.046)	(10.073)	
Net Worth ($1k)	3.822	6.240	-2.418
	(7.879)	(8.942)	
With Student Loans	-0.673	1.356	-2.028
	(18.494)	(11.276)	
Number of YAs	944	524	
Observations	3,210	1,504	

Note: Statistics are presented for the event study sample at the baseline. Last year's income and net worth are adjusted to 2015 dollar units. Estimates are weighted and standard errors are in parentheses and adjusted for sample design. Source: PSID Transition to Adulthood Supplement (2007 - 2019). * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

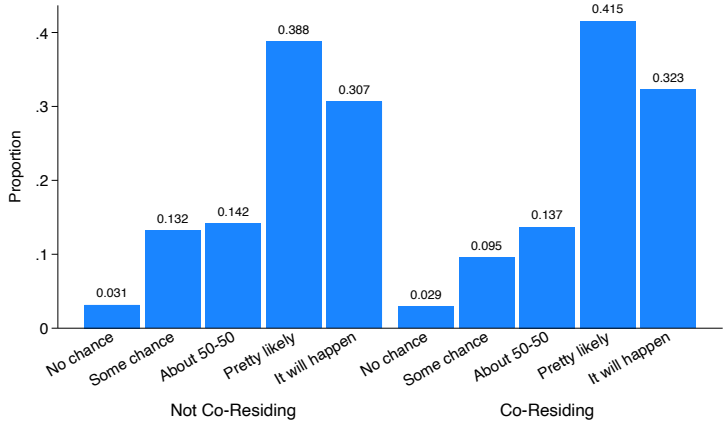
Figure 2: Responses of Likelihood Items by Co-Residence Status



(a) Likelihood of Marriage



(b) Likelihood of a LT Committed Relationship/Commitment Ceremony



(c) Likelihood of Kids

Note: Responses are shown for the YAs in the IV sample who are not married, parents, or currently in a long-term relationship. The likelihood of a LT relationship item are only asked to YAs who did not respond "It will happen" to the likelihood of marriage question. Data is weighted using survey weights. Source: Transition to Adulthood Supplement (2005 - 2015).

The 2005 to 2015 TAS surveys include questions about several family formation milestones. YAs are asked to state their ideal number of children and to rate their chances of marriage, a long-term (LT) committed relationship or commitment ceremony, and having children.[6] Possible responses for the likelihood questions include: No chance, Some chance, About 50-50, Pretty likely, It will happen, Don't Know, and NA; refused. If a response other than "No chance" is given, they are asked at what age they think these events will occur. The question about a LT relationship is asked only if the response to the likelihood of marriage item is not "It will happen". The sample used for the IV consists of never-married YAs with no children and are not currently in a LT relationship. Observations are dropped if all responses to the family formation questions are missing or only observed once in the sample. Figure 2 presents the distribution of responses to the likelihood questions by co-residence status. The majority of YAs express confidence that they will eventually get married. Over 50% of YAs in both groups report that it is pretty likely or that it will happen, while fewer than 2% report that there is no chance. While differences between co-residing and non-co-residing YAs are generally small for marriage, they are more pronounced for parenthood. YAs living with their parents are somewhat more likely to report a high likelihood of having children in the future. In the event that they do not marry, co-residing YAs are more optimistic about forming a LT relationship compared to YAs living independently. Regardless of co-residence status, under 40% of YAs believe that it is likely or certain to happen.

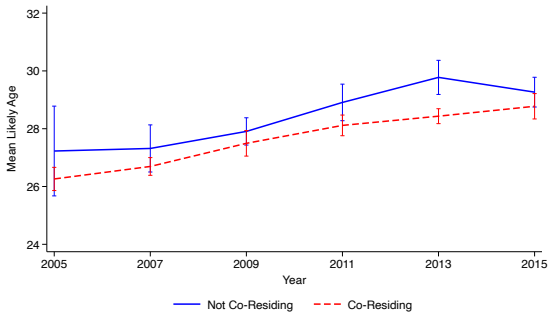
Figure 3 plots the average expected age at which YAs anticipate marriage, a LT relationship to begin, and their first childbirth, along with their ideal total number of children, over time. The mean expected marriage age is increasing steadily over the years for co-residing YAs. For the YA living independently, the average age rises until 2013 and then declines slightly in 2015. Anticipated age at the start of a LT relationship tends to be lower than expected marriage age for both groups, but is still gradually rising over the sample period. The mean expected age of becoming parents ranges from 27 to 31 years old, and increases over time. Co-residing YAs consistently anticipate forming their own families earlier than YAs living independently. Family size is modest, with the overall average ideal number of children below three for both co-residence groups. Prior to 2013, co-residing YAs consistently reported a higher ideal number of children than those living independently, with the two groups converging in 2013.

Appendix Table A.2 provides a comparison of baseline characteristics for YAs included in the IV estimation. It compares the YAs who co-resided at some point in the sample to YAs who were never observed to co-reside.

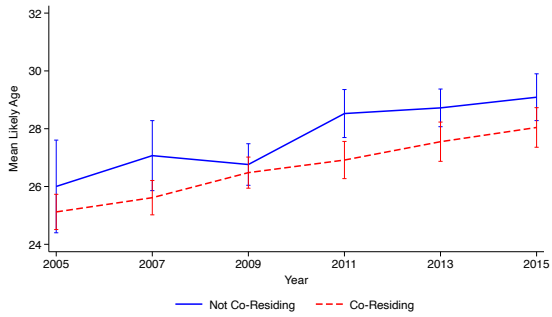
The TAS employs a complex survey design and is subject to panel attrition; therefore, sample weights are

6. The likelihood of marriage and children questions are asked only if the YA is not currently married and has no biological, adopted, or step-children, respectively.

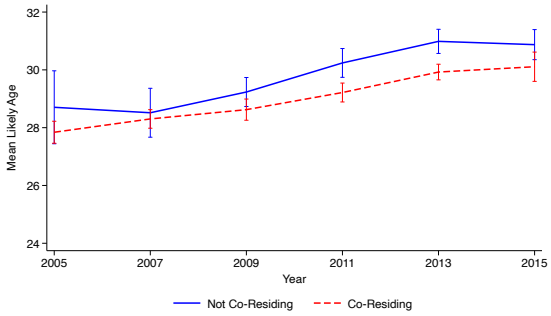
Figure 3: Average Expected Age at Family Formation Events by Co-Residence Status



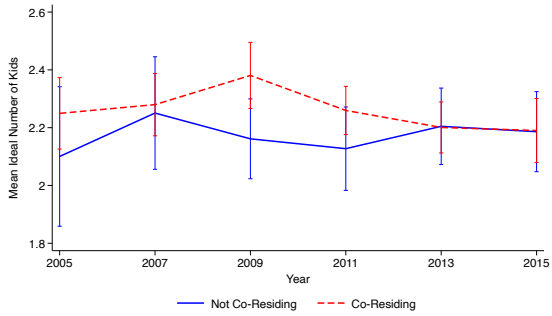
(a) Likely Age at Marriage



(b) Likely Age Begin LT Relationship



(c) Likely Age at First Child



(d) Ideal Total Number of Kids

Note: This figure shows the expected average age at several family formation events over time by co-residence status. Data is weighted using survey weights. Source: Transition to Adulthood Supplement (2005 - 2015).

applied to ensure representativeness of the U.S. population. In Stata, I use the `svy` command, which accounts for stratified sampling. Ignoring stratification is usually a conservative approach, as it typically increases standard errors. For commands that do not support survey adjustments, I manually apply survey weights and cluster standard errors by strata and primary sampling units (PSU). Estimating simple regressions using `svy`-supported commands yields comparable results: coefficient estimates remain unchanged and standard errors are similar, though typically smaller when the full survey design is incorporated.

3.2 Other Data Sources

To construct the instrument in the IV analysis, I require data on rental costs and family income for each state over time. It is difficult to find yearly state data on median rental costs prior to 2001, so the U.S. Department of Housing and Urban Development's (HUD) Fair Market Rent (FMR) estimates are used as a proxy. Since 1974, FMRs have been used primarily to control costs in the Section 8 program, which helps low-income households obtain rental housing in the private rental market. It sets limits on the units that can be rented in the private market (certificate program) and on the subsidy provided to the household (voucher program). Beginning in 1995, the FMR is defined as the 40th percentile of gross rents for standard quality units within a metropolitan area or non-metropolitan county.[7] To calculate the average FMR of each state, I multiply the cost of 0 to 4 bedroom rentals by 12 to get the yearly value, and then average them over the state. The median family incomes are taken from the estimates provided in HUD's Income Limits dataset, which are used to determine household eligibility for assisted housing programs. State median family income estimates are obtained by averaging over each metropolitan area and non-metropolitan county within the state. Using HUD estimates for both rent and family income ensures consistency and methodology across states and years. However, this FMR to median family income value is likely to be an underestimate of the true rent-to-income ratio, as the FMRs are 40th percentile estimates.

Unaffordability is a weighted variable, so data on county and state populations are needed. The U.S. Census Bureau CO-EST series provides annual county resident population estimates. With each new release, estimates are revised back to the last census. State population values are obtained by summing up the county estimates to maintain consistency.

7. From 2001 to 2017, some areas had FMRs calculated at the 50th percentile level instead of at the 40th percentile. To maintain a consistent definition of FMRs, the 50th percentile FMR is rescaled to the 40th percentile. Using data from HUD's 50th Percentile Rent Estimates dataset, I average the ratios between the 40th and 50th percentile rents to obtain an adjustment factor of 0.94.

4 Results

4.1 Event Studies

A YA is considered to have moved in at year t when they indicate that they are living in the parental home after previously stating to have lived elsewhere; a move-out event is defined similarly. YAs may move several times during the survey, so a move is defined at the first observation. Movers are compared to those whose co-residence status did not change; YAs who moved in are compared to YAs who remain living independently and the control group for those who move out are the YAs who continue to co-reside. For each possible combination of outcome and move event, I estimate Equation (1) with three different estimators: first estimating the typical TWFE, the second using the stacked approach, and finally, with the CS estimator.[8] In this paper, the different estimators produce similar treatment effects.

4.1.1 Wealth

I start by looking at the differences in wealth around the time of a move. When YAs move back into the parental home, they save on housing costs. This could be used to pay off any existing debt faster than if they were living on their own. The extra funds could also be saved so that the YA has enough to move back out in the future. Depending on which goal is more important and feasible, YAs who co-reside may have a higher net worth because of their ability to pay off debt or save faster. When a YA moves out, expenses will immediately increase. However, YAs who are able to leave the parental home are likely to be financially better off than those who continue co-residing with their parents. It is more difficult to hypothesize how wealth is impacted when a YA decides to move out.

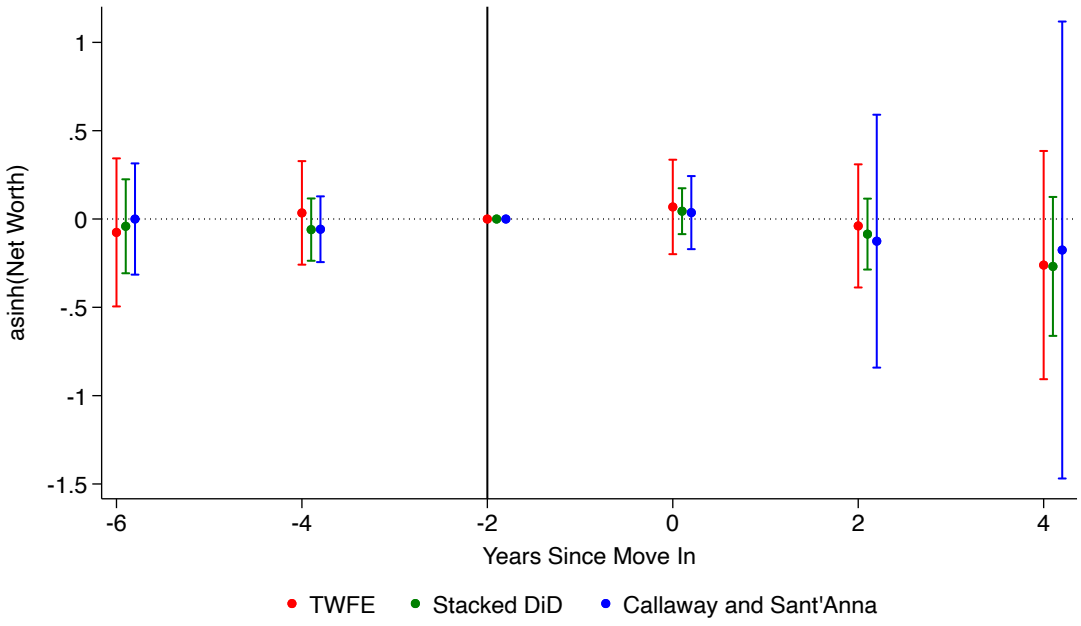
Figure 4 presents the estimates for net worth. Looking at panel (a), there is a zero effect. Similarly, after a move out of the parental home, no significant differences are found. Four years prior to the move out of the parental home, the CS and stacked DiD estimates indicate that the net worth of YAs who eventually move out are less than those who did not move out, relative to the year before the move. The estimates are similar to the TWFE results, and all three estimators generally rule out effects smaller than -1 or larger than 1 on the inverse hyperbolic sine scale.[9,10] The event studies that look separately at total assets, debt,

8. The TAS is not a balanced panel, but the CS estimator does not require a strongly balanced panel to apply the panel estimators. However, when it calculates each treatment effect, only YAs with observations at the move and one period after are used. The estimator will assume cross-sectional data if no panel identifier is declared, which will use all the data in an unbalanced panel. The repeated cross-section estimator first calculates conditional means before estimating the changes over time. The panel estimators calculate the first difference.

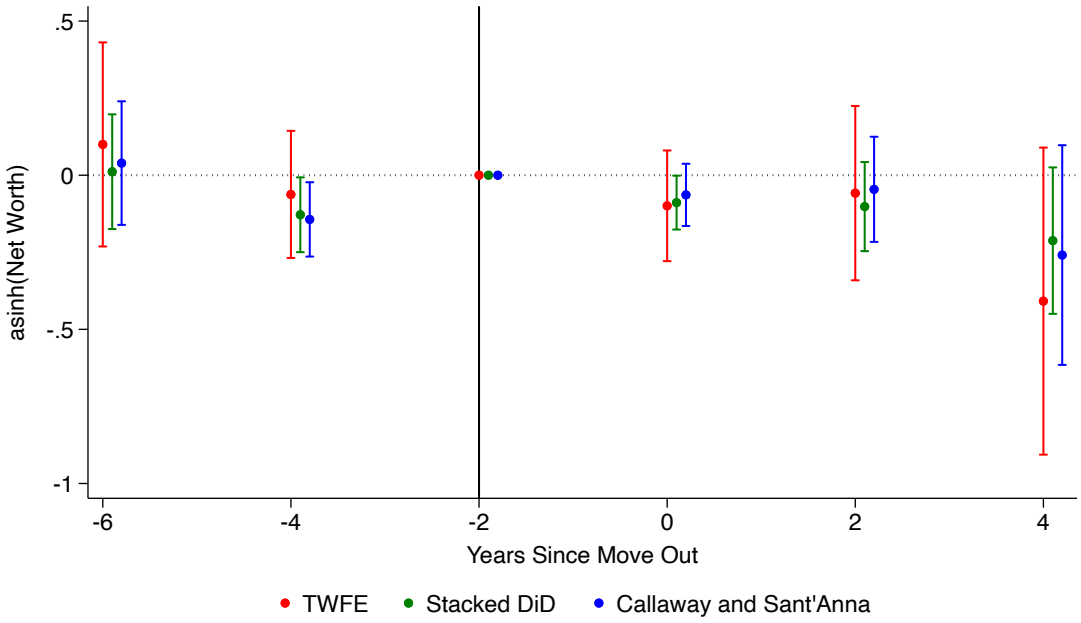
9. Chen and Roth (2024) note that when an outcome can be zero-valued and is transformed into the inverse hyperbolic sine, the estimated coefficient is sensitive to the units of the outcome variable. The treatment effect is a combination of both the extensive and intensive margin effects and that there is no treatment parameter that is the average of individual-level treatment effects, unit invariant, and point-identified. Thus, the estimated coefficient should not be interpreted as a percentage effect.

10. I also estimate the event studies using untransformed outcome variables, measured in thousands of dollars. For net worth excluding student loans, the results for a move-in remains unchanged: no pre-trends are detected, and estimated effects range

Figure 4: Net Worth Event Studies



(a) Move In



(b) Move Out

Note: Treatment effects are presented for the inverse hyperbolic sine of net worth in thousands of dollars. Source: PSID Transition to Adulthood Supplement (2007 - 2019).

and net worth with student loans are displayed in Appendix Figures A.1 to A.4.

The existing literature has emphasized parental co-residence as a mechanism for improving YAs' financial outcomes. By reducing housing costs, co-residence is thought to facilitate debt repayment and increased savings. However, the event study analyses show little evidence of net worth accumulation or debt reduction following the move back into the parental home. Several factors may explain this discrepancy. Measurement error in both wealth and co-residence may attenuate true effects. Wealth components may be misreported or underreported, and move-in dates may not align with survey years. It is also likely that the effects of co-residence may not appear immediately as financial recovery may be a long-term outcome. There is also the issue of selection as YAs who return to the parental home are often economically vulnerable, so co-residence may help to prevent further financial decline rather than improve their situation. In the next section, I examine how family formation outcomes shift around these co-residence transitions.

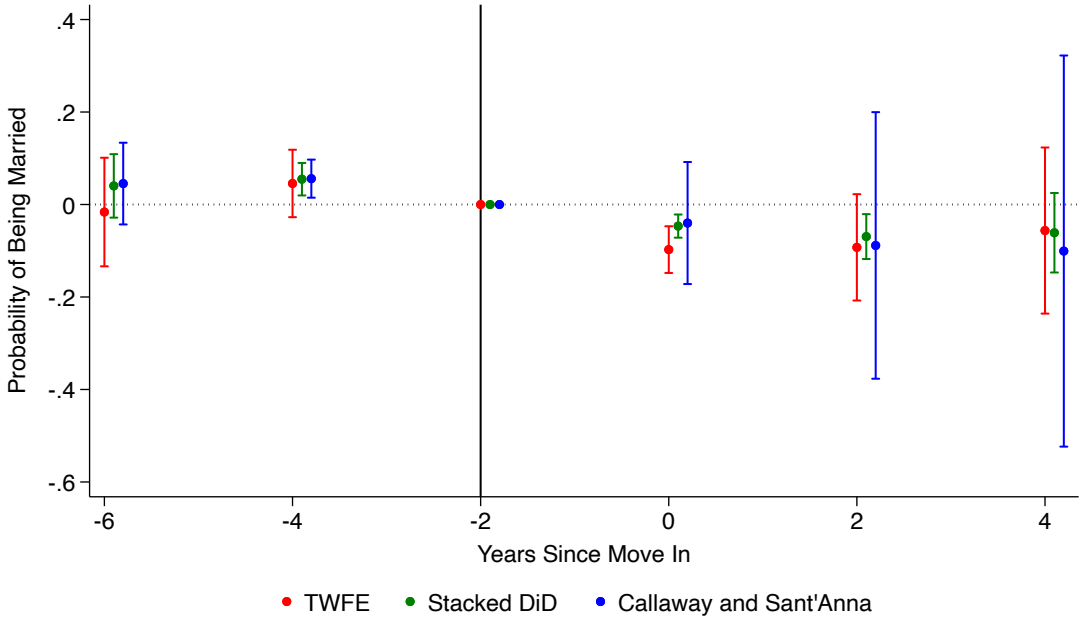
4.1.2 Family Formation

As YAs grow older, they may want to leave their parents' home to start their own families. The hypothesis is that YAs that are not married or parents themselves are more likely to co-reside. Marriage may prompt a preference for independent living as couples seek to establish their own households. Similarly, as they start their fertility journey, there may be an increase in the desire for space and privacy.

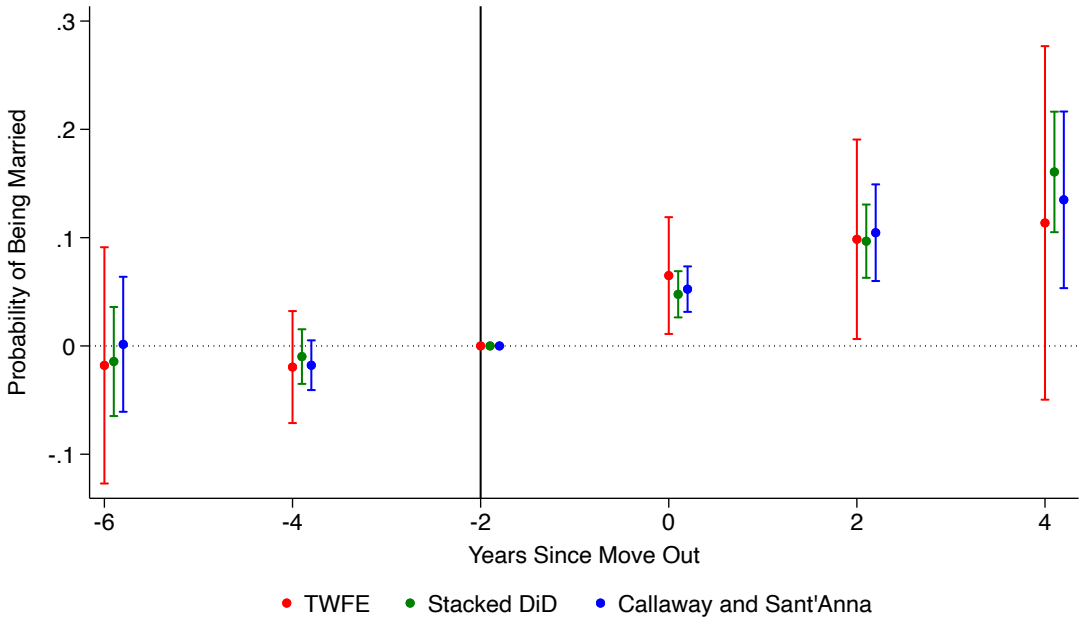
I begin by studying the marital status of the YA. Marriage is a dummy variable with 1 indicating currently married and 0 otherwise. Panel (b) of Figure 5 shows significant differences for all estimators in the probability of being married between movers and non-movers after the YA is observed to move out and two years after. The coefficients range from around 5 percentage points in the year of the move to approximately 10 percentage points two years later. This supports the hypothesis that YAs would prefer to live separately with their significant other after marriage. In the year of the move back into the parental home, there is a significant negative difference in the probability of being married between YAs who returned home and those who remained living independently, according to both the TWFE and stacked DiD estimates. Additionally, four years prior to the move, YAs who eventually move are about 5 percentage points more likely to be married than the YAs who are always observed to live independently. This is significant for the stacked and CS estimates and insignificant for the TWFE. One possible explanation is that the YAs are getting divorced or separating. Appendix Figure A.5 presents the estimation results using a dependent variable equal to 1 if the YA is currently divorced or separated; YAs do not seem to be moving back home for this reason.

from -$1,000 to $2,000, with 95% confidence intervals including zero. For a move-out, coefficients are statistically significant two years after the event, with point estimates roughly 2.3 times their standard errors. This effect is likely driven by YAs with relatively high levels of wealth.

Figure 5: Marriage Event Studies



(a) Move In



(b) Move Out

Note: Marriage is a dummy variable with 1 indicating that the YA is married and 0 otherwise. Source: PSID Transition to Adulthood Supplement (2007 - 2019).

Next, I look at the number of children a YA has. Panel (a) of Figure 6 shows that the TWFE estimates suggest that YAs who return to the parental home have fewer children compared to those who remain living independently, whereas the other two estimators do not find statistically significant differences. For a move out, those who leave their parents' home have more children than YAs who continue co-residing in the year of the move and two years after. Compared to the survey prior to the move, the difference is around 0.05-0.1 in the year of the move and then increases to about 0.08-0.19 two years later. The instantaneous effect is significant for all three estimators. The TWFE is marginally insignificant two years after the move.

In the appendix, I check for gender differences in the probability of marriage, divorce or separation, and the total number of children. Across all outcomes, no statistically significant differences are observed for either type of move. Together, the results imply that it is the never-married YAs that are getting married and making the move out of the parental home.

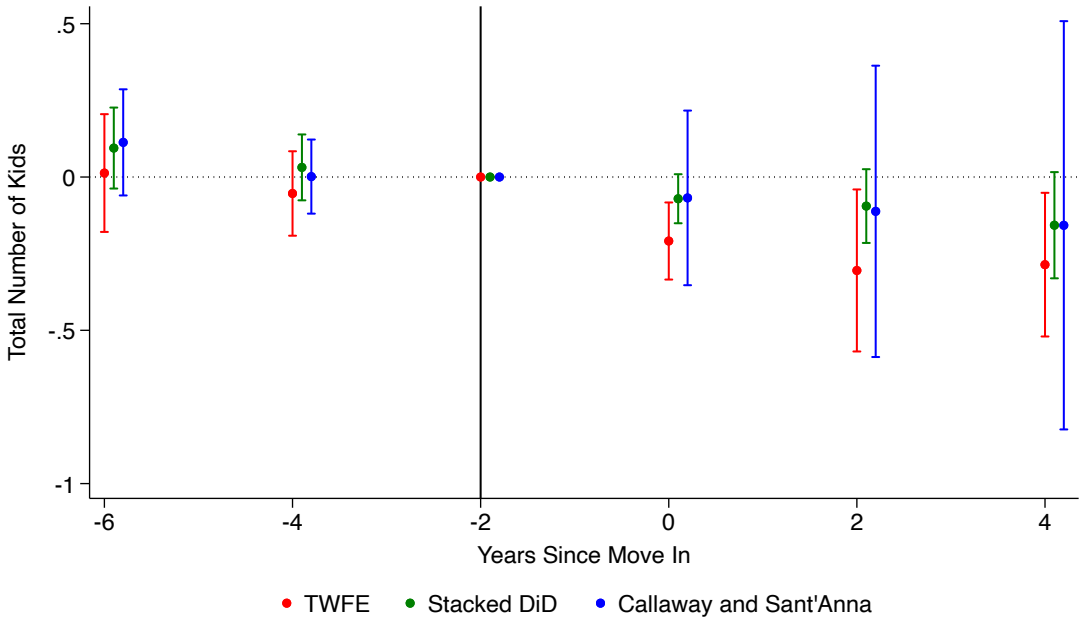
Another possible explanation for moving back into the parental home is the declining health of the YA. Here, health is a dummy variable with 1 indicating that the YA reported that they are in at least good health and 0 if they report that their health is fair or poor; results are presented in Appendix Figure A.9. Estimates do not support the idea that the YA's health is a significant factor in the decision to move back into or out of the parental home.

In general, the urge to move out is stronger than the urge to move back home. The significant patterns observed for marriage and total number of children are expected as YAs are choosing when they would like to establish independent households, which prior research supports. YAs who start forming their own families are more likely to live independently than YAs who are still single with no kids. The literature has also documented that co-residence is associated with delayed family formation, which I do not find strong evidence for. This may indicate that the delaying effects are not immediate, that individuals who return have already delayed these milestones prior to the transition, or that co-residence reflects the delays in family formation rather than causing it. The decision to co-reside, one's financial status, total number of kids, and marital status are all jointly determined, making it impossible to know which way causation runs. To examine whether co-residence itself influences these outcomes, I turn to the IV approach.

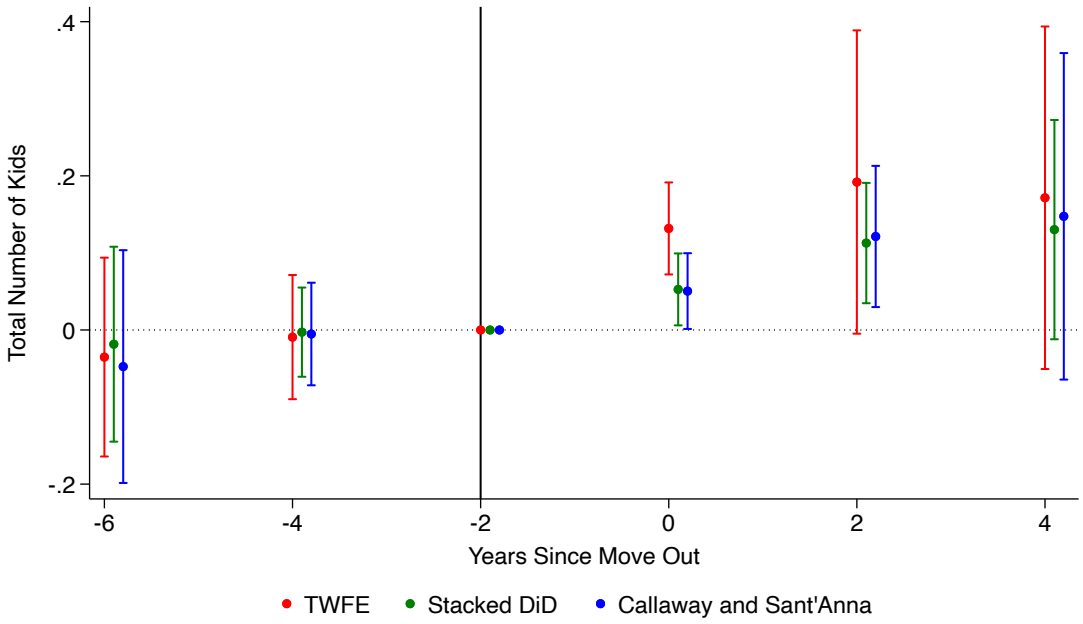
4.2 IV

The instrument used for co-residence is the predicted rental unaffordability of state s in the corresponding year. Figure 7 presents the estimated coefficients used to calculate the instrument ($\widehat{\rho_s}$ of Equation (5)). There is notable regional variation in states' responsiveness to regional unaffordability shocks. States in the Midwestern and the Southern region show higher estimated sensitivities, while the Northeast and West Coast

Figure 6: Total Number of Kids Event Studies



(a) Move In

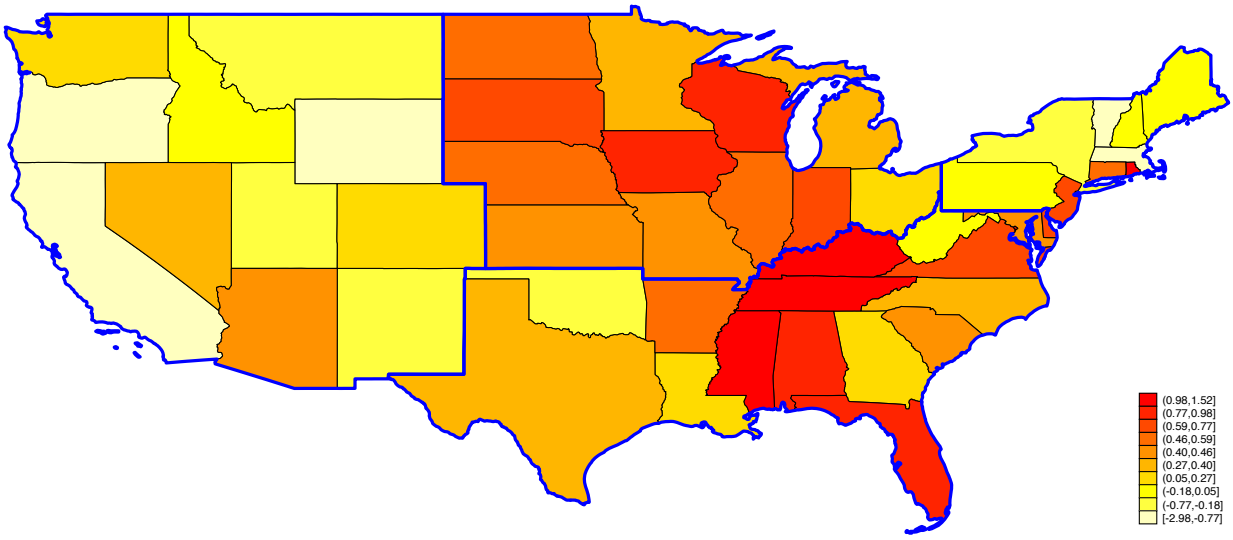


(b) Move Out

Source: PSID Transition to Adulthood Supplement (2007 - 2019).

reveal weaker or even inverse relationships. States with negative estimated coefficients (e.g., California and New York) suggest that their housing unaffordability does not move together with regional unaffordability shocks. This pattern may reflect stricter housing policies and increase out-migration towards the more affordable nearby states.

Figure 7: State Sensitivity Estimates



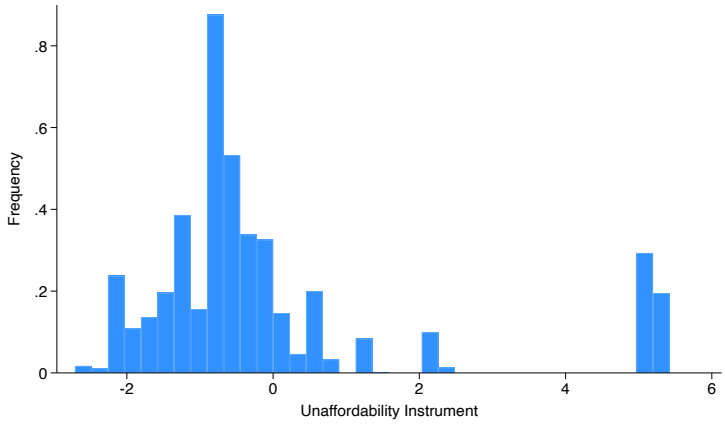
Note: The graph presents the estimates of $\hat{\rho_s}$, the state's responsiveness to regional housing cost pressures.

Figure 8 illustrates the unaffordability instrument used to predict co-residence. Panel (a) displays the histogram of the instrument's distribution across the sample. Values are roughly centered around zero and skewed towards the right. Panel (b) shows a binned scatterplot of the average co-residence rates. The specification includes region, year, and individual fixed effects, along with an age control. Estimates are weighted and standard errors are clustered by the strata and PSU. While the fitted trend is upward, there is substantial scatter around the line, suggesting a weak first stage. In the last panel, the cumulative distribution functions (CDF) of the instrument by YA's co-residence status is plotted. The two CDFs lie almost directly on top of each other, another sign that the instrument may have low predictive power for co-residence.

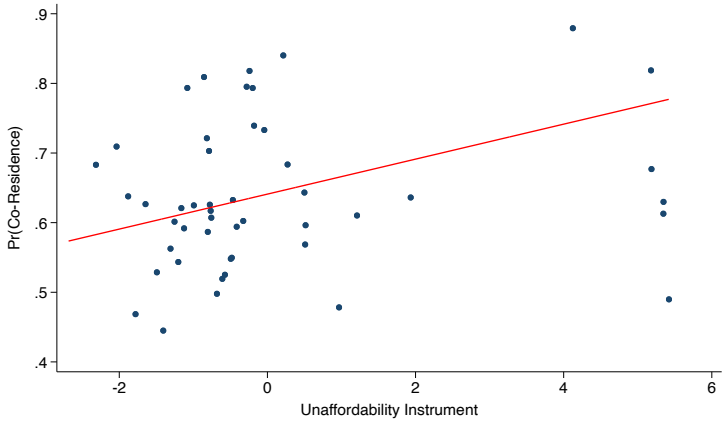
4.2.1 Wealth

To begin, I look at how co-residence affects the YAs' net worth. From the event studies, selection into and out of co-residence based on net worth is not strong. Table 2 presents the net worth results. Looking first at the OLS estimates in columns (3) and (6), YAs who co-reside have a higher net worth compared to YAs who do not. The coefficient is statistically significant at the 10% level when student loans are excluded and

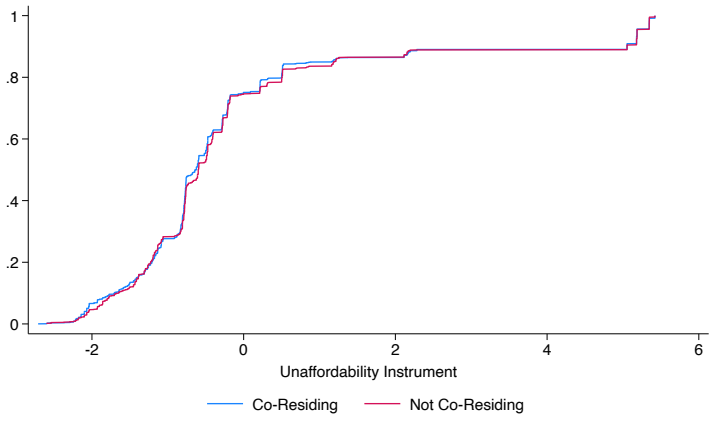
Figure 8: Unaffordability Instrument



(a) Histogram



(b) Binscatter



(c) CDF

Note: This figure illustrates the construction and relevance of the unaffordability instrument used to predict co-residence. Panel (a) presents the histogram of the instrument. Controlling for age and individual, year, and region fixed effects, panel (b) displays the relationship between average co-residence rates by bins of the instrument. Estimates are weighted and standard errors are clustered by strata and primary sampling units. Panel (c) plots the CDF of the instrument by co-residence status.

at the 1% level when we include student loans in the measure. The average value of the inverse hyperbolic sine of net worth is 0.118 higher (excluding student loans) and 0.305 higher (with student loans) for YAs who co-reside compared to those who do not. Evaluated at the mean net worth, a YA who is co-residing has approximately $571 more net worth without student loans and $953 more when student loans are included. These values are economically large, corresponding to 12% and 32% higher net worth, respectively. It is especially meaningful in the specification with student loans as it implies less debt is being held by the YA. Appendix Table A.3 displays the separate assets and debt results.

Table 2: Regressions for asinh(Net Worth)

	Co-Residence	Excluding Student Loans			Including Student Loans		
	FS	OLS	RF	IV	OLS	RF	IV
Unaffordability	0.025*		0.069			0.104	
	(0.014)		(0.050)			(0.073)	
Co-Residence		0.118*		2.736	0.305***		4.141
		(0.061)		(2.126)	(0.102)		(2.991)
Mean of Dep. Var. ($1k)		4.737	4.737	4.737	-2.960	-2.960	-2.960
Mean of Dep. Var. (asinh)		1.135	1.135	1.135	-0.198	-0.198	-0.198
F	3.403						
N	5001	5001	5001	5001	5001	5001	5001

Note: Values of the outcome variables are in thousands of dollars and transformed to the inverse hyperbolic sine. Standard errors are in parentheses and adjusted for sample design. Reported F-statistic tests for the significance of the unaffordability instrument. All regressions include individual, region, and year fixed effects, along with a control for age. Sources: PSID Transition to Adulthood Supplement (2005 - 2015). * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Turning to the first stage, the coefficient indicates that a 1% increase in rental unaffordability is associated with a 0.025 percentage point increase in the probability of co-residing. It is significant at the 10% level, but the F-statistic is only 3.403, well below conventional thresholds, indicating a weak instrument. When instruments are weak, they can bias estimates towards OLS and produce incorrect standard errors and confidence intervals. Furthermore, reduced form estimates are also statistically insignificant. Altogether, the findings suggest that the unaffordability instrument is not highly correlated with co-residence and results should be interpreted with caution.

Given the weakness of the instrument, it is important to conduct weak-IV robust inference. When the first stage is weak, conventional IV methods can yield biased estimates and invalid inference. In this paper, I report the Montiel Olea and Plueger (2013) effective F-statistic and construct the Anderson-Rubin (1949) confidence intervals (AR CI), both of which remain valid in the presence of a weak first stage.

The effective F-statistic is specific to two-stage least squares (2SLS) and limited information maximum likelihood estimation. It is equivalent to the conventional first stage F-statistic under homoskedastic errors, but adds a correction factor for heteroskedasticity. The statistic is a weighted sum of non-central χ^2 random variables, and like the conventional F-statistic, is rejected when it exceeds a critical value. The 2SLS critical values used in this paper are displayed in Table 3.

Table 3: Montiel Olea and Plueger Critical Values

% of Worst Case Bias	2SLS
$\tau = 5\%$	37.418
$\tau = 10\%$	23.109
$\tau = 20\%$	15.062
$\tau = 30\%$	12.039

In contrast, the AR CI is constructed by inverting a test robust to weak instruments and follows a χ^2 distribution. This confidence set provides a range of plausible parameter values that, with probability $1-\alpha$, includes the true coefficient. With a single instrument, the AR CI can be a bounded interval, the real line, or the real line excluding an interval. Unbounded or infinite confidence sets indicate that the data do not allow us to conclude that the parameter is identified- essentially, that the instrument is weak.

The weak-IV inference results for net worth are reported in Table 4. Commands to obtain the effective F-statistic and AR CIs are not compatible with the `svy` prefix in Stata, so I run the analysis using standard errors clustered by strata and PSU. As expected, the standard errors are larger when failing to adjust for stratification. The effective F-statistics are 41.45, exceeding the 5% critical value of 37.42, suggesting that the first stage is strong. However, the AR p-values are small and the corresponding confidence intervals span the entire real line. This implies that despite a strong first stage, the IV estimator is uninformative about the true effect. Weak-IV inference for total assets and debt are included in Appendix Table A.4.

4.2.2 Family Formation

Next, I examine how parental co-residence may affect a YA's expectation regarding marriage and parenthood. As described earlier, the 2005 - 2015 TAS surveys ask YAs about the likelihood that they will marry, enter a LT relationship (if not married), and become a parent. Responses are recorded on a 5-point Likert scale, which I convert to probabilities for this analysis (i.e., 0 = No chance, 0.25 = Some chance, 0.5 = About 50-50, 0.75 = Pretty likely, 1 = It will happen).

Table 5 presents the OLS and IV results. Across outcomes, no statistically significant effects are observed.

Table 4: Weak-IV Inference for asinh(Net Worth)

	Student Loans	
	Without	With
Co-Residence	2.736	4.141
	(2.170)	(3.062)
Eff. F	41.454	41.454
AR p-value	0.107	0.137
AR CI	(-∞,∞)	(-∞,∞)
N	5001	5001

Note: Standard errors are in parentheses and clustered at the strata and PSU level. Effective F refers to Montiel Olea and Pflueger (2013) F-statistic. AR is the Anderson-Rubin (1949) test and the corresponding confidence interval. All regressions include an age control and fixed effects for individual, region, and year. Sources: PSID Transition to Adulthood Supplement (2005 - 2015). * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 5: Likelihood Regressions

	Likelihood of Marriage				Likelihood of LT Relationship				Likelihood of Kids			
	OLS	FS	RF	IV	OLS	FS	RF	IV	OLS	FS	RF	IV
Unaffordability		0.025*	-0.004			0.045***	0.010			0.025*	0.008	
		(0.014)	(0.009)			(0.016)	(0.015)			(0.014)	(0.010)	
Co-Residence	-0.009			-0.175	-0.007			0.225	-0.000			0.338
	(0.011)			(0.329)	(0.016)			(0.346)	(0.011)			(0.473)
Mean of Dep. Var.	0.736		0.736	0.736	0.553		0.553	0.553	0.718		0.718	0.718
F		3.403				8.558				3.395		
N	5001	5001	5001	5001	3272	3272	3272	3272	4998	4998	4998	4998

Note: The dependent variable is a 5-point Likert scale converted into probabilities (i.e., 0:No chance, 0.25:Some chance, 0.5:About 50-50, 0.75:Pretty likely, 1:It will happen). Standard errors are in parentheses and adjusted for sample design. Reported F-statistic tests for the significance of the unaffordability instrument. All regressions include individual, region, and year fixed effects, along with a control for age. Sources: PSID Transition to Adulthood Supplement (2005 - 2015). * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 6: Regressions for Expected Age

	Likely Age at Marriage				Likely Age Begin LT Relationship				Likely Age at First Child			
	OLS	FS	RF	IV	OLS	FS	RF	IV	OLS	FS	RF	IV
Unaffordability		0.028**	-0.062			0.051**	-0.084			0.021	0.014	
		(0.014)	(0.093)			(0.020)	(0.172)			(0.015)	(0.069)	
Co-Residence	0.099			-2.209	0.200			-1.650	0.211			0.673
	(0.196)			(4.002)	(0.315)			(3.606)	(0.149)			(3.174)
Mean of Dep. Var.	28.104		28.104	28.104	27.192		27.192	27.192	29.452		29.452	29.452
F		4.227				6.423				1.830		
N	4868	4868	4868	4868	2946	2946	2946	2946	4791	4791	4791	4791

Note: Standard errors are in parentheses and adjusted for sample design. Reported F-statistic tests for the significance of the unaffordability instrument. All regressions include individual, region, and year fixed effects, along with a control for age. Sources: PSID Transition to Adulthood Supplement (2005 - 2015). * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

The first stage coefficients for marriage and parenthood expectations are small and only significant at the 10% level, with F-statistics below 4, indicating weak instrument relevance. For expectations of a LT relationship, the first stage coefficient implies that a 1% increase in unaffordability increases the probability of co-residing by approximately 0.045 percentage points, which is statistically significant at the 1% level. However, the corresponding F-statistic remains below 10. Respondents are also asked about their ideal number of children, which are presented in Appendix Table A.5. The weak-IV analyses for these outcomes are reported in Appendix Table A.6. Results are similar to those found for net worth.

If the YA reports at least some chance of the above events occurring, they are subsequently asked to report the age at which they expect them to occur. Results are presented in Table 6. Similar to the regressions for the likelihood outcomes, no statistically significant effects are detected in the OLS and IV regressions. Again, the first stage F-statistics are extremely low, indicating weak instrument relevance.

Table 7: Weak-IV Inference for Expected Age

	Marriage	LT Relationship	First Child
Co-Residence	-2.209	-1.650	0.673
	(3.776)	(3.553)	(3.239)
Eff. F	53.038	68.265	26.025
AR p-value	0.487	0.603	0.844
AR CI	(-∞,5.12]	(-∞,4.68]	(-∞,∞)
N	4868	2946	4791

Note: Standard errors are in parentheses and clustered at the strata and PSU level. Effective F refers to Montiel Olea and Pflueger (2013) F-statistic. AR is the Anderson-Rubin (1949) test and the corresponding confidence interval. All regressions include an age control and fixed effects for individual, region, and year. Sources: PSID Transition to Adulthood Supplement (2005 - 2015). * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

The effective F-statistics for age at first marriage and at the start of a LT relationship are well above the critical value, indicating a strong first stage. However, the AR p-values remain small (columns (2) and (3) of Table 7). The corresponding AR CIs are bounded on one side with zero within its bounds, therefore we cannot reject the null of no effect. For age at first child, the effective F-statistic (26.03) falls below the 5% critical value (37.42), suggesting that the instrument may be weak in this specification as it cannot guarantee less than 5% bias. Additionally, the AR CI spans the entire real line, so the point estimate is not identified.

Together, these results strengthen the conclusions from the net worth analysis. No statistically significant effects are detected, and the first stages consistently indicate that the rental unaffordability estimate is a weak instrument.

5 IV Robustness and Extensions

In this section, I conduct robustness checks and extend the previous analysis to examine whether the main IV results hold. I begin by examining different subsamples to evaluate whether the weak instrument concern persists. I also adjust the construction of my instrument to test its relevance and strength.

First, I restrict the sample to YAs who are observed to reside in more than one state during the study period. This allows me to test whether geographic mobility is important in identifying effects of unaffordability shocks. Sample size decreases substantially, from 5,001 to 1,025 observations. Across specifications, the first stage relationships weaken and IV estimates remain statistically insignificant. Effective F-statistics fall far below the critical values, and the AR CIs include the entire real line. This finding reinforces weak identification concerns, although power is weak when limiting the analysis to movers only.

I also examine how results may differ by gender, race, and parental income. For each characteristic, the models are estimated separately for each subsample. This ensures maximum flexibility as different relationships across groups are permitted. For women, all IV estimates are statistically indistinguishable from zero. Effective F-statistics are below the critical values and the coefficients are not identified (i.e., the AR CI is the real line). A similar pattern is seen for men, except for the likelihood of a LT relationship. The first stage and reduced form coefficients are statistically significant at the 10% level for men, but OLS and IV estimates are not. Additionally, the AR CI remains unbounded despite a significant effective F-statistic.

To examine heterogeneity by race, I split the sample into two groups: white and non-white. Although the survey provides more detailed categories, the sample sizes for most non-white groups are small. For the white subsample, the first stage remains weak. The instrument appears somewhat stronger for the non-white group, particularly in the wealth and likelihood regressions, but the concern remains.

Differences in family economic background may also shape parental co-residence decisions and their consequences. YAs from more disadvantaged families may be more likely to co-reside, while higher income parents are better positioned to support independent living. The PSID main sample provides information on parental income, which I use to assign YAs into quartiles based on the distribution of reported income in the year prior to the YA's first observation, with all income values adjusted to 2015 dollars. The quartiles are: up to \$25,000; \$25,001-\$54,000; \$54,001-\$101,000; and above \$101,000. The first stage regressions for the first, third, and fourth income quartiles yield very low effective F-statistics and unbounded AR CIs. For the second income quartile, the effective F-statistics are all above 160, but the AR CIs either span the real line or are unbounded at one end.

I also re-estimate the main regressions without individual fixed effects. These fixed effects absorb unobserved time-invariant individual characteristics and focus the analysis on changes within an individual

rather than between different young adults. To check the sensitivity of the results, I remove the individual fixed effects and instead include controls for total number of siblings, baseline health and education, parental income in the year prior to first observation, and indicators for white and male. Year fixed effects are still included in the regression, and I alternate between region and state fixed effects. With region fixed effects, first stage effective F-statistics generally exceed the 5% critical value, but AR confidence intervals continue to cover the real line. When switching to state fixed effects, the effective F-statistics are all above 140, and the AR confidence intervals tighten and no longer span the real line, although they remain wide and still include zero. Interestingly, the first stage co-residence coefficients are negative, suggesting that as unaffordability increases, YAs are less likely to co-reside, which is not what we would expect. Only the first stage regression for the likelihood of marriage passes the weak-IV test. The coefficient on unaffordability in column 3 of Table 8 indicates that a 1% increase in unaffordability is associated with a 0.71 percentage point decrease in the probability of the YA living with their parents. The IV estimate in column 5 is significant at the 5% level and shows that co-residing increases the likelihood that a YA believes they will get married in the future by 30.4 percentage points, which represents a large effect. However, we should interpret this result with caution as the sign of the first stage relationship does not align with our assumptions.

Table 8: Likelihood of Marriage Regressions (State FE, no ID FE)

	OLS	FS	RF	IV
Unaffordability		-0.710***	-0.216**	
		(0.241)	(0.107)	
Co-Residence	0.004			0.304**
	(0.012)			(0.150)
Mean of Dep. Var.	0.736		0.736	0.736
Eff. F		202.058		
AR p-value		0.032		
AR CI		[0.03,0.78]		
N	5001	5001	5001	5001

Note: The dependent variable is a 5-point Likert scale converted into probabilities (i.e., 1:No chance, 0.25:Some chance, 0.5:About 50-50, 0.75:Pretty likely, 1:It will happen). Standard errors are in parentheses and adjusted for sample design. Eff. F refers to Montiel Olea and Pflueger (2013) F-statistic which tests the significance of the unaffordability instrument. AR is the Anderson-Rubin (1949) test and the corresponding confidence interval. The weak-IV inference standard errors are manually adjusted for strata and PSU. All regressions include controls for age, a white indicator, number of siblings, baseline health status and education level, and parental income in the year prior to first observation, along with state and year fixed effects. Sources: PSID Transition to Adulthood Supplement (2005 - 2015). * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Next, I extend the definition of the unaffordability instrument. I begin by considering housing supply conditions. Low vacancy rates are associated with higher housing prices, making it more difficult to afford rental units. Conversely, the construction of new housing units increases supply, which can drive down housing costs. YAs living in states with low vacancy rates and limited new housing units may choose to relocate to nearby states with looser housing markets (i.e., higher vacancy rates and more new housing units). This affects the exogeneity of the instrument if unaffordability is correlated with regional housing supply shocks. To address this, I augment Equation (5) by including two region-level population-weighted controls for new housing units and vacancy rates, excluding the state of interest when constructing these measures. Formally, I estimate:

$$UnAfford_{st} = \rho_s UnAfford_{-srt} + \sigma_s NewHousingUnits_{-srt} + \psi_s VacancyRate_{-srt} + \alpha_s + \pi_t + \nu_{st} \quad (6)$$

The instrument is then constructed as the product of the estimated coefficient $\widehat{\rho_s}$ and the region-level rental unaffordability measure in year t.

Including these additional controls weaken the instrument substantially. Effective F-statistics are far below the 30% critical value and the AR CIs remain extremely wide and unbounded. A possible explanation is that the added controls absorb a significant portion of the identifying variation, leading to over-controlling and thus reducing the strength of the instrument.

Now, I turn to using changes in unaffordability rather than levels. It is plausible that individuals are more responsive to shocks in housing costs than to the overall level of unaffordability. I estimate the following equation:

$$\Delta UnAfford_{st} = \rho_s \Delta UnAfford_{-srt} + \alpha_s + \pi_t + \nu_{st} \quad (7)$$

and construct the instrument using the same procedure as the main analysis, but applied to differenced data. Results are consistent with the level-based specification. Weak-IV inference results show unbounded AR CIs and effective F-statistics fall below the 5% critical value. This finding is unsurprising, as unaffordability is relatively flat within regions and moves similarly across the country (see Figure 1). Moreover, co-residence status does not switch for many YAs during the sample period, resulting in limited within-person variation after differencing.

Finally, I extend the analysis by replacing FMR rates with state-level all-transactions house price index data from the U.S. Federal Housing Finance Agency, accessed via FRED. This provides a broader measure of housing costs and covers a longer time period. To maintain consistency, I also switch to using state population data from the same source, drawn from the U.S. Census's Median Household Income series. In

this specification, unaffordability is defined as:

$$UnAfford = log\left(\frac{HPI}{medInc}\right) \tag{8}$$

which captures the growth in housing prices to median household income over time. The construction of the instrument follows the same leave-one-out approach as the main analysis; housing supply controls and first differencing are not used. Overall, the results indicate a weak relationship between the unaffordability instrument, co-residence, and the outcome variables. Effective F-statistics are even lower than those in the main analysis.

Together, these results do not alleviate concerns about weak identification. These findings do not imply that housing unaffordability is unrelated to parental co-residence, but rather that it may not be the main mechanism driving YAs' co-residence decisions.

6 Conclusion

This paper examines how parental co-residence is associated with YAs' net wealth accumulation and their actual and expected family formation outcomes. Using rich panel data from the PSID TAS, I use event studies and IV methods to assess descriptive patterns and potential causal relationships, respectively.

The event study results show no significant differences in net worth around moves into or out of the parental home, but generally rule out effects smaller than -1 and larger than 1 on the inverse hyperbolic sine scale with 95% confidence. By contrast, transitions out of co-residence are more strongly associated with changes in family outcomes- specifically marriage and childbearing- than the transition into it. Other factors that might be expected to influence the decision to co-reside, such as health and divorce or separation, also show no significant differences between YAs who co-reside and those who live independently.

The IV analysis is designed to estimate causal effects using predicted state-level rental unaffordability as an instrument for co-residence, but it did not produce conclusive evidence. Across all outcomes, the instrument raises weak instrument concerns, and IV estimates are statistically insignificant. Although the association between parental co-residence and rental housing unaffordability is present, there is not enough variation in the instrument to confidently draw causal conclusions. The results are also likely to underestimate the true estimates as the unaffordability measure relies on FMRs and income estimates from HUD, rather than actual median rents and income experienced by renters.

These findings highlight the complexity of parental co-residence decisions. While housing unaffordability is relevant, YAs are likely to co-reside for other reasons such as cultural norms and intergenerational prefer-

ences. Future research should explore these additional motives and assess how co-residence affects long-term outcomes using richer or alternative data. This is especially important given both co-residence and wealth evolve slowly, and wealth may only respond over a longer horizon.

As parental co-residence becomes increasingly common, it is also important that we study how it helps (or hinders) YAs' ability to live independently in the future and start their own families. Identifying when co-residence acts as a stepping stone versus a barrier can inform future housing policies and support programs. The descriptive findings from the event studies provide insights into the timing and connection of several important life events, which can inform further research on the transition to adulthood and guide future structural work.

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Appendix

Table A.1: YA Movers Demographic Characteristics for Event Study Sample

	Only Moved In	Only Moved Out	Both Moved In and Out
Age	21.513	20.760	20.609
	(1.178)	(0.843)	(9.401)
Male	0.524	0.535	0.540
White	0.850	0.811	0.716
Employed	0.738	0.765	0.702
Married	0.420	0.016	0.067
Number of Kids	0.262	0.066	0.232
	(0.691)	(0.350)	(7.917)
Education			
Less than HS	0.194	0.205	0.393
HS	0.192	0.189	0.350
Some College	0.412	0.544	0.176
Associate's	0.051	0.030	0.044
Bachelor's	0.151	0.032	0.037
Master's+	0.000	0.000	0.000
Health (1:Poor-5:Excellent)	3.982	3.630	3.690
	(0.665)	(1.051)	(10.143)
Last Year's Income ($1k)	21.624	9.726	10.467
	(16.007)	(9.355)	(122.793)
Net Worth ($1k)	15.543	3.826	2.748
	(29.123)	(6.673)	(87.085)
With Student Loans	13.871	-0.662	-3.661
	(28.706)	(15.673)	(177.042)
Surveys Observed Co-Residing	1.003	1.005	1.971
	(0.063)	(0.090)	(9.411)
Surveys Observed Not Co-Residing	1.004	1.007	1.786
	(0.076)	(0.109)	(9.290)
Number of YAs	176	676	268
Observations	535	2,201	1,009

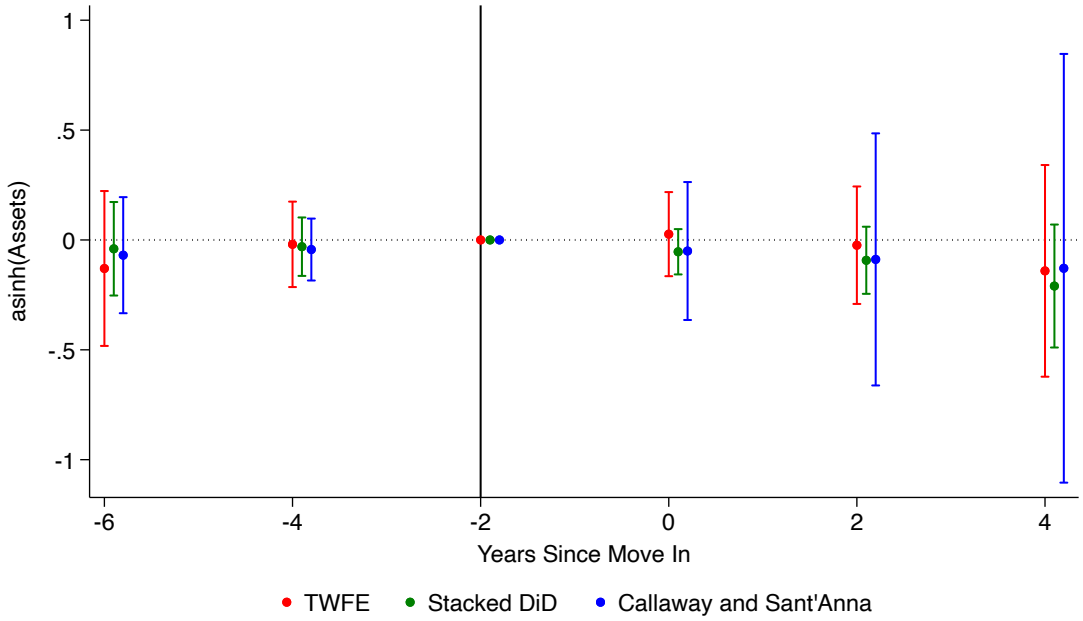
Note: Statistics are displayed for the event study sample at the baseline. Last year's income and net worth are adjusted to 2015 dollar units. Estimates are weighted and standard errors are in parentheses and adjusted for sample design. Large standard errors occur from specification that strata with one sampling unit are centered at the grand mean. Source: PSID Transition to Adulthood Supplement (2007 - 2019). * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.2: YA Demographic Characteristics for IV Sample

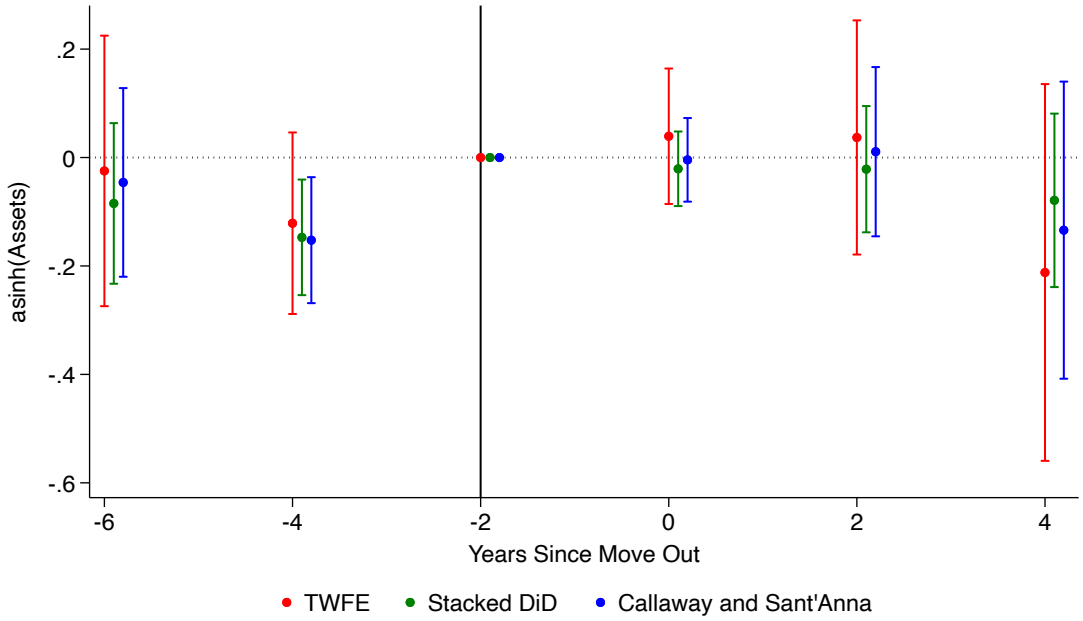
	Co-Resided	Never Co-Resided	Diff
Age	18.759	20.049	-1.290***
	(0.909)	(1.364)	
Male	0.544	0.446	0.097*
White	0.700	0.849	-0.149***
Employed	0.617	0.678	-0.061
Education			
Less than HS	0.320	0.185	0.134***
HS	0.648	0.712	-0.064
Some College	0.018	0.042	-0.024
Associate's	0.012	0.036	-0.024
Bachelor's	0.002	0.025	-0.023
Master's+	0.001	0.000	0.001
Health (1:Poor-5:Excellent)	3.843	3.730	0.113
	(0.891)	(1.013)	
Last Year's Income ($1k)	8.689	12.756	-4.067**
	(10.030)	(14.146)	
Net Worth ($1k)	2.952	2.583	0.370
	(7.271)	(6.563)	
With Student Loans	0.542	-2.075	2.617
	(9.531)	(16.186)	
Number of YAs	1,541	102	
Observations	4,717	284	

Note: Statistics are shown for the YAs included in the IV estimation (i.e., never married, not currently in a long-term relationship, and have no children) at the baseline. Estimates are weighted and standard errors are in parentheses and adjusted for sample design. Last year's income and net worth are adjusted to 2015 dollar units. Source: PSID Transition to Adulthood Supplement (2005 - 2015). * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Figure A.1: Assets Event Studies



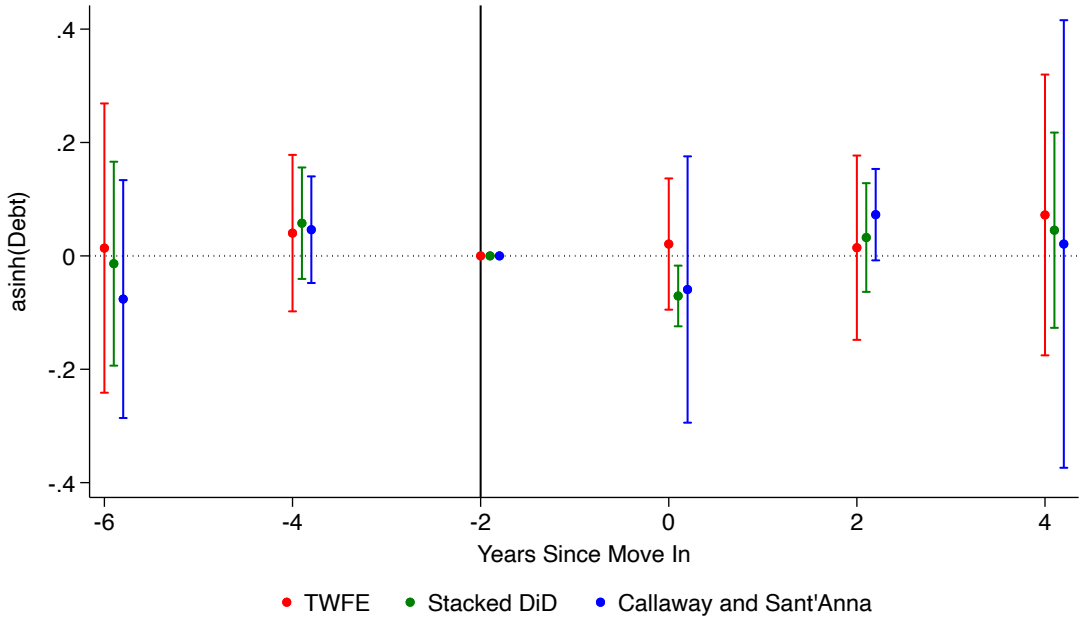
(a) Move In



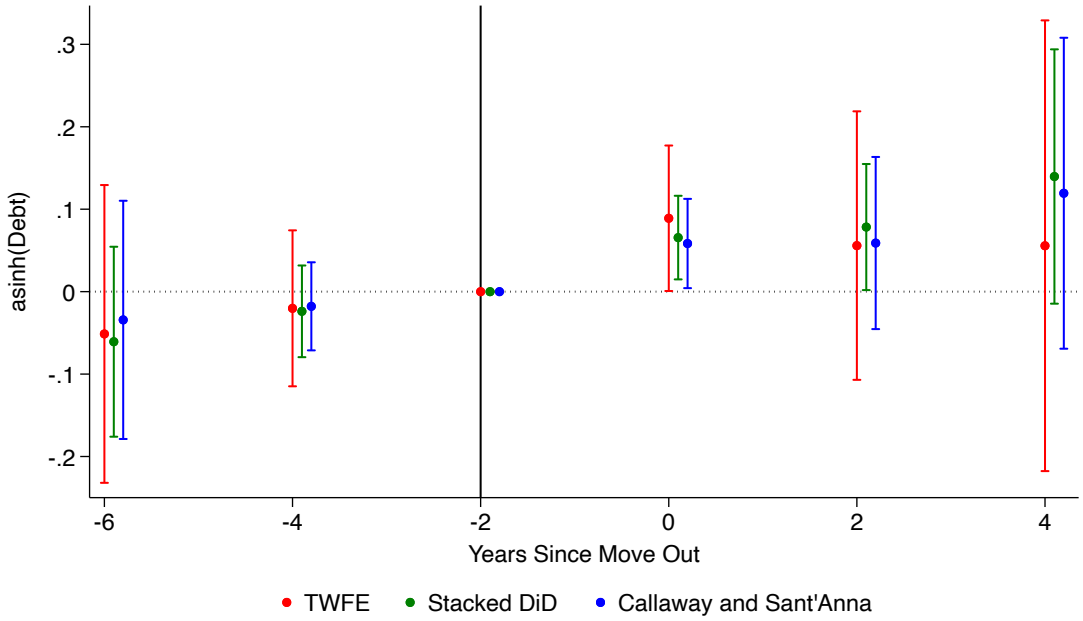
(b) Move Out

Note: Estimates are presented for the inverse hyperbolic sine of total assets in thousands of dollars. Total asset values are winsorized each year at the 99th percentile. Source: PSID Transition to Adulthood Supplement (2007 - 2019).

Figure A.2: Debt Event Studies



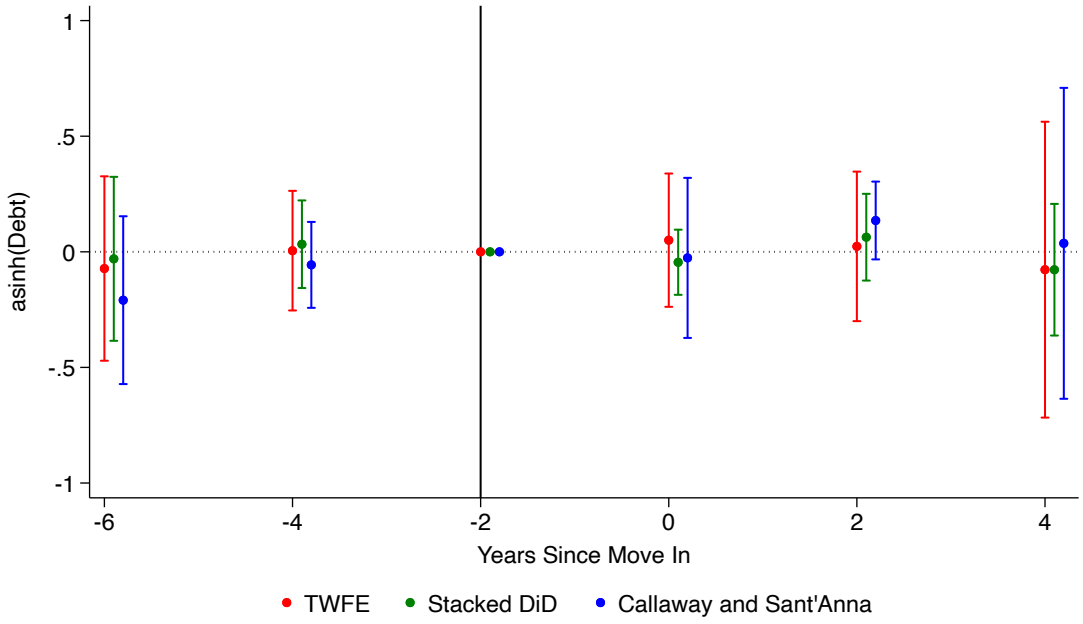
(a) Move In



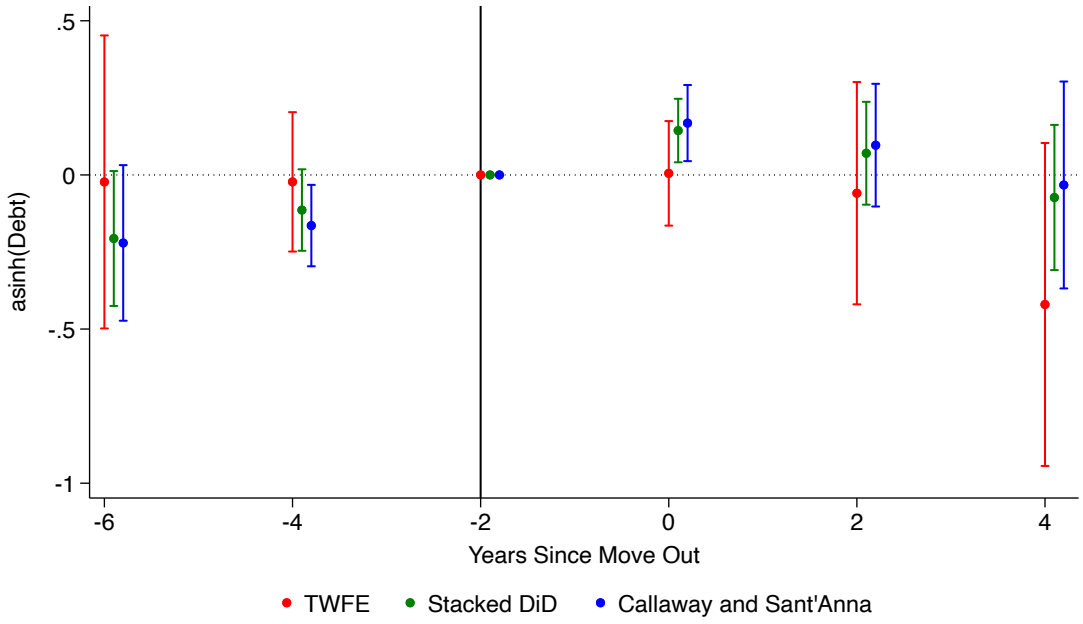
(b) Move Out

Note: Estimates are presented for the inverse hyperbolic sine of total debt in thousands of dollars. Total debt values are winsorized each year at the 99th percentile. Source: PSID Transition to Adulthood Supplement (2007 - 2019).

Figure A.3: Debt Event Studies, Including Student Loans



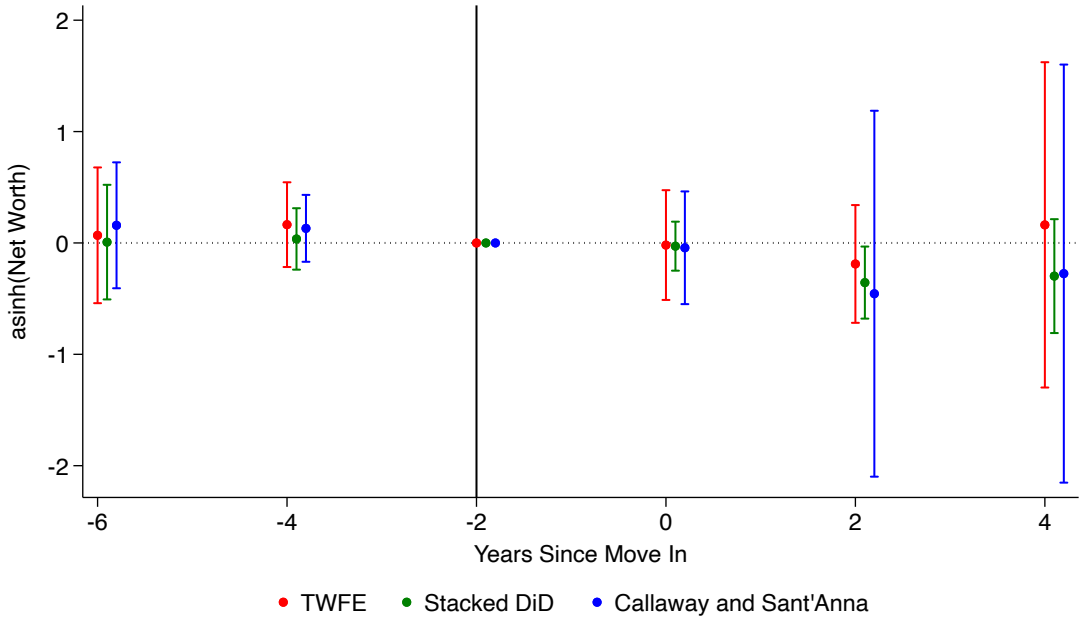
(a) Move In



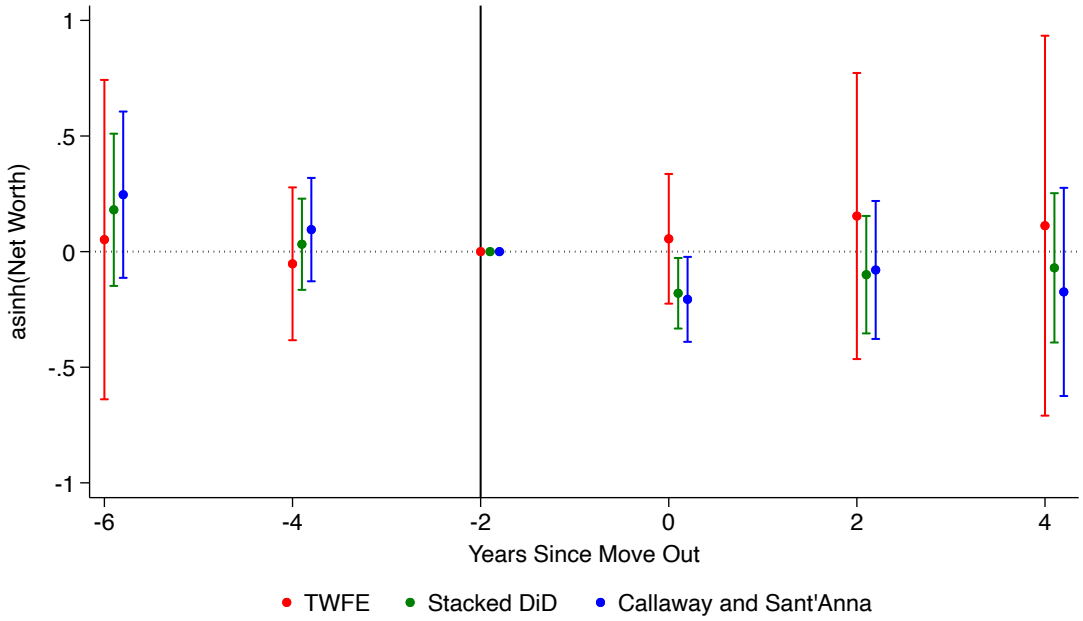
(b) Move Out

Note: Estimates are presented for the inverse hyperbolic sine of total debt in thousands of dollars. Total debt values, including any student debt, are winsorized each year at the 99th percentile. Source: PSID Transition to Adulthood Supplement (2007 - 2019).

Figure A.4: Net Worth Event Studies, Including Student Loans



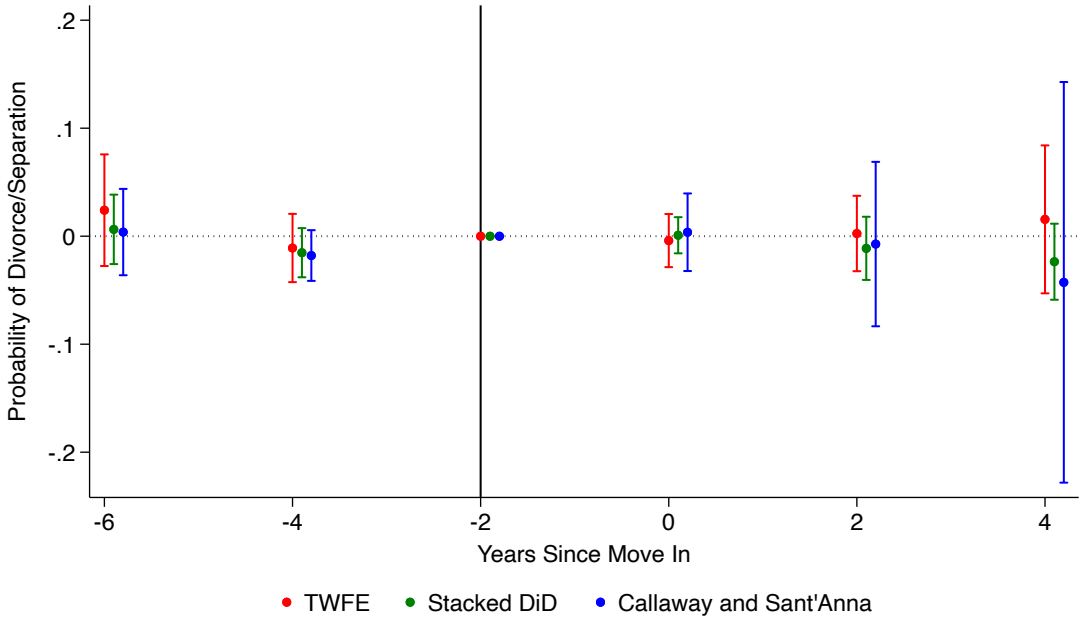
(a) Move In



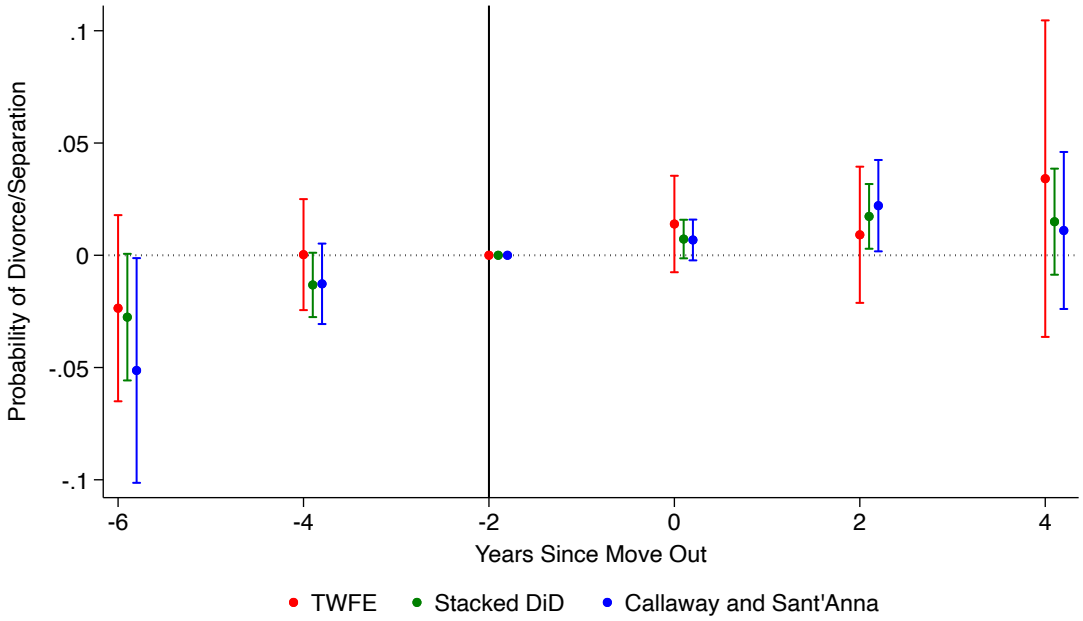
(b) Move Out

Note: Estimates are presented for the inverse hyperbolic sine of net worth in thousands of dollars. Any student debt reported is included in the calculation of net worth. Source: PSID Transition to Adulthood Supplement (2007 - 2019).

Figure A.5: Divorce/Separation Event Studies



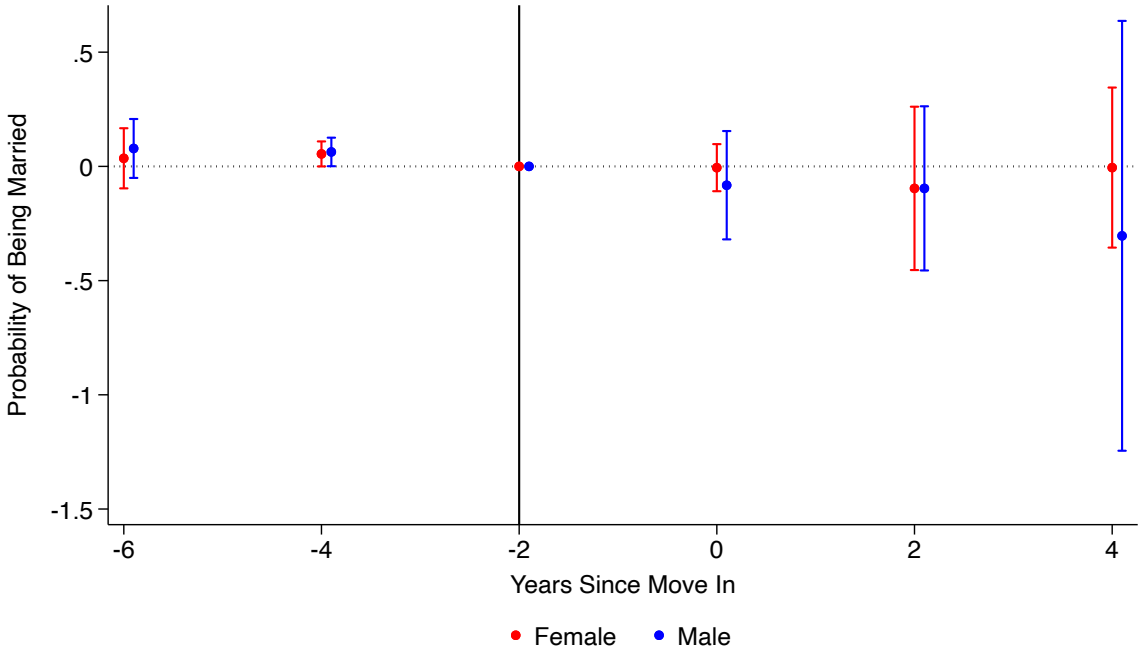
(a) Move In



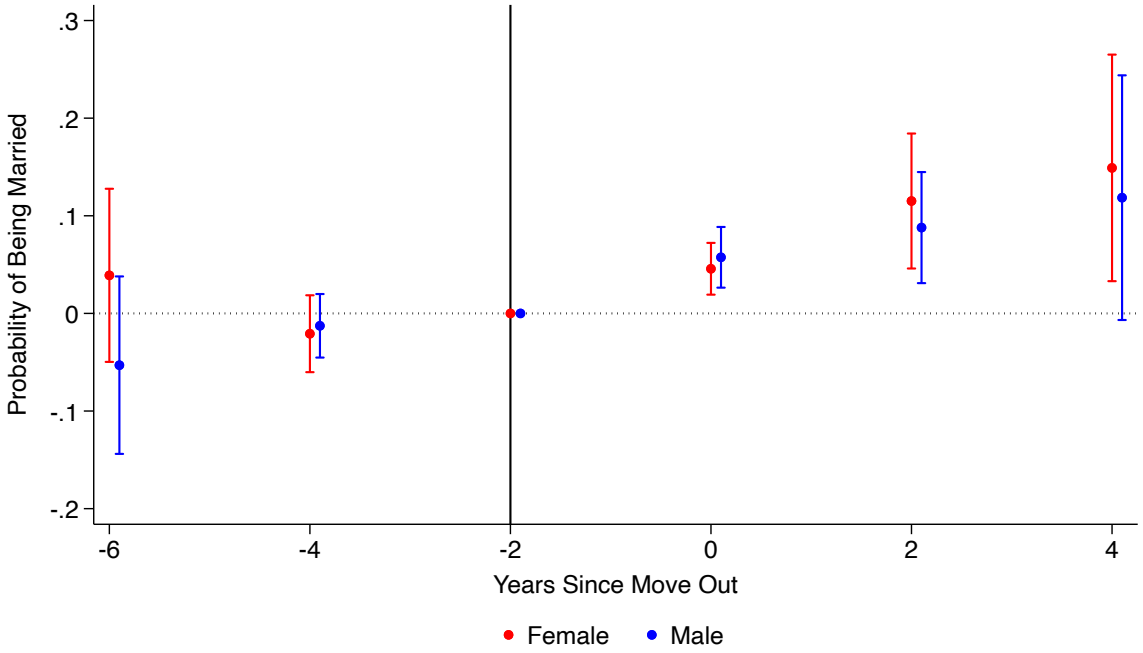
(b) Move Out

Note: Divorce/Separation is a dummy variable where 1 indicates that the YA is divorced or separated and 0 otherwise. Source: PSID Transition to Adulthood Supplement (2007 - 2019).

Figure A.6: Marriage Event Studies by Gender



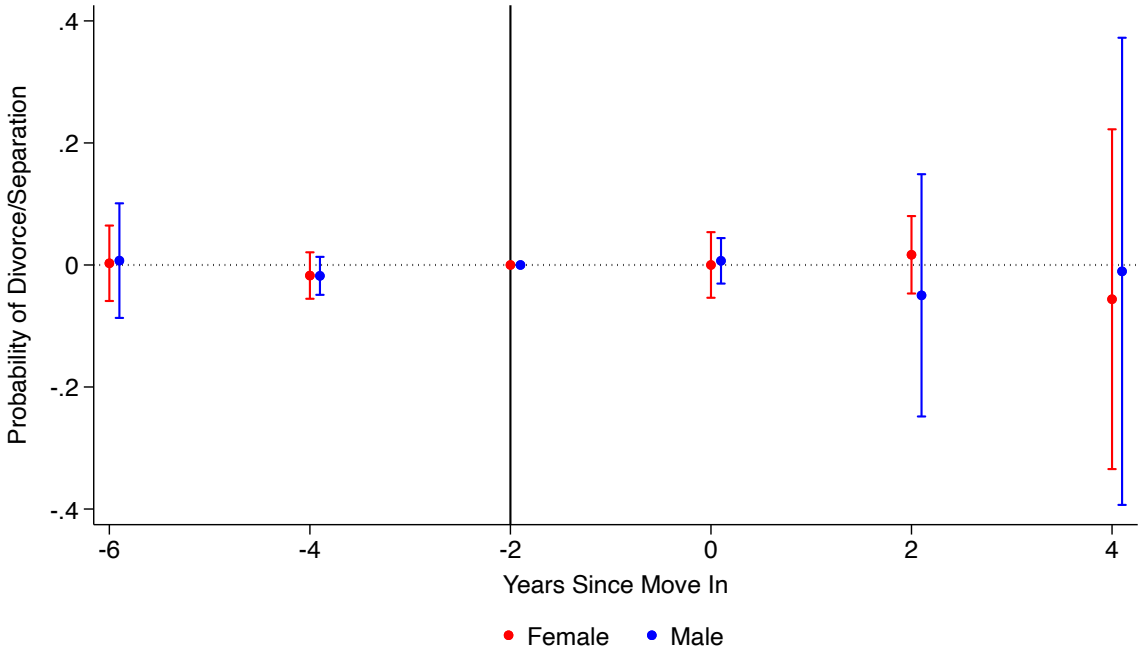
(a) Move In



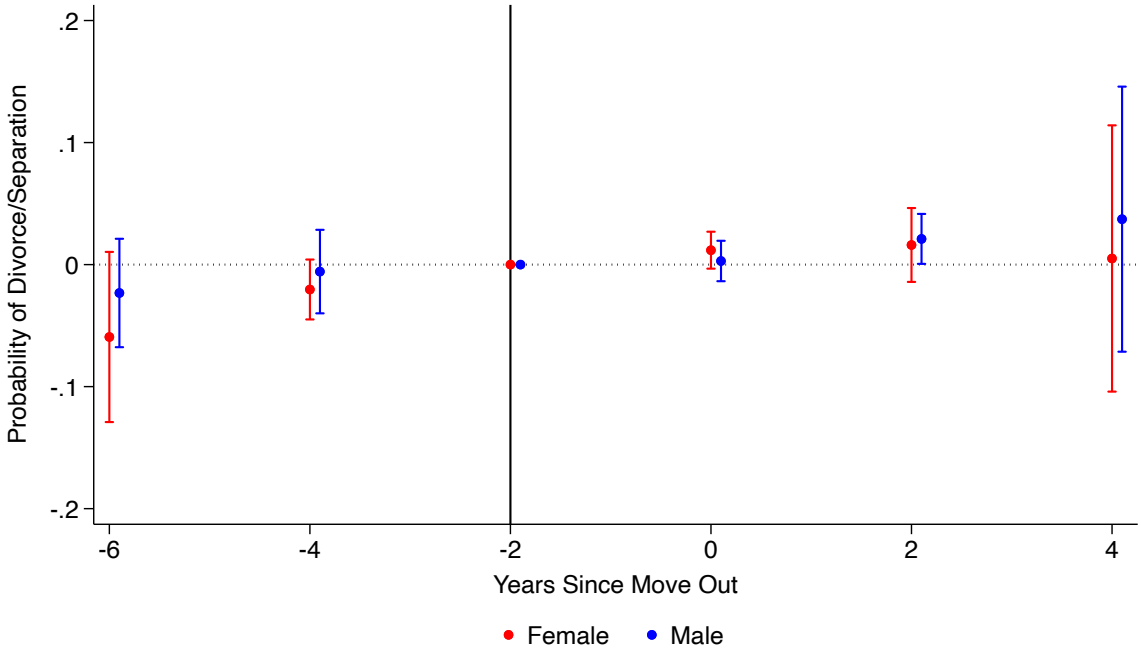
(b) Move Out

Note: Marriage is a dummy variable with 1 indicating that the YA is married and 0 otherwise. The Callaway and Sant'Anna method is used for estimation. Source: PSID Transition to Adulthood Supplement (2007 - 2019).

Figure A.7: Divorce/Separation Event Studies by Gender



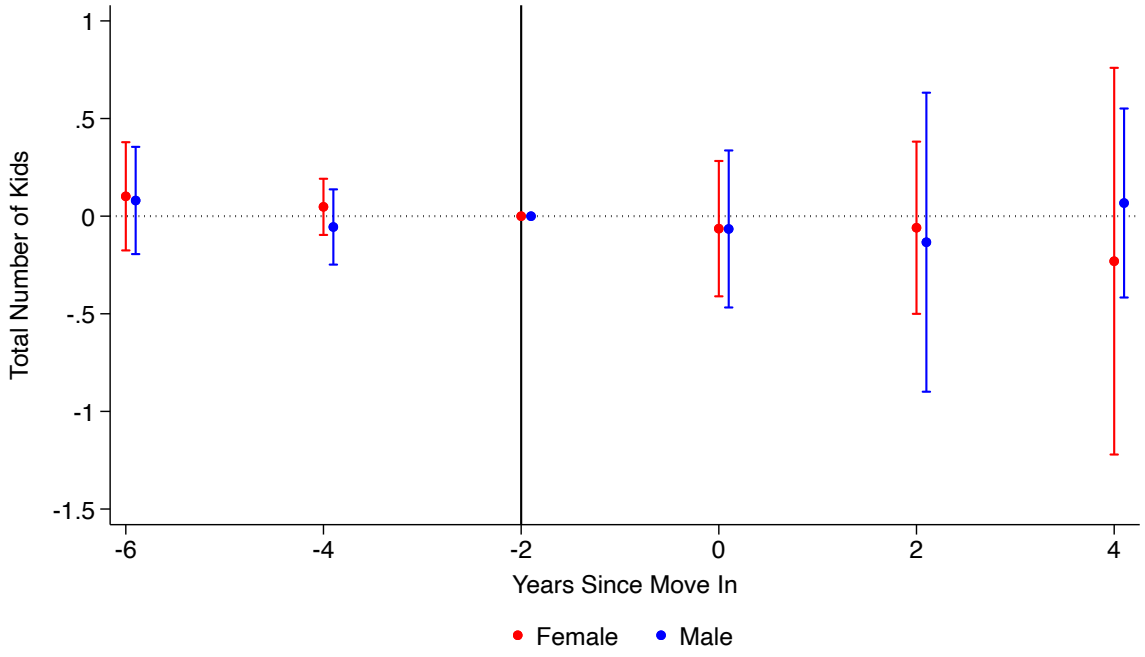
(a) Move In



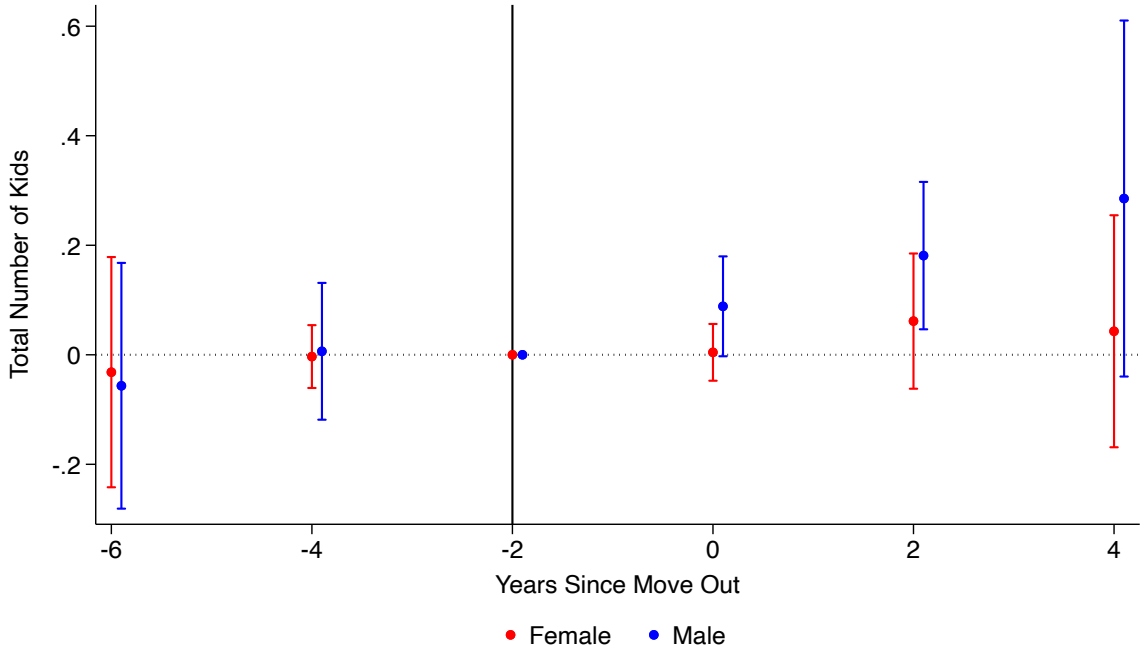
(b) Move Out

Note: Divorce/Separation is a dummy variable with 1 indicating that the YA is divorced or separated and 0 otherwise. The Callaway and Sant'Anna method is used for estimation. Source: PSID Transition to Adulthood Supplement (2007 - 2019).

Figure A.8: Total Number of Kids Event Studies by Gender



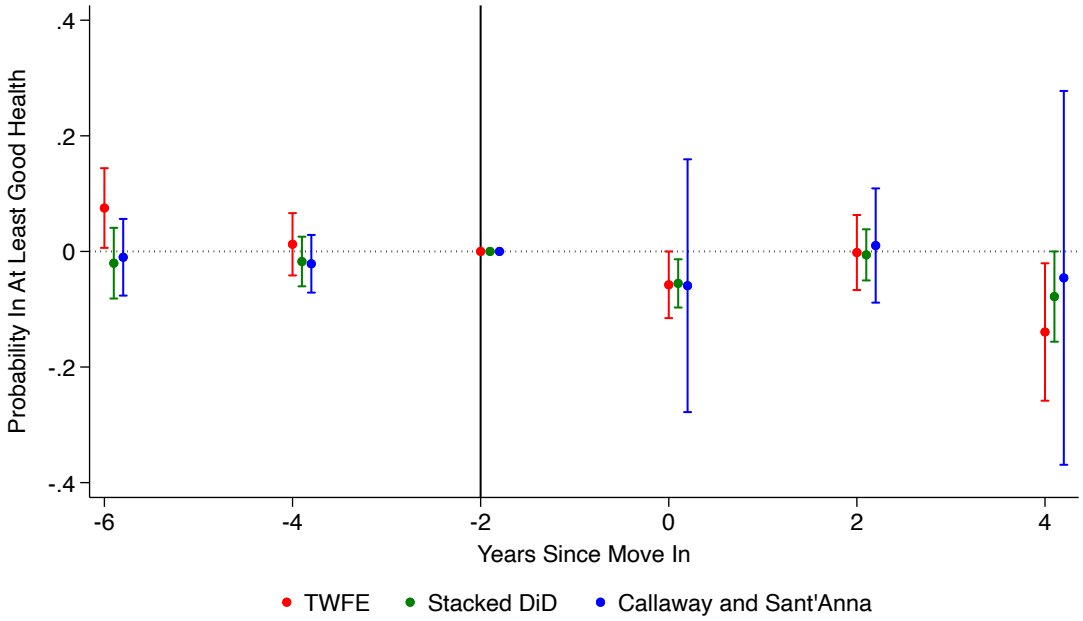
(a) Move In



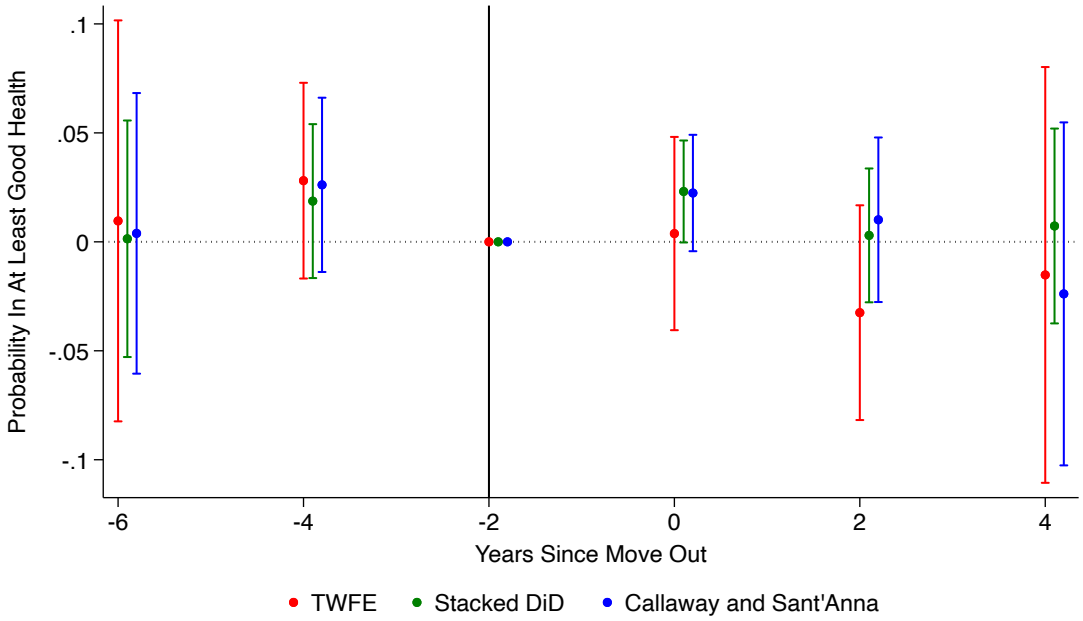
(b) Move Out

Note: The Callaway and Sant'Anna method is used for estimation. Source: PSID Transition to Adulthood Supplement (2007 - 2019).

Figure A.9: Health Event Studies



(a) Move In



(b) Move Out

Note: Health is collapsed to a dummy where 1 indicates that the YA is in at least good health and 0 if they are in fair or poor health. Source: PSID Transition to Adulthood Supplement (2007 - 2019).

Table A.3: Regressions for Assets and Debt

	Co-Residence	asinh(Assets)			asinh(Debt)			asinh(Debt+Student Loans)		
	FS	OLS	RF	IV	OLS	RF	IV	OLS	RF	IV
Unaffordability	0.025*		0.065*			0.014			-0.026	
	(0.014)		(0.036)			(0.014)			(0.034)	
Co-Residence		0.061		2.575	-0.053*		0.563	-0.179***		-1.020
		(0.043)		(1.614)	(0.031)		(0.592)	(0.065)		(1.322)
Mean of Dep. Var. ($1k)		5.165	5.165	5.165	0.427	0.427	0.427	8.124	8.124	8.124
Mean of Dep. Var. (asinh)		1.351	1.351	1.351	0.237	0.237	0.237	1.294	1.294	1.294
F	3.403									
N	5001	5001	5001	5001	5001	5001	5001	5001	5001	5001

Note: Values of the outcome variables are in thousands of dollars and transformed to the inverse hyperbolic sine. Standard errors are in parentheses and adjusted for sample design. Reported F-statistic tests for the significance of the unaffordability instrument. All regressions include individual, region, and year fixed effects, along with a control for age. Sources: PSID Transition to Adulthood Supplement (2005 - 2015). * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.4: Weak-IV Inference for asinh(Assets) and asinh(Debt)

	Assets	Debt	Debt+Stu.Loans
Co-Residence	2.575	0.563	-1.020
	(1.879)	(0.631)	(1.435)
Eff. F	41.454	41.454	41.454
AR p-value	0.053	0.392	0.483
AR CI	(-∞,∞)	(-∞,∞)	(-∞,∞)
N	5001	5001	5001

Note: Standard errors are in parentheses and clustered at the strata and PSU level. Effective F refers to Montiel Olea and Pflueger (2013) F-statistic. AR is the Anderson-Rubin (1949) test and the corresponding confidence interval. All regressions include an age control and fixed effects for individual, region, and year. Sources: PSID Transition to Adulthood Supplement (2005 - 2015). * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.5: Regressions for Ideal Number of Children

	OLS	FS	RF	IV
Unaffordability		0.025*	0.030	
		(0.014)	(0.023)	
Co-Residence	-0.007			1.185
	(0.032)			(1.297)
Mean of Dep. Var.	2.232		2.232	2.232
F		3.511		
N	4979	4979	4979	4979

Note: Standard errors are in parentheses and adjusted for sample design. Reported F-statistic tests for the significance of the unaffordability instrument. All regressions include individual, region, and year fixed effects, along with a control for age. Sources: PSID Transition to Adulthood Supplement (2005 - 2015). * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.6: Weak-IV Inference for Likelihood and Ideal Number of Kids

	Marriage	LT Relationship	Kids	Ideal Num. Kids
Co-Residence	-0.175	0.225	0.338	1.185
	(0.337)	(0.298)	(0.443)	(1.155)
Eff. F	41.454	80.881	41.352	42.886
AR p-value	0.627	0.457	0.403	0.166
AR CI	(-∞,∞)	(-∞,∞)	(-∞,∞)	(-∞,∞)
N	5001	3272	4998	4979

Note: Standard errors are in parentheses and clustered at the strata and PSU level. Effective F refers to Montiel Olea and Pflueger (2013) F-statistic. AR is the Anderson-Rubin (1949) test and the corresponding confidence interval. All regressions include an age control and fixed effects for individual, region, and year. Sources: PSID Transition to Adulthood Supplement (2005 - 2015). * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$